



**BRIDGING THE GAP:
COLLABORATING AND AMPLIFYING OUR VOICES**

**OCTOBER 8-10, 2026 • BAIRD CENTER
400 W WISCONSIN AVE • MILWAUKEE, WI 53203**



**WEDNESDAY,
OCTOBER 7**

**FINAL
PROGRAM**



**American Society
of Hand Therapists®**

meetings.asht.org

A \$235

discount on the
Annual Meeting

Free subscriptions
to the *Journal of Hand Therapy*
(\$182 VALUE),
and the *ASHT Times* magazine
(\$100 VALUE),
and a **50% DISCOUNT** to
the *Journal of Hand Surgery*

**ONLINE
BOOKSTORE**
discounts up
to **\$376**

Discounts on
**ASHT Career
Center postings**
(10% SAVINGS)

**The value
OF MEMBERSHIP IN
ASHT
REALLY ADDS UP:**

**Free CE
credits**
through
monthly
Journal Club,
UE Institute
& *Pediatric
Case Reviews*
(\$1,200 VALUE)

COMPLIMENTARY
listing in the
FIND A THERAPIST
public membership
directory

Discounts on the
continuing education
Webinar Series
(\$500+ savings)

IT'S EASY TO SEE

HOW YOUR MEMBER DUES INVESTMENT
PAYS FOR ITSELF!

Please see reverse for more information

ASHT is the only association
dedicated to meeting the needs of
hand therapists.

ASHT offers a wide range of membership levels to
occupational, physical and hand therapists, as
well as hand surgeons, nurse practitioners and allied
health professionals!

BENEFITS

PUBLICATIONS

- Annual subscription to the quarterly *Journal of Hand Therapy*
- *ASHT Times* online member magazine
- Over 50% off the price of ASSH's *Journal of Hand Surgery*

CONTINUING EDUCATION

- Discounted registration to the ASHT Annual Meeting
- Continuing education courses and events, including Hand Therapy Review Course, Hands-on Orthotics workshops, popular webinar series, ASHT traveling course, UE Institute and Pediatric Case Reviews
- Discounts on publications and products

PRACTICE MANAGEMENT

- Best practice standards for hand and upper extremity therapy domain
- Legislative Action Center
- Resources for your hand and upper extremity therapy practice
- Professional liability insurance at member rates

RESEARCH

- Journal Club — official monthly online discussion forum for the *Journal of Hand Therapy* (earn one free CE credit)
- Practical support for new researchers
- Monthly research updates
- Research Community meetings

REFERRALS

- Find a Member Therapist online public directory
- Find a Clinic online public directory

CAREERS

- Enhanced career center for posting & searching jobs
- Mentoring Program
- Leadership Development Program

NETWORKING

- Reach therapists across the US and around the world
- ASHT Connect mobile app, offering an online community forum and member-to-member connection
- Searchable member directory
- Eligibility for ASSH Affiliate membership



American Society
of Hand Therapists®

TABLE OF CONTENTS

ASHT Leadership.....	5
ASHT Awards	6
General Information	11
Continuing Education Information	12
Program	21
Schedule at a Glance.....	44
Exhibitor Directory.....	47
Abstract Presentations.....	53

The American Society of Hand Therapists (ASHT) gratefully acknowledges the following companies which have elected to sponsor the ASHT 2026 Annual Meeting.

PLATINUM



GOLD



SILVER



On behalf of the 2026 ASHT Annual Meeting Committee, it is my pleasure to extend a warm invitation to our 49th Annual Meeting — held for the first time in Milwaukee, WI. This year's theme, "Bridging the Gap: Collaborating and Amplifying Our Voices," reflects our continued commitment to sustaining and advancing our specialty. Together, we will explore how the small, intentional actions we take each day can create meaningful impact for both our field and the patients we serve. We will challenge ourselves to pursue excellence in care while identifying practical and attainable ways to elevate the visibility of our vital work.

Our program promises to be both dynamic and comprehensive, beginning with our third annual Pediatric Specialty Day, thoughtfully developed by co-chairs Jemerie Hopkins, MSOT, CHT, and Karen Ayala, MSOT, CHT. This day will feature an exciting keynote address by Isabelle Renard-Fontaine, a world-renowned specialist in neuromodulation for pediatric upper extremity conditions.

The Annual Meeting will follow, showcasing an exceptional breadth of high-quality content. We are grateful to all who contributed submissions, helping to shape a rich and engaging program. Highlights include interactive Pre-Conference Institutes, more than 40 concurrent instructional sessions, clinical posters, cutting-edge scientific presentations and impactful plenary sessions. Our exhibit hall will also feature the latest innovations in hand and upper extremity therapy, including virtual reality platforms, orthotic and prosthetic solutions, documentation tools and more.

Our plenary sessions are designed to inspire both excellence and advocacy. The opening panel — featuring passionate hand therapists and surgeons — will explore how attention to the "small things" can drive optimal outcomes in flexor tendon injuries. International perspectives on the management of hypermobility disorders will be shared by Dr. Marta Jokiel. Finally, our Presidential Invited Lecture will highlight the power of community impact as Samantha Tadych shares her journey from TMR surgery and pre-prosthetic devices through body-powered and myoelectric prostheses, emphasizing the challenges, problem-solving and perseverance required to achieve proficient functional use.

I look forward to connecting with colleagues and experiencing the vibrant community of Milwaukee. The meeting will take place in the South Building of the Baird Center, conveniently located in downtown Milwaukee and directly across from our host hotel, the Hilton Milwaukee. While in the city, I encourage you to explore the lakefront, attend a local festival, enjoy a brewery tour or experience the city's renowned culinary scene. For more information, please browse Visit Milwaukee or explore social media using #VISITMKE.

I hope to see you in Milwaukee.

Rachel Pigott MPH, OTR/L, CHT
ASHT 2026 Annual Meeting Committee Chair



MISSION

To build and support the community for professionals dedicated to the excellence of hand and upper extremity therapy.

VISION

To be the recognized leader in advancing the science and practice of hand and upper extremity therapy through education, advocacy, research and clinical standards.

WITH OUR THANKS

ASHT is supported by an often-invisible team of volunteers who selflessly dedicate their time and expertise to advance the hand and upper extremity therapy specialty.

We extend our gratitude to all our volunteers. Whether you serve on a committee or contribute materials for a workshop, you are the lifeblood of the society. Thank you for your time and energy, your efforts and your achievements.

ASHT PAST PRESIDENTS

2024-2025 Kimberly A. Masker, OTD, OTR/L, CHT
2023-2024 Aviva L. Wolff, EdD, OTR, CHT
2022-2023 Kendyl R. Brock Hunter, OTR/L, CHT
2021-2022 Diane Coker, PT, DPT, CHT
2020-2021 Rachel Pigott, MPH, OTR/L, CHT
2019-2020 Mo Herman, MA, OTR/L, CHT
2018-2019 Linda Klein, OTR, CHT
2017-2018 Kris Valdes, OTD, OT, CHT
2016-2017 Gary Solomon, MBA, MS, OTR/L, CHT
2016 Barbara Winthrop, MA, OTR, CVE, CHT, FAOTA
2015 Jane Fedorczyk, PT, PhD, CHT
2014 Maureen Hardy, MS, PT, CHT
2013 Sue Michlovitz, PT, PhD, CHT
2012 Dorit H. Aaron, MA, OTR, CHT, FAOTA
2011 Jerry Coverdale, OTR, CHT
2010 Peggy Boineau, OTR, CHT
2009 Joy MacDermid, BScPT, PhD
2008 Paige E. Kurtz, MS, OTR/L, CHT
2007 Stacey L. Doyon, OTR/L, CHT
2006 Christine Muhleman, OTR/L, CHT
2005 Donna Breger Stanton, MA, OTR/L, CHT, FAOTA
2004 William W. Walsh, MBA, MHA, OTR/L, CHT
2003 Chris B. Blake, OTR/L, CHT
2002 Ginger Clark, OTR, CHT
2001 Lauren Rivet, LOTR, CHT, FAOTA
2000 Joan Sullivan, MA, OTR, CHT
1999 Karen Stewart Pettengill, MS, OTR/L, CHT
1998 Judy Bell-Krotoski, OTR, FAOTA, CHT
1997 Terri L. Wolfe, OTR/L, CHT
1996 Valerie Holdeman Lee, PT, CHT
1995 Missy Donnell, OTR, CHT
1994 James W. King, MA, OTR, CHT
1993 Heidi Hermann Wright, MBA, OTR, CHT
1992 Janet Waylett-Rendall, OTR, CHT
1991 Patricia Taylor Mullins, PT, CHT
1990 Judy C. Colditz, OTR/L, CHT, FAOTA
1989 Nancy M. Cannon, OTR, CHT
1988 Lynlee Fullenwider, OTR/L, CHT
1987 Anne Callahan, MS, OTR/L, CHT, CLT
1986 Shellye (Bittinger) Godfrey, OTR/L, CDE II, CHT, CWS
1985 Georgiann Laseter, OTR, FAOTA, CHT
1984 Mary C. Kasch, OTR, CVE, CHT
1983 Margaret S. Carter, OTR, CHT
1982 Evelyn Mackin-Henry, PT
1981 Gloria Hershman, OTR, FAOTA
1980 Karen H. (Prendergast) Lauckhardt, MA, PT, CHT
1978 - 79 Bonnie Olivett, OTR, CHT

2025-2026 ASHT BOARD OF DIRECTORS

Danielle Sparks, DHS, MOT, OTR, CHT
President

Kim McVeigh, MBA, OTR/L, CHT, FACHE
President-Elect

Kimberly G. Kraft, PT, DPT, CHT
Vice President

Robert McClellan, OTR/L, CHT, COMT-UL
Secretary/Treasurer

Ann Marie Feretti, EdD, OTR/L, CHT
Secretary/Treasurer-Elect

Kimberly A. Masker, OTD, OTR/L, CHT
Immediate Past President

Angela Stephens, DHS, OTR/L, CHT
Practice Division Director

Cara Smith, PT, DPT, CHT
Education Division Director

Lori Algar, OTD, OTR/L, CHT
Research Division Director

Gayle Severance, MS, OT/L, CHT
Outreach Division Director

Phyllis Ross, OTD, OTR/L, CHT, CLT
Board Member-at-Large

Stephanie D. Strouse, OTD, OTR/L, CHT
Board Member-at-Large

2026 ASHT ANNUAL MEETING COMMITTEE

Rachel M. Pigott, MPH, OTR/L, CHT
Annual Meeting Committee Chair

Mo Herman, MA, OTR/L, CHT
Annual Meeting Committee Vice Chair

Danielle Sparks, DHS, MOT, OTR, CHT
ASHT President and Committee Board Liaison

Alyssa Phillips, CSCd, MOT, OTR/L

Ann Porretto-Loehrke, PT, DPT, CHT, COMT, CMTPT

Cassie Schuh, OTR, CHT, COMT, CMTPT

Gary Solomon, MBA, MS, OTR/L, CHT

Julie Berris, OTR/L, CHT

Kebra Porter, OTR/L, OTD

Laura Carlos, MOT, OTR/L, CHT, CEAS I

Mary Mundrane-Zweiacher, EdD, MPT, ATC, CHT

Michelle McMurray, MOT, OTR/L, CHT

Rachel Thomson, PT, DPT, CHT

Rebekah Wade, OTR/L

Stefanie Stevenson, OTR/L, CHT

Lori Algar, OTD, OTR/L, CHT
Research Division Liaison

Cara Smith, PT, DPT, CHT, MSHA
Education Division Director

Gayle Severance, MS, OT/L, CHT
Outreach Division Director

Jemerie Hopkins, MS, OTR, CHT
2026 Pediatric Specialty Day Co-Chair

Karen Ayala, MS, OTR, CHT
2026 Pediatric Specialty Day Co-Chair

ASHT STAFF

Gene Terry, CAE, IOM
Chief Executive Officer

Jess Ercolino
Executive Director

Megan Dougherty
Director of Education & Outreach

Monica Barnaby
Member Services & Research Coordinator

Jessica Hayes, CMP, HMCC
Meeting Manager

Ryan McGlashen
Associate Meeting Manager

Amanda Bray
Industry Relations Manager

Carole Bernstein
Editorial Manager

ASHT

1120 Route 73, Suite 200 • Mt. Laurel, NJ 08054 • www.asht.org

ASHT AWARDS

LIFETIME FELLOWSHIP

Lifetime Fellowship status is an honor awarded to individuals in recognition of career-long contributions to the Society and the field of hand and upper extremity rehabilitation. Lifelong ASHT Fellows are honored for their long-term Society membership participation, exemplary leadership and documented achievements in the field. The cumulative effects of these recipients have been paramount in advancing the field of hand and upper extremity therapy through ASHT. Their talents have been diverse with integrated accomplishments. The nomination is open to ASHT members in good standing for a minimum of 25 years.

ASHT LIFETIME FELLOWS

Judith A. Bell-Krotoski, OTR, FAOTA, CHT
Donna Breger Stanton, OTD, OTR/L, CHT, FAOTA
Nancy Cannon, OTR, CHT
Margaret S. Carter, OTR, CHT
Gloria DeVore, OTR
Roslyn B. Evans, OTR/L, CHT
Jane Fedorczyk, PT, PhD, CHT, FAPTA
Elaine E. Fess, MS, OTR, FAOTA, CHT
Sharon Flinn, PhD, OTR/L, CHT
Kenneth R. Flowers, PT, CHT (retired)
Lynnlee Fullenwider, OTR/L, CHT
Shellye Godfrey, OTR/L, CHT
Maureen Hardy, MA, PT, CHT
Mary C. Kasch, OTR, CVE, CHT
James W. King, OTR, PhD, CHT
Georgiann Laseter, OTR, FAOTA, CHT
Karen H.P. Lauckhardt, MA, PT, CHT
Joy MacDermid, PT, PhD
Evelyn J. Mackin, PT
Maude Malick, OTR
Susan Michlovitz, PT, PhD, CHT, FAPTA
Bonnie Olivett, OTR, CHT
Terri Wolfe, OTR/L, CHT

HONORARY MEMBERSHIP AWARD

The purpose of **Honorary Membership Award** is to recognize persons other than certified hand therapists who have made significant contributions to ASHT and the specialty of hand and upper extremity therapy through education, advocacy, research, public service, marketing and promotion of the ASHT's mission, vision and values; whose achievements are of national or international significance

or influence and have provided notable service to the specialty of hand and upper extremity therapy.

Honorary Membership is awarded to an individual who is not already a member of ASHT and who is not eligible for Active or Associate membership in the society.

ASHT HONORARY MEMBERS

Peter C. Amadio, MD
Lois M. Barber, OTR, FAOTA
Nathalie R. Barr
Paul Brand, FRCS
Paul C. Dell, MD
Robert J. Duran, MD
Adrian E. Flatt, MD
L. Irene Hollis, OTR
James H. Hunter, MD
Dorothy Kaufman
Scott Kozin, MD
Don Lalonde, MD, FRCS
John W. Madden, MD
John A. McAuliffe, MD
Robert McFarlane, MD
Wyndell Merritt, MD, FACS
Rita Patterson, PhD
Miguel Pirela-Cruz, MD
Neal Pratt, PT, PhD
Erik A. Rosenthal, MD
Alfred B. Swanson, MD
Robert M. Szabo, MD, MPH
Kululu M. Von Prince, OTR, EdD

NATHALIE BARR LECTURESHIP AWARD

The **Nathalie Barr Lectureship Award** is among ASHT's highest honors, recognizing and honoring an ASHT member who has made significant original contributions to hand and upper extremity rehabilitation and to ASHT. The nominee must have shared this information through publications and speaking presentations and/or shared a unique quality of work, theory, research and education that is original and genuinely supports ASHT's mission, vision and values in one of the following ways:

- Development or refinement of professional theory, clinical methods and/or techniques used in hand and upper extremity therapy

- Outstanding research with outcomes evidence to support hand and upper extremity therapy treatment
- Contributions to hand and upper extremity therapy development as a profession and to ASHT
- Contributions to the specialty of hand and upper extremity rehabilitation and/or healthcare not related to ASHT, specifically the candidate's contributions to public service and/or awareness of hand and upper extremity therapy

The nomination is open to all Active ASHT members in good standing for at least five years. The honorary lecture is announced at the Annual Meeting and given at the following year's meeting.

NATHALIE BARR LECTURESHIP RECIPIENTS

2025 Virginia O'Brien, OTD, OTR/L, CHT
2024 Gary Solomon, MBA, MS, OTR/L, CHT
2023 Cindy Ivy, M.ED, OTD, CHT
2020 Kristin Valdes, OTD, OTR, CHT
2019 Corey McGee, PhD, OTR/L, CHT
2018 Jane Fedorczyk, PT, PhD, CHT
2017 Terri Skirven, OTR/L, CHT
2016 Rebecca Neiduski, PhD, OTR/L, CHT
2015 Caroline Stegink-Jansen, PT, PhD, CHT
2014 Karen Pettengill, MS, OTR/L, CHT
2012 Paul LaStayo, PT, PhD
2010 Maureen Hardy, MS, PT, CHT
2009 Karen H.P. Lauckhart, MA, PT, CHT
2008 Susan Michlovitz, PT, PhD, CHT
2007 Donna Breger Stanton, MA, OTR/L, CHT, FAOTA
2006 Patricia Taylor, PT, CHT
2005 Joy MacDermid, BScPT, PhD
2004 Jim King, MA, OTR
2003 Janet Waylett-Rendall, OTR, CHT
2002 Lynnlee Fullenwider, OTR/L, CHT
2001 Georgiann Laseter, OTR, FAOTA, CHT
2000 Jean Casanova, OTR, CHT
1999 Judith Colditz, OTR/L, CHT, FAOTA
1998 Mark T. Walsh, PT, MS, CHT
1997 Anne Callahan, MS, OTR/L, CHT, CLT
1996 Roslyn B. Evans, OTR/L, CHT
1995 Carolina S. deLeeuw, MA, OTR
1994 Kenneth Flowers, PT, CHT
1993 Nancy Cannon, OTR, CHT
1992 Bonnie L. Olivett, OTR, CHT
1991 Mary C. Kasch, OTR, CVE, CHT
1990 Gloria DeVore, OTR
1989 Elaine E. Fess, MS, OTR, FAOTA, CHT
1988 Judith A. Bell-Krotoski, OTR, FAOTA, CHT
1987 Maude Malick, OTR
1986 Evelyn J. Mackin, PT

ASHT AWARDS

PAUL BRAND AWARD

The **Paul Brand Award** recognizes individuals who have exemplified humanitarianism in their work as a hand therapist in addition to providing clinical and professional excellence in several facets of practice. The candidate for this award is one who strives for the advancement of hand and upper extremity therapy, which may include underserved areas nationally and/or internationally.

The nomination is open to all Active, Lifetime, Associate and Affiliate members of ASHT in good standing for a minimum of five consecutive years including the year nominated.

PAUL BRAND AWARD RECIPIENTS

2025 Karen Roeming, OT, MA, CHT
2024 Captain Andra F. Battocchio, PT, DPT, CHT
2022 Celeste Freeman, OTR/L, CHT
2020 Cynthia Cooper, MFA, MA, OTR/L, CHT
2017 Melissa C. Thurlow, MBA, OTR/L, CHT
2015 Ginny Gibson, OTD, OTR/L, CHT
2014 Rebecca Neiduski, PhD, OTR/L, CHT
2011 Caroline Stegink-Jansen, PT, PhD, CHT
2010 J. Martin Walsh, OTR/L, CHT
2007 Pamela Silverman, OTR, CHT
2006 Lynn Bassini, MA, OTR, CHT
2005 Nancy Chee, OTR/L, CHT; Linda Lehman, MPH, OTR
2004 Dorit Aaron, MA, OTR, CHT, FAOTA
2003 Shrikant Chinchalkar, BScOT, OTR, CHT
2002 Judith A. Bell-Krotoski, OTR, FAOTA, CHT

MACDERMID LIFETIME SCIENTIFIC AWARD IN HAND THERAPY

The **MacDermid Lifetime Scientific Award in Hand Therapy** recognizes an ASHT member who has made contributions through research to the science and practice of hand and upper extremity rehabilitation, which have subsequently changed hand and upper extremity therapy professional standards. The award is announced at the ASHT Annual Meeting. The recipient of the award will present his/her research contributions during the MacDermid Lectureship at the following year's Annual Meeting.

This nomination is open to ASHT members in good standing who have demonstrated career-long research-related endeavors that have had a lasting and transformative impact on the science and practice of hand and upper extremity therapy.

MACDERMID LIFETIME SCIENTIFIC AWARD IN HAND THERAPY RECIPIENTS

2024 Virgil Mathiowetz, PhD, OTR/L, FAOTA
2023 Kristin Valdes, OTD, OTR/L, CHT
2013 Joy MacDermid, PT, PhD

ASHT HALL OF FAME

The **ASHT Hall of Fame** recognizes hand and upper extremity therapists who have reached the pinnacle of excellence in all areas of hand therapy. The areas identified for excellence include clinical practice, research, advocacy, education, international involvement and innovation, but this may evolve as hand and upper extremity therapy continues to evolve.

The nomination is open to former hand and upper extremity therapists currently retired from the profession. Nominees must be former (or current Retired) ASHT members with previous volunteer and leadership experience within the Society.

ASHT HALL OF FAME

Judy Colditz, OT/L, CHT, FAOTA (2024)
Susan Michlovitz, PT, PhD, FAPTA (2022)
Donna Breger Stanton, OTD, OTR/L, FAOTA (2021)
Judy Bell-Krotoski, OTR, FAOTA, CHT (2020)
Margaret Carter Wilson, OTR, CHT (2020)
Mary Kasch, OTR, CVE, CHT (2020)
Evelyn Mackin, PT (2020)
Bonnie Olivett, OTR, CHT (2020)
Karen Prendergast Lauckhardt, MA, PT, CHT (2020)

JOURNAL OF HAND THERAPY FIRST-TIME WRITER'S AWARD

This award recognizes a first-time writer's contribution to evidence that supports the hand and upper extremity therapy profession.

JOURNAL OF HAND THERAPY FIRST-TIME WRITER'S AWARD RECIPIENTS

2025 Elena Munoz-Gomez, PT, PhD
2024 Cristina Campos-Villegas, PhD
2023 Kristen Farris, BS
2022 Mary Whitten, DHSc, MOT, CHT
2021 Alice Orts Hansen
2020 Shirley J. F. Collocott, MHSc
2019 Sandy C. Takata, OTD, OTR/L
2018 Burcu Dilek, PhD, PT
2017 Hector Gutierrez-Espinoza, MD
2016 Ahmad Zamir Che Daud, PhD (Aus), BSc. Hons (UK), Dip (Mal)
2015 Ulrika Wijk, OT, MSc
2014 Betty Smoot, PT, DPTSc
2013 Christos Karagiannopoulos
2012 Benjamin Boyd, PT, DPTSc, OCS

BEST GRASSROOTS EFFORT AWARD

The **Best Grassroots Effort Award** recognizes an ASHT member or group's (e.g., state association, hospital system, academic institution, etc.) passionate and consistent involvement in governmental affairs at the national, state and/or local level during that calendar year.

Nominees for the Best Grassroots Effort must be either an Active ASHT member or an Affiliated Group (that includes at least one active ASHT member for at least two years).

BEST GRASSROOTS EFFORT AWARD RECIPIENTS

2022 Mary Barnes, MOT, CHT, CIND

EMERGING HAND THERAPIST AWARD

The **Emerging Hand Therapist Award** will address the issues and achievements faced by Certified Hand Therapists within the first five years of initial HTCC certification as they begin in their specialty careers.

Nominees for the Emerging Hand Therapist Award must be an Active member in good standing of ASHT for at least three years.

EMERGING HAND THERAPIST AWARD RECIPIENTS

2025 Laura Carlos, MOT, OTR/L, CHT, CEAS I
2024 Brooke Ochoa, OTR/L, CHT
2022 Macyn Stonner, OTD, OTR/L, CHT

GENERAL INFORMATION

IN-PERSON SCHEDULE OF ACTIVITIES

REGISTRATION HOURS:

LOCATION: GRAND BALLROOM FOYER

Wednesday, October 7 | 6:00 AM – 6:00 PM

Thursday, October 8 | 6:00 AM – 7:00 PM

Friday, October 9 | 6:00 AM – 6:30 PM

Saturday, October 10 | 6:00 AM – 7:00 PM

SPEAKER READY ROOM HOURS:

LOCATION: ROOM S102 D

All presentations must be pre-loaded onto the network computer system. All speakers are encouraged to check in at the Speaker Ready Room at least four hours before your presentation time to verify their presentation uploaded correctly.

Wednesday, October 7 | 7:00 AM – 6:00 PM

Thursday, October 8 | 7:00 AM – 7:00 PM

Friday, October 9 | 7:00 AM – 6:00 PM

Saturday, October 10 | 7:00 AM – 5:00 PM

EXHIBIT HOURS:

LOCATION: HALL A

**Dedicated hall hours (does not compete with educational sessions)*

Thursday, October 8 | 4:00 PM – 9:00 PM

Coffee Break | 4:00 PM – 4:30 PM

Welcome Reception* | 7:00 PM – 9:00 PM

Friday, October 9 | 9:00 AM – 5:00 PM

Morning Break* | 10:15 AM – 10:45 AM

Lunch | 12:15 PM – 1:45 PM

Afternoon Break* | 3:45 PM – 4:15 PM

Saturday, October 10 | 9:00 AM – 1:45 PM

Morning Break* | 10:15 AM – 10:45 AM

Lunch | 12:15 PM – 1:45 PM



WI-FI INFORMATION

ASHT is happy to provide Wi-Fi in all the meeting space at the Baird Center.

WI-FI LOGIN INFORMATION

NETWORK: ASHT

PASSWORD: ASHT2026

ONSITE E-POSTER

E-Poster kiosks will be available in the Exhibit Hall located in Hall A. *There will be no physical posters.*

Designated e-Poster hours:

Thursday, October 8 | 4:00 PM – 9:00 PM

Coffee Break | 4:00 PM – 4:30 PM

Welcome Reception* | 7:00 PM – 9:00 PM

Friday, October 9 | 9:00 AM – 5:00 PM

Morning Break* | 10:15 AM – 10:45 AM

Lunch | 12:15 PM – 1:45 PM

Afternoon Break* | 3:45 PM – 4:15 PM

Saturday, October 10 | 9:00 AM – 1:45 PM

Morning Break* | 10:15 AM – 10:45 AM

Lunch | 12:15 PM – 1:45 PM

CHILDREN AND THE ASHT ANNUAL MEETING

The ASHT Annual Meeting is a professional, scientific meeting. ASHT does not permit anyone under the age of 18 to attend Pre-Conference Institutes, plenary, instructional concurrent, scientific and poster sessions, exposition and social events. For safety reasons, only registered exhibitors and poster presenters are permitted in the exposition/poster hall during set-up and take-down hours. Anyone 18+ must register and buy applicable individual tickets if not attending/registering as a student.

ELECTRONIC DEVICES

As a courtesy to other meeting attendees, please turn off or silence all electronic devices during all workshops, sessions and presentations.

EVENT PHOTO/VIDEO WAIVER

For good and valuable consideration, the receipt of which is hereby acknowledged, I grant to American Society of Hand Therapists and those acting under its permission or authority (collectively, "ASHT"), the irrevocable royalty-free right and permission to record, copy, publicly display, publicly perform, publish, modify, use and reuse my voice, image, photograph, portrait, likeness, and biographical information, including portions, composites, likenesses or distortions or alterations of same ("Likeness"), made during or in connection with my attendance of this ASHT Annual Meeting, for use in any Materials to be shown in all media now known or hereafter devised, for an unlimited term. I acknowledge that all such Materials are the property of ASHT as a work made for hire (or, if not, then I assign all of my rights in and to the Materials to ASHT), and that I will not receive any compensation as a result of any use of my Likeness in such Materials. I waive any right to inspect or approve the finished Materials, and release, waive and agree not to make any claim against ASHT in connection with any use of the Likeness, including, without limitation, any claim that such use invades any right of privacy, publicity and/or personality, defamation, libel, moral right, and any other personal and/or property right under the law of any country or jurisdiction. This agreement shall inure to the benefit of and shall be binding upon the parties' respective successors, licensees, assigns, heirs and personal representatives, and cannot be amended except by written agreement.

GENERAL INFORMATION

ASHT ON-DEMAND PLATFORM

Virtual and in-person attendees have access to the on-demand platform.

Tips and important dates are listed below.

TIPS:

- The platform will automatically keep track of the sessions you view.
- All attendees need to submit session evaluations and retrieve their CE certificate through the on-demand platform.
- **The evaluation portal will close on January 31, 2027. CE certificates should be claimed prior to the portal closing.**
- The ASHT on-demand platform will be available for viewing through September 1, 2027.

Clinical Practice & Scientific e-Posters

October 7, 2026 – September 1, 2027

Exhibitor Virtual Directory

October 7, 2026 – September 1, 2027

On-Demand Instructional Sessions

October 26, 2026 – September 1, 2027

Pediatric Specialty Day In-Person CE Evaluation and Certificate Portal

October 7, 2026 – January 31, 2027

Annual Meeting In-Person CE Evaluation and Certificate Portal

October 8, 2026 – January 31, 2027

All Virtual CE Evaluation and Certificate Portal

November 10, 2026 – January 31, 2027

SHARE THE gLOVEs

This year, ASHT has partnered with the **Guest House of Milwaukee** for our annual Share the gLOVEs initiative, which gives Annual Meeting attendees an opportunity to lend a hand and support our host community. What began as a glove donation drive has grown into an opportunity to provide meaningful support to a local organization and the individuals and families they serve.

The Guest House is a nonprofit organization dedicated to helping individuals and families experiencing homelessness move toward stable, independent lives. Through emergency shelter, housing support, mental health and substance-use counseling, case management and other services, the Guest House helps people address immediate needs while building a path toward long-term stability.

There are two easy ways to lend a hand and support the Guest House:

- **Shop the Amazon Wishlist:** Choose and purchase items the Guest House needs most to help provide essential resources to individuals and families in our host community.
- **Donate during registration:** Add a monetary donation by clicking the link in your registration confirmation email.



VIRTUAL EXHIBITOR DIRECTORY

The virtual exhibitor directory encompasses ASHT 2026 Annual Meeting exhibitors and sponsors. Check out our industry supporters and get the latest on their products and services. The exhibitor directory can be accessed in the on-demand conference platform from October 7, 2026 through September 1, 2027.

GENERAL INFORMATION

OVERVIEW

The American Society of Hand Therapists (ASHT) is proud to present its 49th Annual Meeting. The 2026 program will emphasize evidence-informed practice for rehabilitation of the hand and upper limb. Presented by distinguished faculty known regionally, nationally and internationally, the format and content will encourage the exchange of new scientific and clinical information to facilitate best practice and improve patient outcomes in hand and upper extremity therapy. The program includes topics such as:

- Novel scientific research in platform and poster sessions
- Hand and upper extremity therapy practice considerations – reimbursement, legislation, regulation and advocacy
- Clinical topics covering relevant anatomy, surgery and updated rehabilitation strategies

LEARNER OBJECTIVES

Upon the completion of the Annual Meeting, participants will be able to:

- Integrate hand and upper limb treatment plans based on evidence, research and instruction.
- Construct new strategies and clinical ideas to improve patient outcomes through interdisciplinary collaboration.
- Employ innovative treatment ideas into clinical practice for a variety of clinical conditions.
- Discuss and implement current legislative and regulatory policies into clinical practice.
- Discuss and implement leading business and operational practices into clinical practice.

TARGET AUDIENCE

ATC – Certified Athletic Trainer
COTA – Certified Occupational Therapy Assistant
OT – Occupational Therapist
PT – Physical Therapist
PTA – Physical Therapy Assistant

INSTRUCTIONAL LEVEL

Entry
Intermediate
Advanced

PREREQUISITES

None

ABSTRACTS

Selected abstracts will be presented at the Annual Meeting during the plenary scientific sessions and throughout the conference via the e-Poster kiosks. These abstracts will highlight the most outstanding papers from a variety of subspecialties relating to hand and upper extremity therapy. Selected abstracts will be published in the *Journal of Hand Therapy*, the official journal of ASHT.

EXHIBITS

Educational and informational exhibits will be available to visit in the exhibit hall during the ASHT Annual Meeting. Representatives will be on hand to answer questions and discuss their innovative products. An exhibitor directory is posted on the conference website and mobile app. Please explore the exhibits as they are an integral part of the meeting

CONFERENCE SYLLABUS

Session handouts for the ASHT Annual Meeting will be available to registered attendees for downloading and printing on the conference platform prior to the conference. All session materials are the original works of the speakers, and reproduction or use of these materials must be cited in any personal use.

***PLEASE NOTE: While speakers are encouraged to provide handouts, it is NOT a requirement. Not all sessions will have handouts based on the speakers' choice.**



GENERAL INFORMATION

CONTINUING EDUCATION INFORMATION

COURSE ACCREDITATION

This continuing education activity offers a maximum of 33.5 continuing education hours or 3.35 CEUs.

- Annual Meeting Educational Program – 21.75 CE hours
- Pre-Conference Institutes (ticketed event for in-person attendees only) – up to 4 CE hours
- AHTF Scholar Lecture (ticketed event) – 1 CE hour
- Pediatric Specialty Day (ticketed event) – 6.75 CE hours

OCCUPATIONAL THERAPISTS



The American Society of Hand Therapists is an approved provider of continuing education by

the American Occupational Therapy Association (AOTA). The assignment of AOTA CEUs does not imply endorsement of specific course content, products or clinical procedures by the AOTA.

PHYSICAL THERAPISTS

The New York State Education Department of Physical Therapy recognizes ASHT as an approved provider of PT and PTA continuing education.

Continuing education requirements are regulated by the state boards of physical therapy. Each state licensing board has its own policies and procedures related to continuing education of its licensees. State boards of physical therapy place the responsibility on licensees to follow rules and regulations related to the practice of physical therapy and maintenance of licensure in their states. Licensees should verify acceptance of continuing education courses with their state licensing board by reviewing the **relevant state practice act and/or administrative code**.

Should you use the ASHT 2026 Annual Meeting in your state physical therapy recertification process, ASHT will reimburse up to \$200** of the cost of the application. Please send ASHT a copy of your state physical therapy continuing education application to receive this reimbursement. Additionally, ASHT will supply on request, a continuing education packet containing all generally accepted required documentation. Please contact ASHT at asht@asht.org or call 856-380-6927 for more information.

***This reimbursement applies only to the first person to apply within each state. Subsequent applicants will not be charged by their state for filing.*

PLEASE NOTE: State accrediting agencies may change the number of contact hours awarded for an independent study course.



CERTIFIED HAND THERAPISTS

All content of this course is accepted as Category A credit toward recertification by the Hand Therapy Certification Commission.

MAINTENANCE OF LICENSURE AND/OR CERTIFICATION

To enter the professional development hours, you have earned for the ASHT Annual Meeting:

- Go to the HTCC website, www.htcc.org.
- On the HTCC homepage, under the Recognized Specialist in Hand Therapy banner (upper right corner), click CHTs Login Here.
- Enter your CHT ID# and your password in the login field (this may be your CHT number again or a password you created) and click Enter. Your CHT ID# will always be used in the login field. Your CHT ID# is 10 digits long.
- Once logged in to "CHTs Only," click "Enter Professional Development Hours" and then click "Category A: Formal Courses in Upper Quarter Therapy, Greater Than 3 Hours."
- Enter your Professional Development hours onto the form and then scroll to bottom of page and click "Submit" to capture your information
- Email or fax the certificate to HTCC at 866-329-1476 toll free, (international attendees 916-922-0210) or email your certificate to info@htcc.org. If you have any questions, please contact HTCC at info@htcc.org.

Credits will be awarded based on the date printed on the CE Certificate. For instance, if an individual's renewal cycle is 01/01/2021 to 11/15/2026 and the CE transcript and certificate is completed on 12/31/2026, all of the CE hours will be applied to that renewal cycle. Anything completed in 2027 will be applicable for that year.



ATHLETIC TRAINERS

The American Society of Hand Therapists is recognized by the Board of Certification, Inc. to offer continuing education for Certified Athletic Trainers.

GENERAL INFORMATION

CONTINUING EDUCATION INFORMATION

OBTAINING CEUS

CE certificates should be obtained/printed by January 31, 2027. On October 8, attendees will receive directions to create their CE transcript. Attendees will also be able to provide feedback to speakers of the sessions they attended. Questions can be directed to meetings@asht.org.

Participants must:

1. Have paid the registration fee
2. Attend their chosen sessions in their entirety
3. Complete an online evaluation form after the session. CE certificates will be available immediately upon submission of evaluation form. Attendees should only claim credit commensurate with the extent of their participation in the activity

ONLINE EVALUATION & CE CERTIFICATE SITE

Attendees can access the CE portal directly through the on-demand platform to claim credit for sessions participated in, evaluate sessions and submit overall conference feedback. Once you evaluate all sessions you wish to claim credit for, you can print a certificate.

- In-person attendees can begin filling out session evaluations on **Thursday, October 8**.
- You will **receive only one certificate** for the Annual Meeting, so please do not proceed with finalizing/printing your certificate until you have completed all of your session evaluations.
- **Pediatric Specialty Day attendees** will fill out separate evaluations and receive a separate certificate for the credit hours earned during Pediatric Specialty Day.
- In-person attendees should keep a **record of the sessions attended**.
- For **virtual attendees**, the conference platform will automatically keep track of the sessions you watched.
- If you wish to **collect a certificate in 2027**, you will need to wait until January 1, 2027 to evaluate sessions attended.

Note: Credit cannot be doubly awarded for sessions taking place in the same instructional concurrent session block; this also applies to virtual attendees. Categories not eligible are Posters, Non-medical, Exhibitor and Exhibits.

DISCLOSURE STATEMENT

All contributors who can affect American Society of Hand Therapists continuing education content (including leadership, program committee, faculty members, moderators and staff), in their respective roles, are required to disclose all relevant financial relationships with any commercial interest that could be viewed as a real or perceived conflict of interest. This policy is in effect to maintain adherence with the conflict of interest guidelines set by American Occupational Therapy Association Approved Provider Program, the Board of Certification, Inc. for Athletic Trainers and the Federation of State Boards of Physical Therapy. Attendees will be made aware of any affiliation or relevant financial interest that may affect the development, management, presentation or evaluation of the CE activity and will be printed in the final program and projected in slide format before each presentation. Individuals who refuse to disclose relevant financial relationships will be disqualified from being a contributor, and cannot have control of, or responsibility for, the development, management, presentation or evaluation of the CE activity.

TAX INFORMATION:

As a 501(c)(3) organization, the national dues or education registration fees are not deductible as a charitable contribution for federal tax purposes; however, they may be deductible as ordinary business expenses. Please consult your financial advisor.

ACCESSIBILITY SERVICES:

The American Society of Hand Therapists wishes to take steps to ensure that no individual with accessibility needs is excluded, denied services, segregated or otherwise treated differently than other individuals because of the absence of auxiliary aids or services. If you need any auxiliary aids or services identified in the Americans with Disabilities Act, or any assistance in registering for this conference, please contact ASHT Meetings Staff at meetings@asht.org.

As is our policy, it is the responsibility of the attendee to make any accessibility needs known prior to attendance at the conference. Advance notification provides ASHT adequate time to ensure that it can arrange for requested services.

ADDITIONAL EVENTS

(Receptions, Committee/Division Meetings, Ticketed Events)

DATE	TITLE	TIME	LOCATION
Thursday, October 8	Welcome Reception	7:00 PM – 9:00 PM	Hall A
Friday, October 9	Let's Be New Together: First-Time Attendee, New Member & Student Networking Breakfast	6:45 AM – 7:45 AM	S102
Friday, October 9	Axogen Breakfast Symposium: From Surgery to Function: Therapy's Role in Recovery Success	6:45 AM – 7:45 AM	S203
Friday, October 9	Hand Therapy Certification Commission: Preparing for the CHT Exam	12:30 PM – 1:30 PM	S203
Friday, October 9	Leadership Poster Presentation — Empowered to Lead: Shaping the Future of Hand Therapy	12:30 PM – 1:30 PM	Grand Ballroom A
Friday, October 9	Outreach Division Meeting	12:30 PM – 1:30 PM	S202 A
Friday, October 9	Practice Division Meeting	12:30 PM – 1:30 PM	S202 B
Friday, October 9	Diversity, Equity & Inclusion Committee Meeting	12:30 PM – 1:30 PM	S202 D
Friday, October 9	AOTF Research Community Lunch	12:30 PM – 1:30 PM	S201
Friday, October 9	Beyond the Traditional Thumb Spica: Functional Stabilization Strategies That Patients Will Wear – Hands-on Demo by Essity	12:30 PM – 1:00 PM	S202 C
Friday, October 9	Bridging the Gap Between Clinic and Home: Hands-On with RxCart™ Hands-on Demo by North Coast Medical	1:00 PM – 1:30 PM	Grand Ballroom B
Friday, October 9	ASHT Oktoberfest – Conference Party (ticketed event)	7:00 PM – 10:30 PM	Crystal Ballroom
Saturday, October 10	International Committee Lunch	12:30 PM – 1:30 PM	S203
Saturday, October 10	Education Division Meeting	12:30 PM – 1:30 PM	S202 B
Saturday, October 10	Leadership Development Committee Meeting	12:30 PM – 1:30 PM	S202 D
Saturday, October 10	Research Division Meeting	12:30 PM – 1:30 PM	S202 A
Saturday, October 10	Student Meet-Up	12:30 PM – 1:30 PM	S102
Saturday, October 10	Gavel Club (invitation-only)	12:30 PM – 1:30 PM	S202 E
Saturday, October 10	Rolyan in Practice: Clinical Pearls for Successful Orthotic Fabrication – Hands-on Demo presented by Performance Health	12:30 PM – 1:00 PM	S202 C
Saturday, October 10	Partial Finger & Partial Hand Loss Prosthetic Interventions – Hands-on Demo presented by Össur	1:00 PM – 1:30 PM	Grand Ballroom B
Saturday, October 10	AHTF Fundraiser - Happy Hour with a Scholar (ticketed event)	6:30 PM – 8:00 PM	S203
Saturday, October 10	ASHT Night Out (on your own)	7:45 PM	Off-Site



WEDNESDAY, OCTOBER 7

7:45 AM – 8:00 AM

Welcome

GRAND BALLROOM C/D

Karen Ayala, MS, OTR, CHT, 2026 Pediatric Specialty Day Co-Chair
Jemerie Hopkins, MS, OTR, CHT, 2026 Pediatric Specialty Day Co-Chair

8:00 AM – 9:00 AM

General Topics

GRAND BALLROOM C/D

Are We Bridging the Gap for Long-Term Complications in Teenagers and Young Adults with Brachial Plexus Birth Injury?

Pauline W. Ng, MOT, OTR/L, CHT

Current therapy treatments successfully address the needs of the infant and school-aged child with brachial plexus birth injury. Once they have met their developmental milestones, age-appropriate self-care skills, school readiness skills and independence in home exercise programs, they are often reduced to a consultation basis or discharged from our programs. This session will increase awareness and identify long-term complications in teenagers and young adults with brachial plexus birth injury. In addition to the obvious physical appearances of arm/hand size and length differences, the posturing caused by muscle imbalances of shoulder internal rotation/adduction, elbow flexion, forearm and possibly hand contractures, the less obvious anatomical changes of glenohumeral joint dysplasia and elbow incongruity will be explored. The areas of pain, emotional, mental, social, academic and work domains will be addressed. Discussion of possible barriers to bridging the gap may include the time constraints of the changing healthcare climate for more productivity and billable hours, high caseloads, shortage of staff, lack of functional goals and limited skill sets for manual therapy and modalities. Families may have limited resources for transportation and insurance coverage to continue care. We will identify possible strategies to bridge the gap through early ongoing education to increase patient and caregiver awareness of potential long-term complications, use of a multidisciplinary team, incorporating an Education Day, Mental Health Group and a Transitional Aging-out process. Participants will have an opportunity to share their ideas and experiences on how to bridge the gap to meet the needs of teenagers and young adults with brachial plexus birth palsy.

Bridging the Gap from Pediatric to Adult Upper Extremity Care

Karen Ayala, MS, OTR, CHT

Hilton Gottschalk, MD

What happens when a pediatric patient with a congenital hand difference turns 18? Who is the best provider for a 30-year-old with a history of cerebral palsy affecting upper extremity function? What is considered best practice for a young adult with a complex medical history including JIA or EDS? This presentation will focus on bridging the gap between pediatric and adult upper extremity care. We will cover various conditions that typically start at birth or in childhood but continue to impact patients' lives and require follow up as the patients age. Case studies will be used to illustrate examples of how the pediatric hand surgeon and hand therapist work together with the patient and their families to help make sure their needs are met. This may involve surgical procedures, orthosis fabrication, ADL training, school and jobsite accommodation and referral to adult upper extremity providers with the knowledge and skill set necessary to serve these individuals.



WEDNESDAY, OCTOBER 7 (CONTINUED)

What Parents Want - Optimizing Caregiver Education for Brachial Plexus Birth Injury

Jennifer Wingrat, ScD, OTR/L, FAOTA

This session reports on a survey of caregivers of infants with brachial plexus birth injury (BPBI) regarding their experiences, perceptions and preferences for the education and training they received for performing home-based therapy recommendations. The session will provide a brief background about BPBI and the importance of home-based therapy programs for this population, describe the methods for surveying the sample of caregivers, and present the results and a discussion of the implications of the findings. In addition to a PowerPoint presentation, Kahoot (or similar platform) will be used to survey attendees about the home-based therapy recommendations they make and the methods/strategies they use to teach and support caregivers in carrying out the recommendations.

9:00 AM – 10:00 AM

Congenital Topics

GRAND BALLROOM C/D

A Collaborative Approach to Bridging Care for Children with Upper Limb Prosthetics

Jenny M. Dorich, PhD, MBA, OTR/L, CHT

The session will explore how a prosthetist and a pediatric Certified Hand Therapist collaborate across the full continuum of care for children who use upper limb prosthetics. Presenters will outline each discipline's role in evaluating children for upper limb prosthetic options and describe how they partner with the child and family to identify devices that align with the family's goals and priorities.

The session will also highlight effective, collaborative documentation strategies that support third-party coverage for prosthetic devices. In addition, presenters will demonstrate how ongoing interdisciplinary coordination supports successful prosthetic training, reassessment and long-term care as children grow and their needs evolve.

From Nonoperative Care to Postoperative Management:

Treating Pediatric Congenital Hand Anomalies

Jessica Grogan, MOT, OTR, CHT, CLT

Congenital pediatric diagnoses such as syndactyly, thumb hypoplasia, duplicated thumb, camptodactyly, radial longitudinal deficiency and trigger thumb/finger. This session focuses on prefabricated/custom orthotics and protocols for both conservative and post-operative treatment for each diagnosis.

It Takes Three to Tango - The Passive Range of Motion Dance for Congenital Upper Limb Differences

Peggy Faussett, MOTR/L, CHT

Rehabilitation for children with congenital upper limb differences requires a multidisciplinary approach, with occupational therapy and physical therapy interventions aimed at improving range of motion, preventing contractures, enhancing strength, managing pain and promoting functional independence in self-care and play. Gaining early passive range of motion (PROM) in the upper extremities is often critical to be eligible for potential surgical interventions as the child matures. To achieve these goals, therapeutic interventions often combine a "therapeutic dance" between three primary interventions: manual stretching, orthoses and serial casting. The efficacy of these methods is determined through shared decision making and is dependent on patient tolerance, family buy-in, and the integration of home programs into daily life. The application of these techniques

WEDNESDAY, OCTOBER 7 (CONTINUED)

will be demonstrated through three distinct case studies including arthrogryposis, radial longitudinal deficiency and camptodactyly. By synthesizing clinical techniques with family-centered care, therapists can significantly improve PROM and functional outcomes, ultimately preparing the child for future surgical and functional milestones.

Words Matter: Healthcare Terminology Influences How Mental Health Needs of Children with Congenital Hand Differences are Expressed

Emily S. Ho, PhD, OT Reg (Ont)

Care for children with congenital hand differences involves a multidisciplinary approach to assessment and treatment of limb dysmorphology to optimize function. However, these children may experience mental health issues that influence participation and health-related quality of life. Yet, research shows that routine mental health screening is rare among pediatric upper limb specialists. As members of the multidisciplinary team, pediatric hand therapists play a critical role in identifying these concerns. However, interviews with families have shown that youth and parents may not expect to receive mental health or psychosocial support in these specialized hand and upper limb clinics because of the way health services are currently structured. Systems-level factors play a role in how mental health concerns are expressed, identified and managed. This presentation will provide an overview of practice approaches used to screen for mental health concerns and psychosocial interventions provided for children with congenital hand differences. Evidence from the literature alongside findings from multi-methods research (surveys, qualitative interviews) will examine how healthcare terminology influences how mental health needs are shared. The importance of a collaborative approach with caregivers and children to elucidate, identify and address mental health needs will be discussed.

10:00 AM – 10:30 AM

Break

10:30 AM – 11:30 AM

Neuro Topics

GRAND BALLROOM C/D

Assessing for Asymmetry in Infants at Risk

Susan V. Duff, EdD, MPT, OT/L, CHT

During the first year of life, the unimanual and bimanual skills of infants who are developing typically improve significantly. Yet infants who sustain a peripheral or central neural injury during the perinatal period often present with asymmetrical limb motion, thus are at risk for upper limb dysfunction. Conditions which may result in limb asymmetry include brachial plexus injury and perinatal stroke. Detection of asymmetrical upper limb motion could lead to effective early intervention strategies thus informing clinical practice for these conditions. These methods of motion assessment could also be used to monitor change following microsurgery and other forms of therapeutic intervention. This session will review the following: a) clinical conditions at risk; and b) current methods available to examine differences in limb motion including use of clinical assessments, inertial sensors, surface electromyography and 3D motion capture. The advantages of all methods will be reviewed. Options for feasible clinical use will be discussed with the audience.



WEDNESDAY, OCTOBER 7 (CONTINUED)

Teaching the Why: Pain Neuroscience Education for Pediatric CRPS

Hannah Gift, OTR/L, CHT, COMT, CEAS

Complex regional pain syndrome (CRPS) is a complex pain condition in which successful treatment depends heavily on patient engagement and understanding. While this can be challenging in adults, the barriers are amplified in pediatric populations.

Pain neuroscience education (PNE) is a critical component of rehabilitation for children with CRPS. When delivered effectively, PNE helps young patients and their families understand why symptoms occur, reduces fear surrounding movement and supports active participation in therapy.

This session will use a case-based approach to demonstrate how PNE can be adapted for pediatric patients with CRPS. Attendees will learn developmentally appropriate language, metaphors and visual strategies to explain key concepts including central sensitization, nervous system dysregulation and the impact of stress and fear on symptoms.

Participants will leave with practical scripts and immediately applicable tools to integrate pain neuroscience education seamlessly into treatment sessions, reinforcing concepts throughout the rehabilitation process and promoting functional progress.

Neuromodulation — The Reflex Circuit as the Unit of Positive Change

Andrea Gentry, MOT, CHT

Hand therapists have long known academically and experientially that to effectively treat the hand and upper extremity one must include the brain. The drive to move, the program for movement, its intentionality, and intricate balance of dexterous movement can only be exquisitely coordinated by the brain, and, of course, the feedback of the body.

This presentation, generously illustrated with videos, will encompass foundational principles of neurophysiology to support the case study in the keynote address. Key concepts include the reflex circuit, neuromodulation, and maturation of the circuit as foundation to coordinated movement. This concept of innate patterned movements, or reflexes, as building blocks of movement was first explored by the Nobel Prize winning British physiologist, Charles Sherrington in the late 19th century, whose research established many concepts of modern neuroscience, namely “the reflex is the simplest unit of nervous integration.” He coined the term synapse and elucidated Sherrington’s Law, the concept of reciprocal innervation. Additionally, he is the author of the term “reflex integration” and demonstrated that reflexes are not isolated automatic events, but are coordinated by the central nervous system and lead to purposeful behavior.

Fast forward to modern day, and the research and practice of Svetlana Masgutova, PhD, has extrapolated this concept to effect real change in the human body by paving, or re-patterning, the reflex circuit. Familiar reflex patterns, such as asymmetric tonic neck reflex, and Robinson’s Hands Grasp seen in infants are revealed in a different light than certified hand therapists, both occupational and physical therapists, have been previously trained. The full circle is revealed to the hand therapist when this movement is observed in the paralyzed limb of an infant when the brain is tapped for its genetically encoded knowledge of the pattern.

11:30 AM – 12:30 PM

Lunch & Exhibits

S100 FOYER



WEDNESDAY, OCTOBER 7 (CONTINUED)

12:30 PM – 1:15 PM

Pediatric Specialty Day – Keynote Address

GRAND BALLROOM C/D

Neuromodulation – Genetic Reflex Circuits as Units of the Brain for Positive Change.

Isabelle Renard-Fontaine, MA

Hand therapists have long known, both academically and experientially, that to effectively treat the hand and upper extremity, one must include the brain. The drive to move, the program for movement, its intentionality, and the intricate balance of dexterous movement can only be exquisitely coordinated by the brain and, of course, by the body's feedback.

This lecture, a PowerPoint-style presentation, generously illustrated with videos, will encompass foundational principles of neurophysiology to support the case study in the keynote address. Key concepts include the reflex circuit, neuromodulation and maturation of the circuit as a foundation for coordinated movement. This concept of innate patterned movements, or reflexes, as building blocks of movement was first explored by the Nobel Prize-winning British physiologist, Charles Sherrington, in the late 19th century, whose research established many concepts of modern neuroscience, namely "the reflex is the simplest unit of nervous integration." He coined the term synapse and elucidated Sherrington's Law, the concept of reciprocal innervation. Additionally, he coined the term "reflex integration" and demonstrated that reflexes are not isolated, automatic events but are coordinated by the central nervous system and lead to purposeful behavior. Fast forward to modern day, and the research and practice of Dr. Svetlana Masgutova, PhD, has extrapolated this concept to effect real change in the human body by paving, or re-patterning, the reflex circuit.

Familiar reflex patterns, such as the asymmetric tonic neck reflex and Robinson Hands Grasp Reflex, seen in infants are revealed in a different light than CHTs, both OTs and PTs, have been previously trained. The full circle is revealed to the hand therapist when this movement is observed in the paralyzed limb of an infant, when the brain is tapped for its genetically encoded knowledge of the pattern.

1:15 PM – 2:15 PM

Instructional Concurrent Session 1

GRAND BALLROOM A

Unconstraining Constraint-induced Movement Therapy: Let's Collaborate!

Carissa Shotwell, OT, MEd, DHS

Ashley Pfeffenberger, MOT, OTR/L

Amanda Holland, OTR/L, CLT

This interactive session will provide a close look at how therapists recognized a gap in programming and collaborated to build a constraint induced movement therapy (CIMT) and bi-manual integration training (BIT) group in a busy outpatient environment. The presenters will also share evidence-based protocols for individual CIMT/BIT intervention and how to use outcome measures and goal setting to determine the optimal treatment plan for the child/family. The presenters will share the evolution of these programs, highlighting how outcome measures and family feedback shaped improvements and guided best practices. Data collected from their programs will be reviewed to illustrate trends, successes and areas for growth.



WEDNESDAY, OCTOBER 7 (CONTINUED)

The session will conclude with an open forum, led by the presenters, designed to foster collaborative discussion around practical questions, common barriers and success stories—creating an opportunity for peer learning and networking. Attendees are encouraged to contribute by sharing their own strategies, challenges and lessons learned in implementing CIMT programs and interventions.

S101

Advancing Therapeutic Care for Children with Arthrogryposis Multiplex Congenita (AMC)

Michelle Cohen, MOT, OTR/L, CHT

Michelle L. Burke, OTR/L

Arthrogryposis multiplex congenita (AMC) affects approximately one in 3,000 live births. It is a diagnosis that presents itself in a variety of forms and can be intimidating to both novice and the most experienced hand therapists. Due to the complexity of the diagnosis, it is imperative that this population is cared for by a multidisciplinary team. This presentation will include a brief overview of the diagnosis and types of arthrogryposis, delve into the non-surgical and surgical considerations for children with arthrogryposis, review current research, activities of daily living (ADL) modifications and training approaches, and discuss the benefits of the interdisciplinary care of these patients. Surgical intervention of the upper extremity will be reviewed along with the post-operative protocols to provide the best care for these patients. Presenters will share non-operative splinting, serial casting and other conservative treatment techniques that are most effective with this population.

Attendees will leave this presentation with an increased understanding and confidence to evaluate and treat children with arthrogryposis. In addition, a list of resources will be provided with AMC resources for therapists and families.

S103

Achieving the Best Functional Outcomes When Skin Flaps are Utilized Following Traumatic Upper Extremity Injuries in Children

Andrew T. Bracken, MOT, OTR/L, CHT

Alta Fried, MS, OTR/L, CHT

Shaun Mendenhall, MD

This interactive instructional session will discuss the surgical differences between skin graft and skin flap surgery following traumatic upper extremity injuries in children. We will review complications that commonly arise following skin graft and skin flap surgery in the pediatric population and consider the role hand therapists play in preventing and addressing post-surgical complications. We hope to consider the physical, psychosocial and emotional needs of children following skin graft and skin flap surgery. We will shift our focus to explore commonly utilized skin flap surgeries to address complicated traumatic pediatric upper extremity injuries and consider practice guidelines hand therapists can utilize to achieve the best possible functional outcomes. Several case studies involving pediatric patients who underwent complicated skin flap surgery will be presented including use of a free gracilis flap, an anterolateral thigh flap for the elbow, an anterolateral thigh flap for the wrist and an extended radial forearm free flap. Participants in this session can expect to gain valuable insight into the differences between skin grafts and skin flaps, how to recognize and manage complications, and hand therapy principles that achieve the best functional outcomes for our pediatric patients.



WEDNESDAY, OCTOBER 7 (CONTINUED)

2:15 PM – 2:30 PM

Transition Break

2:30 PM – 3:30 PM

Instructional Concurrent Session 2

GRAND BALLROOM A

Clinical Treatment of Pediatric Patients with Upper Extremity Burns

Christina Mooneyham, OTR, MOT

Yesenia Jaramillo, MOT, OTR, CLT

This will be an interactive instructional session where participants will learn how to approach and design treatment plans for pediatric patients with burn wounds to the upper extremities. Various cases will be explored to provide insight on anticontracture positioning, orthoses, scar management and therapeutic activities used in this specialty population. This session will include an interactive discussion with both new and seasoned therapists who want to expand their skill set and be prepared when they come across a small or large pediatric burn.

S101

The Last Mile: Return to Play Testing and Advanced Sports-Based Rehabilitation for the Upper Extremity Specialists to Safely Return Youth Athletes to Play

Michael Mueller, OTR, CHT

Pediatric upper extremity specialists commonly treat youth athletes who have suffered an injury and are well equipped to treat the early rehabilitation of such injuries. Where they become more challenged is when it is time to develop return to sport testing and the development of advanced sports-based rehabilitation. It starts with a criteria-based return to play process for injured youth athletes that can be communicated to the patient, parents and coaches. The clinician needs to understand open-chain, closed-chain, strength, force development, stability endurance and psychological readiness assessments for the upper extremity specialist to develop treatment plans for the injured youth athlete. Then, they must develop sports-based advanced rehabilitation programs to gradually expose the patient to the stress of the sport.

Sports participation continues to rise in the youth population resulting in increases in acute and overuse upper extremity injuries leading to time away from play and loss of sport's skill development. The upper extremity therapist requires additional specialized skills to provide optimal care for these patients. This session will discuss the return to play process, return to play testing and advanced sports-based rehabilitation of upper extremity injuries in youth athletes. Case examples from a variety of sports will be utilized to demonstrate return to sport testing and programming to maximize outcomes and safe participation in youth sports.



WEDNESDAY, OCTOBER 7 (CONTINUED)

S103

A Decision Framework for Orthotic Use in BPBI: Matching the Right Orthosis to the Right Patient at the Right Time

Krystal Vermillion, CScD, MOT, OTR/L

James Northcutt, OTR, MOT, CHT

This session presents a structured, timeline-based decision tree to guide orthotic selection for children with BPBI at risk for glenohumeral dysplasia. Content is organized around three core domains: (1) biomechanics, pathology and anatomy of dysplasia progression, (2) clinical variables influencing orthotic decision-making and (3) comparative application of orthotic strategies within a unified framework.

The session will begin with a review of the muscular imbalance patterns that contribute to altered joint loading and progressive deformity. Imaging correlation, clinical observations and developmental considerations will be integrated to establish objective decision variables. Presenters will then introduce a visual clinical decision tree organized by referral timeline, clinical and radiographic risk factors, in-orthosis observations, developmental stage, passive range, muscle activation, spontaneous recovery patterns, caregiver ability and functional goals.

Orthotic strategies, including dynamic strapping, external rotation positioning approaches and static structured orthoses, will be examined within the decision tree rather than as isolated interventions. Indications, advantages, limitations and integration into broader management (including surgical planning when applicable) will be discussed.

Active learning will be incorporated through case-based application. Participants will be presented with progressive pediatric cases and prompted to apply the decision tree in real time using guided questioning and audience response methods. Imaging findings and functional presentation will be analyzed collaboratively to reinforce clinical reasoning and meet learning objectives related to analysis, application and differentiation.

The session concludes with implementation considerations, interdisciplinary collaboration strategies and identification of current evidence gaps to support continued professional growth and resilience in practice.

3:30 PM – 3:45 PM

Transition Break

3:45 PM – 4:45 PM

Tips and Tricks

GRAND BALLROOM C/D

The Importance of Health Literacy Across Pre- and Post-Operative Care in Pediatric Tendon Repair Rehabilitation: Integrating Patient and Caregiver Education in a Multidisciplinary Hand Clinic

Kendra Ransom, OTR/I, CHT, MSHI

Pediatric tendon repairs demand precise splinting, strict precautions and intensive therapy – yet many families leave visits unsure what to do next. This session shows how a multidisciplinary hand team partnered with a health literacy department to co-create clear, consistent pre- and post-operative education for children with zone II-V flexor tendon repairs and their caregivers. You will see how standardized, plain-language materials, visual supports and the teach-back method were built into real-world clinic and therapy



WEDNESDAY, OCTOBER 7 (CONTINUED)

workflows, and how a six-patient pilot suggests effects on adherence, complications and motion outcomes. This presentation provides examples of how to support families understand and carry out postoperative protocols.

Management of the UEs in Progressed Duchenne's Muscular Dystrophy: To Serial Cast or Not to Serial Cast? An Exploratory Idea

Devin Godber, OTD, OTR/L, CHT

Discussion to explore nontraditional techniques for contracture management within degenerative muscle conditions, such as muscular dystrophy. Interventions to be discussed include serial casting, splinting and passive stretching with the goal of improving functional positioning and hygiene support for caregivers.

Pediatric Flexor Tendon Rehabilitation: Making Early Controlled Active Motion Possible for Little Hands

Tymar Fields, MOTR/L, CHT

Bobbi A. Dynice, MOTR/L

Best practice for flexor tendon rehabilitation for older children and adults is well established, but a gap exists between this and the interventions used for young children. This session explores the feasibility of an innovative approach to treating flexor tendon repairs for young children based on the principles of early mobilization. The use of early mobilization flexor tendon rehabilitation protocols is the gold-standard in adult hand therapy. Currently, there is low level evidence in support of flexor tendon repair rehabilitation for pediatric patients. The evidence suggests that children have limited complications and good functional outcomes; however, these results include various protocols and demographics. In clinical practice, immobilization protocols used with the youngest children are in question because of the sequelae of clinical challenges observed, including, tendon adhesions and joint stiffness which limit the movement needed for developmental grasp patterns. The proposed protocol allows for controlled active and passive motion beginning within one week of surgery and follows a well understood progression used in adult hand therapy, modified to meet the needs of young children. Using a case study format, speakers share a novel orthosis design that provides both safe immobilization and controlled active motion. Clinical pearls and pitfalls will be reflected upon to promote clinical reasoning.

4:45 PM – 5:00 PM

Closing Remarks

GRAND BALLROOM C/D

Karen Ayala, MS, OTR, CHT, 2026 Pediatric Specialty Day Co-Chair
Jemerie Hopkins, MS, OTR, CHT, 2026 Pediatric Specialty Day Co-Chair

5:00 PM – 6:00 PM

Reception

S100 FOYER

Network with fellow therapists and exhibitors. Drinks and small bites will be served. Reception is included with Pediatric Specialty Day registration.

THURSDAY, OCTOBER 8

7:30 AM – 11:30 AM

4-Hour Pre-Conference Institutes (ticketed events)

4 CE Hours

S102

The Healing Bridge: Connecting Tissue Mechanics with Effective Orthotic Design

Cathy Borst, OTR/L, CHT

Elena T. Bolin, EdD, MS, OTR, CHT

This in-person, lab-intensive pre-conference course is designed for clinicians of all skill levels, from beginners to experienced practitioners seeking a refresher or advancement of their skills. Through a blend of focused lecture and guided laboratory practice, participants will develop and refine their orthotic fabrication techniques. Emphasis will be placed on the design and fabrication of static and static progressive orthoses to effectively address tissue restrictions and support functional outcomes. Participants will apply evidence-informed treatment principles for post-surgical and non-surgical conditions commonly encountered in both outpatient and inpatient settings.

S203

An Introduction to Casting Motion to Mobilize Stiffness (CMMS): What's CMMS All About?

Johanna Jacobson-Petrov, MHS, BSc.OT, CHT

Karol Spraggs-Young, OTD, OTR/L, CHT

Kantessa Stewart, OTR/L, CHT

Katie Pisano, OTR/L, CHT

CMMS is a treatment technique that was first introduced over 20 years ago as an intervention for the stiff hand. The CMMS treatment technique is now gaining popularity as an alternative to treating the stiff hand. This CMMS pre-conference presentation discusses the research and brain science that supports the role of the central nervous system in changing the maladaptive movement patterns that develop during hand immobilization and/or trauma. There will also be a casting lab that introduces participants to the principles of plaster casting to promote active redirection of motion in the stiff hand.

7:30 AM – 9:30 AM

2-Hour Pre-Conference Institutes (ticketed event)

2 CE Hours

GRAND BALLROOM C/D

Hands-On Anatomy: Cadaveric Dissection of the Upper Arm with Nerve Focus - From Structure to Surgical Reality

Jessica Hanley, MD

This two-hour cadaveric dissection lab offers an immersive exploration of upper arm neuroanatomy with direct clinical relevance to hand therapy practice and nerve pathways. Led by Dr. Hanley, participants will move beyond textbook illustrations to observe and interact with the actual structures they treat daily in their true anatomical relationships. The session bridges surgical and therapeutic perspectives by demonstrating operative procedures related to nerve pathology allowing therapists to deepen their understanding of what occurs in the operating room and how post-surgical anatomy informs rehabilitation decision-making. Whether you are a seasoned clinician seeking to sharpen your anatomical knowledge or an emerging hand therapist building your foundational understanding, this lab provides a rare and invaluable learning experience that cannot be replicated in the clinic or classroom.

THURSDAY, OCTOBER 8 (CONTINUED)

7:30 AM – 9:30 AM

2-Hour Pre-Conference Institutes (ticketed event)

2 CE Hours

GRAND BALLROOM A

Threading the Needle: Evidence-Based Strategies for Integration of Dry Needling in Hand Therapy

Nathan Short, PhD, OTR/L, CHT, FAOTA

Donna Walls, OTD, OTR, CHT

Dry needling is becoming a widely used intervention among rehabilitation practitioners to address underlying functional limitations among different patient populations. A recent systematic review found strong evidence to support the use of dry needling to decrease spasticity and improve range of motion, common underlying limitations encountered by hand therapists (Bynum et al., 2021). Additionally, dry needling has demonstrated effectiveness in treating common musculoskeletal conditions like lateral epicondylitis (tennis elbow) and intrinsic tightness of the hand (Uygur, Aktaay, & Yilmazoglu, 2021; Short, Linder, & Stump, 2024; Short, Walls, Rutland, 2025). Although dry needling appears promising as a supportive technique to promote functional gains, it must be critically analyzed and thoughtfully integrated into the hand therapy specialty. This course will present dry needling techniques for the upper extremity and hand with an emphasis on safety, underlying anatomy, and integration within a broader, function-based plan of care. Current evidence for dry needling will be presented along with specific case studies and demonstrations followed by a discussion of state practice act guidelines, coding/billing, and the certification process.

9:45 AM – 11:45 AM

2-Hour Pre-Conference Institutes (ticketed event)

2 CE Hours

GRAND BALLROOM C/D

Hands-On Anatomy: Cadaveric Dissection of the Hand and Wrist — From Structure to Surgical Reality

Greg Watchmaker, MD

This two-hour cadaveric dissection lab offers an immersive, hands-on exploration of hand and wrist anatomy with direct clinical relevance to hand therapy practice. Led by Dr. Watchmaker, participants will move beyond textbook illustrations to observe and interact with the actual structures they treat daily — tendons, nerves, pulleys, ligaments, and joints — in their true anatomical relationships. The session bridges surgical and therapeutic perspectives by demonstrating common operative procedures, including tendon repair, allowing therapists to deepen their understanding of what occurs in the operating room and how post-surgical anatomy informs rehabilitation decision-making. Whether you are a seasoned clinician seeking to sharpen your anatomical knowledge or an emerging hand therapist building your foundational understanding, this lab provides a rare and invaluable learning experience that cannot be replicated in the clinic or classroom.

THURSDAY, OCTOBER 8 (CONTINUED)

9:45 AM – 11:45 AM

2-Hour Pre-Conference Institutes (ticketed event)

2 CE Hours

GRAND BALLROOM B

Practical Tips for Hand Therapists to Start Innovating

Nicole Hoover, MS, OTR, CHT

This session will equip hand therapists with practical, accessible strategies to begin innovating within their daily clinical practice – regardless of resources, setting or prior experience. Using real-world examples from hand therapy and rehabilitation, the presentation will demystify the innovation process by breaking it into concrete, repeatable steps rooted in quality-of-care principles. Attendees will learn how to identify meaningful clinical pain points, apply simple innovation and quality-improvement frameworks (such as Plan-Do-Study-Act and basic design thinking), and use low-cost tools – including AI, stakeholder interviews and rapid prototyping – to develop solutions that enhance patient care, workflow efficiency and interdisciplinary communication. We will include interactive activities that include problem-solving, rapid prototyping and an opportunity to pitch their idea and gain valuable feedback to increase confidence.

11:30 AM – 12:30 PM

Lunch on your own

12:30 PM – 1:30 PM

Instructional Concurrent Session 1

1 CE Hour

GRAND BALLROOM B

Beyond the Clinic: Everyday Advocacy to Empower Hand Care Access

Fatima Adamu, MS, OTR/L, CHT

Hand therapists routinely see patients for whom care was delayed due to incomplete guidance or a lack of awareness that hand therapy exists until late in the recovery window. This session reframes “advocacy” as a set of small, repeatable daily actions that collectively expand public awareness of hand therapy, improve care-seeking decisions and strengthen referral pathways thereby bridging gaps through collaboration and an amplified professional voice.

Participants will learn a practical framework for “Beyond the Clinic” outreach that is feasible in busy clinical roles: (1) a plain-language explanation of what hand therapy is and when to seek it, (2) a simple hand-injury decision pathway that supports timely, appropriate care navigation, (3) community touchpoints that create visibility (libraries, schools, performing-arts groups, makerspaces, employer wellness) and (4) low-burden digital education strategies that improve the quality of patient-facing information and reduce common misconceptions. Evidence-informed communication approaches grounded in health literacy and patient education research will be integrated.

Active learning will focus on building an individualized, values-based micro-advocacy plan that can be implemented without requiring new budget, staff or institutional marketing support.

THURSDAY, OCTOBER 8 (CONTINUED)

S201

Complex Elbow Injuries in Pediatrics: Surgery and Therapy

Karen Ayala, MS, OTR, CHT

Hilton Gottschalk, MD

In this session, a variety of complex pediatric elbow injuries will be discussed from the perspectives of the pediatric hand surgeon and therapist. Injuries, including fractures (radial neck, olecranon, epicondyle, supracondylar humerus), dislocations and Monteggia fracture dislocations will be highlighted with a combination of lecture and case study examples. We will review the anatomy of the elbow joint and discuss why it is often considered an unforgiving joint that "can't take a joke." Patterns of injury at the elbow will be explained using X-ray and/or CT scan examples to illustrate better the anatomical structures and their impact on range of motion and functional outcome. Our hand surgeon will review the surgical intervention. We will explain our rationale for duration and type of post op immobilization. Our hand therapist will share the therapeutic treatment plan, including components of the initial evaluation, orthosis fabrication if needed, and progression of therapy from range of motion to strengthening to return to activities. Throughout the talk, we will discuss potential complications, the importance of communication with the patient, family and medical team, and what determines a successful outcome with this patient population. Our goal is to help bridge the gap between an often-difficult diagnosis and a positive result for all involved.

S103

Scar, Stiffness, Strength: A Therapeutic Progression of Upper Extremity Burn Patients in the Outpatient Setting

Jose X. Lucio, MOT, OTR/L, CHT

Lily DuRose, OTRL, CHT

Speakers will provide foundational knowledge for learning depth of burn injury, learn about different types of skin grafts, evaluate and assess interventions for long-term burn scar management of the upper extremity (shoulder to hand), which includes scar massage, use of compression garments, splinting/casting, positioning, use of inserts/silicone and understanding the cutaneous functional units that affect elasticity and movement of the upper limb.

S101

Stress, Strain and Tissue Lengthening: Clinical Reasoning for Mobilization Orthoses

Michael Borst, OTR, OTD, CHT, FAOTA

Joint motion and soft-tissue integrity influence clients' functional performance. Therapists are being asked to demonstrate the value of their services by achieving better outcomes with fewer resources. An increase in value will come from working smarter, with better clinical reasoning to understand conditions and select interventions. Therapists need to differentially diagnose client conditions and clinically reason at a high level to determine the most effective and safe interventions.

This presentation will give hand therapists the scientific background and evidence to make appropriate, effective treatment decisions in partnership with their clients. The soft-tissue stress-strain curve, and the various regions under the curve (Borst, 2020; Neumann, 2025) will be demonstrated using a variety of methods — visual aids, mechanical analogy demonstrations and interactive demonstrations using the participants' own bodies. Participants will apply their understanding of the stress-strain

THURSDAY, OCTOBER 8 (CONTINUED)

GRAND BALLROOM A

curve zones by analyzing various interventions aimed at tissue elongation. Participants will then differentiate among those interventions to select the most effective ones for various conditions, using case studies and interactive response systems (e.g., Socrative). In this way, the session objective "participants will use the zones of the stress-strain curve to inform clinical reasoning for occupational therapy intervention in clients with post-traumatic contractures" will be met.

Orthotic intervention is frequently used to address soft-tissue contractures and joint range of motion loss. The various types of orthoses used for mobilization will be classified (static progressive, serial static, dynamic and casting motion to mobilize stiffness), and the strengths and weaknesses of each type related to mobilization intervention will be discussed, as well the appropriateness of each type in each stage of the healing process (Solomon, 2022). The evidence related to orthotic parameters will also be reviewed and discussed.

When Skill Becomes Maladaptive: Assessment and Retraining of Musician's Dystonia

Aviva Wolff, EdD, OTR, CHT

Task-specific focal hand dystonia in musicians represents a complex interaction of maladaptive neuroplasticity, altered sensorimotor integration, and high-demand motor learning. Despite its clinical relevance, many hand therapists lack structured approaches to assessment and treatment beyond general neurologic frameworks. This session presents a clinically grounded, task-specific model for evaluating and managing musician's dystonia, integrating neuroplasticity principles, sensorimotor control and functional performance analysis. The approach is anchored in direct observation of instrument-specific movement patterns, structured clinical testing and targeted sensorimotor retraining. Participants will be introduced to a systematic assessment framework including detailed performance history, task-based movement analysis, sensory testing and use of dystonia-specific outcome measures such as the Tubiana and Champagne Scale and Arm Dystonia Disability Scale. The session will then translate these findings into intervention strategies grounded in experience-dependent plasticity, including graded motor imagery, sensory motor retuning, constraint-based approaches and task-specific retraining. Emphasis will be placed on identifying maladaptive motor synergies and designing targeted interventions that reduce abnormal movement while preserving function. Clinical cases across instrument types will illustrate application, including differential response to prior treatments (e.g., botulinum toxin, splinting) and progression of retraining strategies. Active learning will include video-based movement analysis and small-group problem-solving to design treatment strategies. This session addresses a critical gap in upper extremity rehabilitation by providing a structured, clinically actionable model for managing a rare but highly disabling condition, with broader applicability to other task-specific motor disorders.

1:30 PM – 1:45 PM

Transition Break

THURSDAY, OCTOBER 8 (CONTINUED)

1:45 PM – 2:45 PM

Instructional Concurrent Session 2

1 CE Hour

GRAND BALLROOM A

A Holistic Approach to Hand Therapy for Ehlers-Danlos Syndrome and Hypermobility Spectrum Disorder

Ashley Enke, OTD, OTR/L, CHT

Virginia H. O'Brien, OTD, OTR/L, CHT

Jennifer Johnson, OTR/L, CHT

This session will expand attendees' knowledge and intervention toolkit for treating individuals with hypermobility spectrum disorder (HSD) and Ehlers-Danlos Syndrome (EDS). The complex, multisystem nature of these conditions can present challenges in treatment. The goal of this session is to provide attendees with the knowledge, perspective and tools needed to confidently navigate these complexities to provide comprehensive and effective care. Attendees will gain practical, evidence-informed intervention strategies that can be immediately applied in clinical practice to support this population. Specifically, the speakers will discuss the value of orthoses, stability exercises, low- and high-tech adaptive aids, joint protection, pain management techniques and strategies for fostering active coping skills. The speakers will also discuss common comorbidities and provide an overview of topics essential for working with this population, which may not be familiar to therapists with a primarily orthopedic lens. This session will highlight the importance of collaborative interprofessional knowledge including physical and occupational therapy, nursing, psychology, orthotics and prosthetics, medicine and health and wellness to support attendees in delivering holistic, patient-centered care when treating this population.

S201

"Sun's Out, Guns Out!" The Distal Biceps: A Look at Distal Biceps Anatomy, Function, Repair and Rehabilitation for the Upper Extremity Specialist

Vijay Muni, MS, OTR/L, CHT

Jim Wagner, OTD, OTR/L, CHT, COMT, CSCS

Distal biceps tendon ruptures have been reported as more rare; however, it is one of the most common tendon ruptures at the elbow. Distal biceps injuries, non-surgical and surgical repairs have become increasingly more common. Understanding biceps anatomy, function, non-surgical and surgical intervention is essential for the treating upper extremity specialist to enhance return to the highest level functional independence. This session will focus on implementing a multi modal approach where attendees will gain a comprehensive understanding of bicep anatomy, biomechanics of dysfunction, gain a comprehensive understanding current surgical and post-operative rehab guideline/ approaches, and discuss video-based case studies to discuss clinical reasoning and focus on return to sport especially for athletes competing. By the end of this session, participants will be equipped with a comprehensive framework for diagnosing, treating, and successfully returning patients with distal biceps injuries to high-level activity.

S101

Challenges in Zone 3-5 Extensor Tendon Injuries and Repairs

Amy Brossard, MS, OTR/L, CHT

Extensor tendon injuries in Zones 3–5 present unique rehabilitation and surgical challenges due to the intricate anatomy, tendon balance and risk of postoperative

THURSDAY, OCTOBER 8 (CONTINUED)

S103

complications. Common complications such as extensor lag, dense scar adhesion, pain, stiffness and limited flexion are frequently associated with prolonged immobilization and delayed tendon glide. This presentation will review the anatomical and biomechanical considerations of Zones 3–5 extensor tendon injuries, discuss current surgical and therapeutic management strategies, and explore the role of early controlled motion protocols in improving tendon excursion, minimizing adhesions and enhancing functional outcomes. Emphasis will be placed on evidence-based rehabilitation approaches and interdisciplinary collaboration to optimize patient recovery.

On My Nerves and Causing Me Tension! Utilization of Neurodynamics in Hand Therapy: An Evidence-based Approach

Anne Moscony, OTD, OTR/L, CHT

Dianna Lunsford, OTD M.Ed., OTR/L, CHT

Neurodynamic techniques are widely integrated into upper extremity rehabilitation; however, determining when and how to prescribe a slider versus a tensioner remains a nuanced clinical decision. Tensile loading is fundamental to nervous system homeostasis and adaptive remodeling, yet excessive or improperly dosed strain may provoke symptom exacerbation through ischemia, impaired intraneural blood flow or increased nerve sensitivity. Understanding the proper approaches is necessary to the provision of excellent care.

This intermediate-level session integrates current neuroscience and clinical research to support neurodynamic management of common upper extremity peripheral conditions. Emphasis will be placed on clinical decision-making to help therapists determine when sliders versus tensioners are most appropriate considering nerve sensitivity, symptom provocation and stage of healing. Participants will gain practical guidance for the selection and dosing of neurodynamic interventions to modulate neural sensitivity, enhance excursion, promote adaptive remodeling and restore function while minimizing symptom exacerbation.

By integrating foundational science and current research with clinical decision-making, this session equips hand therapists to translate current research into practice and promote professional confidence ensuring consistent, high-quality patient care associated with optimal patient outcomes. By bridging the gap between emerging neuroscience and clinical application, therapists strengthen their ability to make precise, patient-centered neurodynamic decisions. This shared commitment to evidence-informed practice amplifies the collective voice of hand therapy, reinforcing professional excellence and sustaining resilience within an evolving healthcare landscape.

More than a Patient Handout: Building Health Literacy in Hand Therapy

Rose L. McAndrew, OTD, OTR/L, CHT

Kim Masker, OTD, OTR/L, CHT

Think about “that patient.” The one who is taking off their dorsal blocking orthosis or cannot do their home exercise program correctly. Are they obstinate or simply not listening? What if they didn’t understand what you told them due to anxiety or we communicated the information unclearly? Health literacy is the degree to which individuals can understand and use the information we provide them as well as our own healthcare organizations’ capacity to empower our patients to understand and act on that health information.

GRAND BALLROOM B

THURSDAY, OCTOBER 8 (CONTINUED)

In this course, attendees will learn how to support patients with understanding and acting on health information, beginning with assessing their own current knowledge of health literacy. Attendees will explore individual (intrinsic), socioeconomic/demographic and environmental (extrinsic) factors that influence a person's ability to use and act on health information. Individual factors include a person's reading skills, health beliefs, and psychological state, to name a few. Socioeconomic and demographic factors include social determinants of health as well as cultural views on healthcare. Environmental factors include our ability to communicate health information clearly as well as our organization's ability to support and empower patients' ability to understand and act on the information. Attendees will then take a deeper dive into the environmental factors—therapists' ability to communicate clearly and workplaces' ability to support patients in their recovery. Attendees will reflect on cultural humility and implicit biases when communicating with patients, then build skills using strategies such as shared decision making, teach-back method, and creating action plans. They will recognize their role in advocating for improved organizational health literacy. Lastly, attendees will appraise hand therapy-related patient education materials and provide suggestions for improvement.

2:45 PM – 3:00 PM

Transition Break

3:00 PM – 4:00 PM

Instructional Concurrent Session 3

1 CE Hour

GRAND BALLROOM A

S201

Development of a Scar Self-Management Guide for Gender-Affirming Surgery Patients: An Interdisciplinary Collaboration

Morgan Merrill, MS, OTR/L, CHT

This presentation will be a case for hand therapy's role with patients who have undergone masculinizing mastectomies and/or radial free forearm flap phalloplasty, two gender-affirming surgical procedures that affect upper extremity function in the postoperative period. In addition to orienting participants to the unique clinical needs of gender-affirming surgery patients and providing an overview of these two specific surgical procedures as they relate to the upper extremity, participants will be guided through scar care interventions for this population. As a hand therapist with training in medical illustration, this has been developed as an illustrated self-management guide that will both help guide clinicians who have never treated gender-affirming surgery patients and guide patients in self-management techniques that will optimize their surgical outcomes.

From the Ground Up: Core and Posterior Chain Influence on Upper Extremity Performance

Theresa Hallenen, DHSc, MS, OTR/L, CHT

Michael Mueller, OTR, CHT

The session will equip hand therapists with practical, contextually relevant knowledge regarding the impact of core stabilization and posterior chain activation on the functional recovery of the hand and upper limb following injury or surgical intervention. This content explores the impact of pelvic, spinal and scapular integration, plus static and dynamic postural control, on upper limb function in daily activities (activities in daily living and

THURSDAY, OCTOBER 8 (CONTINUED)

S101

instrumental activities of daily living). Participants will learn methods to evaluate core and posterior chain contributions relevant to upper limb rehabilitation. This exploration will enable learners to recognize hand therapy interventions that incorporate functional strengthening and exercise principles. Attendees will use case scenarios and clinical examples to develop intervention programs focused on movement efficiency, load sharing and endurance that support better patient outcomes.

Injuries Limiting Forearm Rotation

Marc Bartholdi, OTD, OTR/L, CHT

Thomas Curry, OTR/L, COMT

This course provides a focused exploration of the anatomy, biomechanics and clinical implications of forearm rotation, emphasizing the complex interplay between the radius, ulna, interosseous membrane and associated musculature. Learners will examine how pronation and supination contribute to functional movement and how disruptions in these mechanisms lead to common and complex clinical presentations.

Through case-based learning and evidence-informed discussion, the course reviews key conditions such as radial head fractures, Essex-Lopresti injuries, Monteggia and Galeazzi fracture-dislocations, distal radioulnar joint (DRUJ) instability, triangular fibrocartilage complex (TFCC) injuries and tendinopathies affecting the pronator and supinator muscle groups. Special attention is given to mechanisms of injury, diagnostic considerations, red flags and the functional consequences of impaired rotational control.

By the end of the course, learners will be equipped with a deeper understanding of forearm rotational mechanics and the injuries that compromise them, supporting more accurate assessment, clearer documentation and more effective interdisciplinary communication in clinical practice.

S103

Trigger Points and Dry Needling in Clinical Practice for Upper Extremity Rehab Therapists

Amanda Blackmon, PT, DPT, OCS, CMTPT/DN

Nicole Caldwell, PT, DPT, CHT, OCS, CMTPT

Myofascial trigger points are hyperirritable spots within a taut band of skeletal muscle that can produce pain and limit function in the upper extremities. Dry needling (DN) has emerged as a prominent intervention to alleviate these trigger points and consequently improve the efficacy of rehabilitation therapies aimed at the upper extremities.

Additionally, DN has proven effective for scar, fascial adhesions and tendinopathy. This presentation explores the clinical applications, efficacy and the underlying mechanisms of DN in treating myofascial trigger points and fascia for upper extremity rehabilitation therapists. Additionally, many states have approved DN for OT scope of practice, making this valuable intervention more accessible for many upper extremity rehab therapists.

Trigger points cause referred pain, muscle weakness and inhibition, reduced range of motion, and can alter muscle activation patterns. They are often found in muscles subjected to repetitive strain, poor posture or acute trauma. Referred pain from trigger points can mimic or contribute to common diagnoses seen in patients with upper extremity complaints, such as carpal tunnel syndrome or lateral epicondylalgia.

THURSDAY, OCTOBER 8 (CONTINUED)

GRAND BALLROOM B

DN involves the insertion of fine, filiform needles into the skin and muscle directly at the trigger points. Unlike acupuncture, which is rooted in traditional Chinese medicine, DN is based on Western anatomical and neurophysiological principles. The technique aims to disrupt the contracted sarcomeres within the trigger point, promoting muscle relaxation and pain relief. When utilizing DN for scar and fascial adhesions, the primary effect is on the fibroblasts and mechanical signaling through the connective tissue.

DN is minimally invasive and cost-effective. Given the specialized nature of DN, it is imperative for therapists to undergo comprehensive training. This presentation will introduce the technique, provide evidence for its use in many upper extremity pathologies and will review the training requirements and rules in various states for PTs and OTs.

Sustainability in Hand and Upper Extremity Therapy

Tauni Bird, OTD, OTR/L, CHT

Kim Masker, OTD, OTR/L, CHT

Robert J. McClellan, OTR/L, CHT, COMT-UL

Healthcare in general contributes significantly to environmental degradation through waste generation, energy use, and supply chain practices. Rehabilitation services – including hand and upper extremity therapy – are not exempt from these impacts, yet the profession lacks a clearly articulated, evidence-informed framework for environmentally sustainable clinical practice.

Sustainability, for the purposes of this project, is defined as environmental sustainability within hand and upper extremity therapy – specifically practices that reduce material waste, optimize resource use, and support long-term ecological and community health in the context of hand therapy. While sustainability can be conceptualized across personal, professional, organizational, and environmental domains, this PSA will explicitly focus on environmental sustainability as it relates to clinical decision-making, materials, and systems of care.

This project responds directly to priorities identified by leaders in hand therapy and occupational therapy advocacy, while addressing a documented gap in the U.S.-based hand therapy literature. Rather than summarizing the work of professional leaders, students will conduct original scholarly synthesis, analysis, and tool development to advance sustainable occupational therapy practice.

4:00 PM – 4:30 PM

Coffee Break

EXHIBIT HALL A

4:30 PM – 5:00 PM

Welcome to ASHT 2026!

GRAND BALLROOM C/D

Danielle Sparks, DHS, MOT, OTR, CHT, ASHT 2025-2026 President

Rachel Pigott, MPH, BSOT, ASHT 2026 Annual Meeting Chair

THURSDAY, OCTOBER 8 (CONTINUED)

5:00 PM – 7:00 PM

Plenary Session 1 | Opening Session

2 CE Hours

GRAND BALLROOM C/D

Achieving Quality Outcomes with Flexor Tendon Repairs

Nancy Cannon, OTR, CHT
 Sarah Mart, MS, OTR, CHT
 Susan Blackmore, MS, OTR/L, CHT, COMT UL
 Keri Landrieu, LOTR, CHT
 Greg Pitts, OTD, MSOTR/L, CHT
 Sally Roscetti, OTR, CHT
 Teresa Jeardeau, OTR/L, CHT
 Jill K. Levine, OT/L, CHT
 Cate LePage, MBA, OTR/L, CHT
 Lauren DeTullio, OTR/L, CHT
 Macy Stonner, OTD, OTR/L, CHT
 Stephanie Kannas, OTD, OTR/L, CHT, CLT

Join us for the opening panel session, Achieving Quality Outcomes with Flexor Tendon Repairs: It's All About the Little Things! Moderated by Nancy Cannon, OTR, CHT, this two-hour special session features expert faculty with decades of experience in flexor tendon rehabilitation and engaging case studies submitted by therapists from across the country. Attendees will gain practical, evidence-based strategies to optimize outcomes following flexor tendon repair while exploring the latest research and clinical pearls.

7:00 PM – 9:00 PM

Welcome Reception & Poster Session

EXHIBIT HALL A

Network with fellow attendees, view e-Posters and visit our exhibitors. Drinks and small bites will be served. Reception is included with Annual Meeting registration.



FRIDAY, OCTOBER 9

6:45 AM – 7:45 AM

Let's Be New Together Breakfast

S102

Phyllis Ross, OTD, OTR/L, CHT, CLT
Stephanie Strouse, OTD, OTR/L, CHT

Kick off your Friday together with those who are new to hand and upper extremity therapy, to ASHT and/or to the Annual Meeting! This breakfast is open to everyone, but may be especially valuable for early career therapists, students, new ASHT members and first-time conference attendees. If you are new to ASHT or the Annual Meeting, this is a great opportunity to learn more about what you can gain from the society and the conference. If you are an experienced Annual Meeting attendee, come to welcome and support those who are new to our community!

6:45 AM – 7:45 AM

Axogen Breakfast Symposium

S203

From Surgery to Function: Therapy's Role in Recovery Success

Theresa Hallenen, DHSc, MS, OTR/L, CHT
Neill Y. Li, MD

Successful nerve surgery is only one step in the recovery journey. This session explores how coordinated communication between surgeons and therapists can help patients navigate complex recoveries, overcome unexpected challenges, and achieve meaningful functional outcomes. Through real-world examples and insights from the Duke Nerve Health Program, attendees will learn practical strategies for creating a seamless continuum of care that keeps patients engaged, informed and supported throughout recovery.

8:00 AM – 9:00 AM

Instructional Concurrent Session 4

1 CE Hour

GRAND BALLROOM A

Creating a Framework for Evaluating Evidence-Based Practice

Gretchen Bachman, PhD, OTD, OTR/L, MBA, CHT
Rose L. McAndrew, OTD, OTR/L, CHT

This interactive session focuses on critically appraising research and translating evidence into practice. Using relative motion flexion orthoses as an example, participants will evaluate research quality, identify levels of evidence and recognize common methodological flaws and biases.

The session reviews key research concepts, including study design, statistical interpretation and reporting guidelines. Through polling and discussion, participants will analyze studies, develop clinical questions and apply evidence-based frameworks to guide decision-making when high-level evidence is limited.

FRIDAY, OCTOBER 9 (CONTINUED)

S201

A Masterclass in Triangular Fibrocartilage Complex Injuries: Conservative Management Pearls

Wendy T. Medeiros, OTR, CHT (retired)

This will be an instructional session where participants will learn how to approach and design both conservative and post-op TFCC injury management for improved outcomes. We will explore several cases in a case-based format to bridge the gap between evidence and practice. Participants can look forward to developing a critical-thinking mindset to solving common pitfalls with TFCC injury management.

S101

The Hand Therapist's Management of Rotational Athlete's Upper Extremity Injuries

Michael Mueller, OTR, CHT

From the perspective of the upper-extremity therapist, rotational sports are presenting us with both volume and variety of clinical material. Golf, tennis, pickleball, football, baseball and softball are just a few of the growing rotational sports for all ages. The full extent of anatomy trains that link joints, muscles and fascia need to be understood by the treating clinician. They need to be able to assess the kinetic chain and develop movement patterns to return the injured athlete to play. Concepts of rotational movement, stability and customized exercise and treatments are required to get better results for injured rotational athletes.

The upper extremity is involved in almost every aspect of rotational sports and must be coordinated with trunk and hip rotation to perform the demands of the sport. In recent years, we have seen an increase in upper extremity injuries in rotational athletes, and they require sport-specific treatment skills for the upper-extremity specialist managing these athletes to safely return them to play. This session will discuss the specialized evaluation and treatment of the upper extremity in rotational athletes to safely return them to all aspects of the sports they play.

S103

Are We Managing Trigger Finger Effectively? What Works, What Doesn't and What the Evidence Says

Eli Yovits, OTR/L, CHT

When patients present with trigger finger, they typically have many questions: Will this get better? What exercises are appropriate? How can I avoid an injection or surgery? As clinicians, we are expected to provide clear guidance, yet sometimes the large volume of information available to us is conflicting, outdated or inconsistently applied in practice. This confusion is increasingly amplified by social media, where exercises are often promoted as "the best way to get rid of trigger finger," despite limited or inconsistent evidence to support many of these claims.

This variability raises important clinical questions. What does the current evidence actually say about conservative management of trigger finger? When should we confidently recommend a course of hand therapy, and when should we recognize that therapy is unlikely to be effective? How should splinting be implemented - what type, for how long and with what expectations?

The aim of this presentation is to critically review and synthesize the available evidence on trigger finger management and present it in a clear, concise and clinically relevant manner. By translating current research into practical recommendations, this session will support hand therapists in making informed, evidence-based decisions when treating this extremely common yet potentially debilitating condition.

FRIDAY, OCTOBER 9 (CONTINUED)

GRAND BALLROOM B

S102

The Upper Extremity Therapist's Role in the Return-to-Work Process

Mitchell Voss, PP-OTD, MBA, OTR/L

Sierra Rusch, OTR/L

Upper extremity injuries significantly impact an individual's ability to meet job demands, particularly in physically intensive roles. This session assists the outpatient orthopedic therapist in identifying the most common upper extremity injuries and identifying the ways in which these injuries occur. Participants will understand ways in which to reduce risk for the upper extremity for those at work. Participants will learn structured approaches to progressing patients from acute recovery to work readiness, emphasizing both physical and psychosocial contributors to successful outcomes. Participants will learn their respective role in the return-to-work process and how to support the patient from injury to return to work without restrictions.

Flexor Tendon Phobia: Facing Fears and Tendon Repairs

Alexandra MacKenzie, OTR/L, CHT, CLT

Gwen Weinstock-Zlotnick, PhD, OTR/L, CHT

Working with patients after tendon repair can be daunting and anxiety provoking. Risk of rupture, adhesions and poor outcomes can be particularly stressful for clinicians, who may doubt how to proceed with care, despite knowing guidelines for treatment. Lack of confidence not only can limit patient progress but also may impact patient experience with their recovery. Moreover, anxiety on the part of the treating clinician can interfere with effective communication both with the patient and the referring physician.

This presentation will first give participants the opportunity to reflect and discuss fears when treating patients with tendon repairs, discuss how they navigate care, and identify the strengths and challenges in their approaches to date. Next, the presenters will review fundamental principles of tendon healing and explore the ramifications of care that is either too conservative or too aggressive. Then the presenters will identify indicators for advancement so that therapists can confidently know when to progress patients as well as how to confidently communicate a balance of progressing movement in a protected way with patients and conveying concerns clearly with physicians. The session will end with a group case-based discussion. Participants will be allowed to ask questions throughout the presentation and are encouraged to share challenging cases.

9:00 AM – 9:15 AM

Transition Break

FRIDAY, OCTOBER 9 (CONTINUED)

9:15 AM – 10:15 AM

Instructional Concurrent Session 5

1 CE Hour

GRAND BALLROOM A

S201

Losing Your Grip: Finding Your Voice in Recognizing Imposter Syndrome and Burnout in Hand Therapy

Stephanie D. Strouse, OTD, OTR/L, CHT

This presentation will explore the stressors of such a specialized clinical practice and encourage active rehabilitation of the professional mindset. The course will begin by defining what imposter syndrome and occupational burnout and one can closely lead to the other. Several evidence-based articles will be included into the presentation to show the relevance of both of these topics and how they play into the role of the hand therapist or healthcare provider. There will be active learning opportunities to engage participants to develop their own plan of care to break free from the imposter phenomenon.

Clinical Thresholds: A Decision Architecture for Treatment Progression in Hand Therapy

Aviva Wolff, EdD, OTR, CHT

Emily Altman, PT, DPT, CHT, OCS

Gwen Weinstock-Zlotnick, PhD, OTR/L, CHT

Progression of treatment in hand therapy is often guided by biological healing timelines, time-based protocols or individual experience, leaving clinicians uncertain about when to advance, modify or pause intervention. This session introduces a structured, criteria-based decision architecture to support treatment progression under conditions of clinical uncertainty.

Participants will be introduced to a five-signal model that integrates biological constraints, irritability profile, load tolerance, movement integrity and functional demand. Rather than relying on isolated indicators (e.g., pain or time since surgery), this model emphasizes convergence of clinical signals to identify progression thresholds and guide decision-making. The session will highlight how progression may involve advancing different variables, including load, complexity, speed or endurance, based on patient presentation.

Instructional methods will include brief didactic framing followed by case-based application. Clinical scenarios (e.g., post-fracture stiffness, tendon repair, high irritability presentations) will be used to demonstrate how the model is applied in practice.

Participants will engage in guided decision-making exercises, identifying whether to advance, hold or modify treatment and selecting appropriate progression strategies based on presented findings.

Common cognitive errors that influence progression decisions, including overreliance on time-based protocols and misinterpretation of symptom response, will be addressed. Practical tools will be provided, including a progression checklist and sample documentation language to support clear, defensible decision-making.

This session provides a repeatable approach to progression decisions that strengthens clinical judgment, reduces uncertainty and supports more confident, precise advancement of care

FRIDAY, OCTOBER 9 (CONTINUED)

S101

**Using Relative Motion Flexor Orthoses for Zone I-III Flexor Tendon Repairs:
Considering the Possibilities**

Andrew T. Bracken, MOT, OTR/L, CHT

Brian Bennett, OTR/L, CHT

Relative motion extension orthoses have been used for over 40 years as an effective intervention for Zone IV and V extensor tendon injuries and repairs by promoting early active mobilization of involved digits thus limiting the impacts of scar formation and stiffness in the involved digits. Recent research suggests that relative motion orthoses have the potential to effectively address a variety of other hand conditions from sagittal band injuries to Boutonniere deformities to stiffness of the proximal interphalangeal joint due to fracture or dislocation. One intriguing concept currently emerging is the use of relative motion flexion orthoses as an intervention tool for Zone I-III flexor tendon lacerations and repairs to achieve early controlled active mobilization. This interactive instructional session will explore the design concepts and reasoning, clinical decision making and current hand therapy literature, practice and clinical outcomes regarding relative motion flexion orthosis use with patients who have Zone I-III flexor tendon repairs. A case study will be presented to demonstrate how these concepts were brought together to manage a patient with a Zone II flexor tendon laceration using a relative motion flexion orthosis to achieve early active mobilization.

S103

**Healing Beyond the Physical: Psychology in Interdisciplinary Upper Extremity
Limb Loss Care**

Alta Fried, MS, OTR/L, CHT

Ajul Shah, MD

Gina Vella, PsyD

Healing after upper extremity injury or limb loss goes far beyond the physical. This talk highlights the psychological impact of loss and the power of restoring identity, function and quality of life.

GRAND BALLROOM B

**Raising Our Voice: Practical Advocacy Strategies to Strengthen
and Advance Our Profession**

Robert J. McClellan, OTR/L, CHT, COMT-UL

Molly Hudson, OTR, CHT, COMT (UE)

Advocacy is more than a concept; it is a core responsibility for every member of our profession. Whether we are raising awareness, educating others, shaping public opinion, improving systems or protecting the interests of our community, advocacy ensures that our work remains visible, valued and impactful. As our professional landscape continues to evolve, the need for informed, confident and engaged advocates has never been greater.

This session will highlight the many pathways through which professionals can influence change. We will explore opportunities ranging from public speaking and mentoring students to legislative engagement, community outreach and interprofessional collaboration. Participants will learn practical tools and communication strategies that strengthen their ability to advocate effectively in a variety of settings. The session will also emphasize confidence-building techniques to help individuals speak with clarity and purpose – whether in the workplace, in the community or in policy discussions.

By the end of the session, attendees will have a deeper understanding of how advocacy can be integrated into everyday practice and how each professional, regardless of role or experience level, can contribute meaningfully to advancing the field.

FRIDAY, OCTOBER 9 (CONTINUED)

10:15 AM – 10:45 AM

Coffee Break, Exhibit Hall & Posters

EXHIBIT HALL A

10:45 AM – 11:45 AM

Scientific Session 1

1 CE Hour

GRAND BALLROOM C/D

Characteristics of Thumb Extensor Muscle Activity with and Without a Thumb Spica Splint During ADL Activities, Among People With De Quervain's Tenosynovitis

Yafi Levanon, PhD

Baseline Resilience as a Predictor of Psychosocial Distress Post-Physical Trauma

Elizabeth Williams, PhD, OTR/L, CHT

The Acceptability of Patient Reported Outcome Measure for Children with Upper Limb Impairment Among Patient and Clinician Users

Jenny M. Dorich, PhD, MBA, OTR/L, CHT

Rehabilitation of Elbow Fractures and/or Dislocations: An Update on the Current Practice Patterns of Treating Clinicians

Sarah Doerrer, PhD, OTR/L, CHT, CLT

Having a Child with Brachial Plexus Birth Injury: A Scoping Review of Parental Psychosocial and Contextual Family Outcomes

Katherine Henry, OTD, OTR/L

Geographic Disparities in Access to Hand Therapy in West Virginia: A County-level Analysis

Isabella Benintendi, M.D

Comparing the Effectiveness of the 'Think in Nerve Length and Layers' Approach to Traditional Treatment for Patients with Lateral Elbow Pain

Chelsea Witt, OTR/L

Ann Marie Feretti, EdD, OTR/L, CHT

Jennifer Elsinger, OTR/L CHT

Development and Piloting of an Organizational Toolkit to Implement Upper Extremity Injury Prevention in Collegiate Music Programs: The Musculoskeletal Health for Musicians Project

Aviva Wolff, EdD, OTR, CHT

Bent Monofilaments: Is a Practical Fix Effective?

Caroline W. Stegink Jansen, PT, PhD, CHT

Updating Normative Data of the Complete Minnesota Dexterity Test

Sarah Doerrer, PhD, OTR/L, CHT, CLT

11:45 AM – 12:15 PM

Plenary Session 2 | Practice and Advocacy

0.75 CE Hours

GRAND BALLROOM C/D

Angela Stephens, DHS, OTR/L, CHT

12:15 PM – 1:45 PM

Lunch, Exhibits & Posters

EXHIBIT HALL A

FRIDAY, OCTOBER 9 (CONTINUED)

12:30 PM – 1:30 PM

Lunchtime Sessions

S203

Hand Therapy Certification Commission: Preparing for the CHT Exam **1 CE Hour**
Martin Walsh, OTR/L, CHT

This session is presented by Martin Walsh, OTR/L, CHT and a panel of therapists who recently passed the Hand Therapy Certification Examination. It will describe detailed statistics regarding exam, along with insights from new CHTs about their successful preparation strategies.

S201

AOTF Research Community Meeting
Sarah Doerrer, PhD, OTR/L, CHT, CLT
Lawrence Liff, MA

Join the hand and upper extremity therapy research community for an informal lunch session. Attendees will hear from Sarah Doerrer and Lawrence Liff (AOTF) about upcoming opportunities to apply for the AOTF-ASHT-AHTF Hand in Hand Research Grant. This session also offers an open forum for researchers of all experience levels to connect — ask questions, share ideas, seek collaboration or mentorship and learn about current research and emerging priorities in hand and upper extremity therapy. Drop in, engage and grow your research network.

GRAND BALLROOM A

Empowered to Lead: Shaping the Future of Hand Therapy **1 CE Hour**

The ASHT Leadership Development Program (LDP) aims to foster and enable present and upcoming leaders in hand and upper extremity therapy. During this session, LDP mentors will provide an overview of the program, discussing the application process and layout of the didactic content. Current LDP cohort members will also present their program poster presentation deliverable, highlighting leadership concepts explored during the LDP.

12:30 PM – 1:00 PM

Beyond the Traditional Thumb Spica: Functional Stabilization Strategies That Patients Will Wear

S202C

Hands-on Demo Presented by Essity
Carl Lindsey, OTC, COF, ROT, CWCMS

1:00 PM – 1:30 PM

Bridging the Gap Between Clinic and Home: Hands-On with RxCart™

GRAND BALLROOM B

Hands-on Demo by North Coast Medical
Adam C. Buglio, OT, MBA

FRIDAY, OCTOBER 9 (CONTINUED)

1:45 PM – 2:30 PM

Plenary Session 3 | International Invited

.75 CE Hour

GRAND BALLROOM C/D

When Stability and Proprioception Fail: Bridging the Gap from Brain to Biomechanics in the Hypermobility Hand. Rethinking Assessment and Rehabilitation in EDS and HSD

Marta Jokiel, PhD

Despite growing awareness of Ehlers-Danlos Syndromes (EDS) and Hypermobility Spectrum Disorders (HSD), many clinicians continue to approach upper extremity dysfunction through a predominantly structural or orthopedic lens. However, joint hypermobility alone cannot explain the complexity of symptoms experienced by patients.

This session will explore the mechanisms underlying upper extremity dysfunction by integrating current evidence from biomechanics, sensorimotor control, proprioception, pain science and neuroplasticity. Participants will gain a new perspective on why patients experience recurrent instability, pain, fatigue and reduced functional performance despite minimal structural findings.

Rather than focusing on individual treatment techniques, this presentation will provide a clinical reasoning framework linking connective tissue pathology with altered sensory feedback, motor control and dynamic joint stability. Through clinical examples and emerging evidence, attendees will learn how these mechanisms influence assessment, rehabilitation planning and long-term management of the hypermobile upper limb.

By bridging neuroscience and biomechanics, this session aims to challenge traditional assumptions about hypermobility and provide therapists with a deeper understanding of the “why” behind current rehabilitation strategies. It will serve as a scientific foundation for evidence-informed, patient-centered care in individuals with EDS and HSD.

2:30 PM – 3:15 PM

Plenary Session 4 | Nathalie Barr Award Lecture

0.75 CE Hours

GRAND BALLROOM C/D

Virginia H. O'Brien, OTD, OTR/L, CHT

3:15 PM – 3:45 PM

Plenary Session 5 | AAHS Vice President

0.5 CE Hours

GRAND BALLROOM C/D

From Cocktail Napkin Drawing to the Operating Room: Improving Nerve Repair through Innovation

Jonathan Isaacs, MD

Explore the journey of transforming an innovative idea into a clinically relevant nerve repair solution. This session will follow the development and commercialization of nerve tape, from the initial concept and development process through its application in the operating room. Attendees will gain insight into clinical considerations, surgical technique and decision-making, as well as the collaboration required among surgeons, scientists, engineers and marketing professionals to bring an innovation to market. The session will also highlight the growing relevance of nerve tape in clinical practice and its implications for therapists caring for patients following nerve repair.

FRIDAY, OCTOBER 9 (CONTINUED)

3:45 PM – 4:15 PM

Coffee Break, Exhibit Hall & Posters

EXHIBIT HALL A

4:15 PM – 5:15 PM

Instructional Concurrent Session 6

1 CE Hour

GRAND BALLROOM A

Pathways for Preservation: Implementing Academic Strategies to Ensure Flourishing of Hand Therapy for All

Brian J. Wilkinson, PT, DPT, DHSc, CHT, CLT

Alyssa L. Phillips, CScD, MOT, OTR/L

This session will explore several influential factors related to the sustainability of hand therapy practice for physical therapists and occupational therapists, particularly those considerations pertaining to early career individuals. Presenters will review existing pathways to enter the specialty practice of hand therapy, including graduate education, residency and fellowship. They will also address perceived barriers to achieving specialization such as academic accreditation standards, limited clinical experiences and resistance to mentorship by busy clinicians. The primary focus of this presentation will be on examining solutions that can be implemented by academic institutions and learning organizations to ensure that the needs of all constituents – patients, providers, employers and health systems – are adequately addressed.

Both presenters currently work in graduate education within physical therapy and occupational therapy academic programs, respectively, and both have responsibility for the upper extremity curriculum in their department. The presenters have a background in upper extremity management as clinicians and have participated in formal mentoring programs. By providing context from the shared experiences of a physical therapist and occupational therapist, it is anticipated that a greater perspective will be offered as the hand therapy profession strives to realize its necessary opportunities for growth, expansion and viability.

S201

Return to Sport Following Upper Extremity Injuries: An Evidence-Based Approach

Mitchell Voss, PP-OTD, MBA, OTR/L

Sierra Rusch, OTR/L

Upper extremity injuries present unique challenges in safely returning athletes to sport. Athletes require a varied approach to care based on their specific sport and readiness to return to allow for an appropriate and safe return to sport. The session will identify loading principles and examine the most common upper extremity injuries that occur in sport. The session outlines a criteria-based model integrating tissue healing, progressive loading, kinetic chain principles, functional testing and sport-specific demands. The criterion of return to sport and the principles involved for the upper extremity will be examined through the content. Upper extremity return to sport testing requires a nuanced approach that addresses not only strength and range of motion but also power, speed and neuromuscular control and coordination. Without examining all of these concepts appropriately and making evidence-based decisions for return to sport, athletes may return too early and suffer other injuries or more extensive ones requiring prolonged care or further surgical interventions. While athletes are highly competitive and eager to return to sport as quickly as possible, as therapists, we have to ensure they are safe to return to their respective sport, which can only be done through evidence-based return to sport testing.

FRIDAY, OCTOBER 9 (CONTINUED)

S101

The Unforgiving Elbow Joint: Key Concepts for Successful Patient Outcomes

Jane Fedorczyk, PT, PhD, CHT, FAPTA

For decades, the elbow has been called the unforgiving joint due to the high incidence of post-traumatic stiffness following injury. Therapists and surgeons are challenged to optimize motion while maintaining stability for tissue healing. This session will focus on evidence-informed recommendations for the management of elbow and/or forearm fractures with or without dislocation to optimize the early recovery of motion during the protective and return to participation in the post-protective phases of rehabilitation. Contributing factors that may impede recovery including joint stiffness, persistent pain, bone health and weightbearing challenges will be discussed. The incidence of traumatic elbow injuries is low in comparison to other conditions of the elbow due to bony stability. Many therapists have limited exposure to such injuries. An in-depth review of key concepts in each phase of rehabilitation will improve clinical reasoning for therapists with limited experience.

S103

Breathing New Life into Shoulder Rehabilitation: Integrating Diaphragmatic Breathing and Postural Symmetry

Bindu Abraham, OTR, CHT

Priya Bakshi, OTD, OTR, CHT

Shoulder pain is a prevalent musculoskeletal condition that significantly limits participation in work, self-care and meaningful daily activities. While contemporary treatment approaches recognize regional interdependence, rehabilitation often remains focused on local strengthening and mobility. Can outcomes improve if hand therapists expand their lens beyond the shoulder complex?

Optimal shoulder girdle function is intrinsically linked to posture, thoracic mobility, rib cage mechanics and lower-body alignment. Impaired postural control and dysfunctional breathing patterns alter scapular positioning, disrupt neuromuscular coordination and contribute to persistent pain. Emerging understanding of the myofascial and neuromotor relationship between the diaphragm and shoulder girdle highlights the diaphragm's role in postural stabilization and movement efficiency.

As movement specialists, hand therapists are uniquely positioned to assess postural asymmetries, identify dysfunctional breathing strategies and address kinetic chain contributors that influence shoulder kinematics. Integrating diaphragmatic breathing and postural symmetry training may enhance traditional therapeutic exercises by improving motor control, reducing compensatory patterns and optimizing movement efficiency.

This presentation will review the anatomical and biomechanical connections between the diaphragm and the upper quarter and demonstrate practical assessment and treatment strategies. Through case examples, demonstrations and lab, participants will explore how integrating diaphragmatic breathing and postural retraining can optimize shoulder rehabilitation outcomes.

FRIDAY, OCTOBER 9 (CONTINUED)

GRAND BALLROOM B

The Challenges of Treating Musicians' Pain

Rachel Graves, CHT, OTD, OTR/L

Martha Paterson, OTR/L, CHT

When musicians experience musculoskeletal pain or focal hand dystonia, hand therapists are often presented with a daunting case for evaluation and treatment. The high repetition of specialized fine motor movements, sustained awkward postures and psychosocial factors make them a population that places tall orders for the clinician. The FRAME Model for Hand Therapy is an adaptable, evidence-informed, integrative care approach to assist clinicians in treating these challenging cases. FRAME is an acronym that focuses on foundation, regulation, awareness, movement and engagement. This assists both therapists and artists as a visual guide from beginning rehabilitation to independence by keeping track of goals and relevant treatment areas.

FRAME integrates evidence on nervous system regulation and proprioception to help musicians return to practice and performance. Proprioception, a new level of postural and movement awareness, is a key component to all exercises and therapeutic activities. Return to play is the foundation for all education provided in therapy and goes beyond a practice schedule; it helps a musician see their body, music, breath and daily activity become integrated to restore their occupational identity.

First, this session will explore the mind, body and occupational disruption of a musician with pain. Then the FRAME Model for Hand Therapy and its utility in practice will be explained with evidence-supported treatment interventions. Case studies will demonstrate application of FRAME with interactive audience participation to optimize outcomes in hand therapy practice.

5:15 PM – 5:30 PM

Transition Break

5:30 PM – 6:30 PM

Instructional Concurrent Session 7

1 CE Hour

GRAND BALLROOM B

Stability Matters: Mapping Dynamic Stability Interventions and Outcomes for Thumb CMC Function

Lori DeMott, OTD

Thumb carpometacarpal (CMC) pain, weakness and functional instability are common and disruptive concerns in hand therapy, and conservative care includes interventions aimed at supporting dynamic stability. However, the published literature varies in how stabilization-focused interventions are described, progressed, and evaluated – making evidence-informed clinical decision-making less straightforward, particularly for clinicians newer to hand therapy.

This 60-minute instructional session translates findings from a faculty-led, graduate student-driven scoping review that mapped conservative, dynamic stability-focused interventions and summarized the outcome measures used to assess pain and function. The scoping review followed established JBI and PRISMA-ScR guidance. Across

S201

26 studies, interventions clustered into four categories: joint mobilization/manual therapy, proprioceptive and neuromuscular control approaches, dynamic stabilization and isometric strengthening strategies and orthotic interventions. Outcomes most often included pain ratings, grip and pinch strength and self-reported function (e.g., QuickDASH), while follow-up beyond three months was reported less consistently.

The session uses an evidence-map framework to support applied clinical reasoning. Participants will learn to recognize intervention categories, select goal-aligned outcome measures and clearly communicate and document a defensible conservative plan when evidence is variable or limited. The take-home focus is practical: stronger outcome selection, transparent rationale-building, and greater confidence in translating research into daily hand therapy practice.

Distal Radius Fracture: Outcomes-based Decision Making and its Implication for Surgeon and Therapist Management

Greg Watchmaker, MD

Distal radius fractures (DRF) represent the most common upper extremity fracture (17.5%). In the last 30 years, there has been a profound paradigm shift in how surgeons treat DRFs both with regard to propensity to operate and choice of surgical method. Well-molded casts have been displaced by internal fixation and early mobilization. What is the data supporting this change in paradigm? What do these shifts in medical/surgical management mean to the treating therapist?

This presentation opens by challenging the clinician with a series of DRF clinical vignettes and asks the audience to weigh in (by hand-raise, clicker or app-based response if conference-supported). The presentation then explores the risks and benefits of those decisions based on publications on the topic. It explores the 'Roads not Taken' in the decision tree and whether better choices could be made.

This is an advanced presentation that explains the statistics that are used in meta-analyses (such as Forest Plots and Minimal Clinically Important Differences in DASH scores). After exploring the paradigm shifts in medical/surgical treatment, the presentation then shifts to apply similar statistical rigor to the evaluation of therapy interventions following DRFs. The presentation explores patient expectation setting based upon long-term data, patient empowerment in their own healing, geographic variations, treatment frequency variations and outcomes differences resulting from these differences. The presentation provides digestible take-away 'sound bites' from this data so that therapists can apply this knowledge in their own clinics. A selected bibliography of 29 research articles (from a full bibliography of 99 articles) is presented for further post-conference reading by therapists and forms the basis of this presentation.

S101

Optimizing Outcomes After Hand Crush Injuries

Nora E. Barrett, MS, OTR/L, CHT, WCC

This 60-minute session examines how crush injuries complicate hand fracture progression — including multi-system involvement, soft tissue compromise, complex fracture patterns, delayed union and secondary complications (infection, stiffness, neurovascular injury). Through concise evidence synthesis, clinical case vignettes, radiograph and photo interpretation, participants will refine assessment, triage, conservative vs. referral indications and rehabilitation planning to optimize functional recovery.

FRIDAY, OCTOBER 9 (CONTINUED)

S103

Clinical Practice Poster Spotlight 1

Sharon Montgomery, OTD, OTR/L, CHT, CEAS, CDP

Evan Lines, OTR/L, CHT

Gian V. Canonizado, OTD, OTR

Ricky Altahif, OTD, OTR, CHT

This session will spotlight several of the Clinical Practice Posters presented at this year's Annual Meeting. Presentations of interesting cases and novel treatment or educational approaches will be followed by time for discussion and audience questions. Come to learn, innovate and collaborate.

GRAND BALLROOM A

Practicing Resiliency: Managing Burnout in Healthcare Settings

Teresa FitzSimons, OTR/L, OTD, CHT

This session addresses burnout among healthcare professionals, focusing on recognition, risk factors and practical prevention and management strategies at both individual and organizational levels. Burnout will be defined using the World Health Organization's ICD-11 framework, emphasizing exhaustion, increased mental distance or cynicism toward work and reduced professional efficacy. The session will clearly distinguish stress from burnout by examining differences in causes, duration, emotional and physical symptoms, energy levels, cognitive effects and outcomes if left unaddressed. Common physical, emotional and behavioral warning signs will be reviewed to help participants recognize when chronic stress progresses to burnout.

Contributing factors across organizational, psychological, environmental and sociodemographic domains will be examined, along with evidence-based consequences such as reduced engagement, absenteeism, turnover and compromised quality of care. Participants will explore actionable strategies, including mindfulness, resilience skills, boundary setting, physical activity, self-compassion and peer or professional support, as well as organizational approaches such as supportive leadership, adequate staffing, flexibility, autonomy and burnout-aware management.

Active learning will be promoted through reflection and small-group discussion. Participants will identify warning signs and develop concise action plans incorporating both individual and system-level strategies to reduce burnout and foster resilience.

7:00 PM – 10:30 PM

ASHT Oktoberfest – Conference Party (ticketed event)

CRYSTAL BALLROOM

Grab your colleagues, raise a stein and come celebrate with us at the ASHT Oktoberfest!

This year's conference party will feature an Oktoberfest-style celebration with food, drinks, music and plenty of opportunities to connect with fellow attendees. Tickets can be purchased by clicking the link in your registration confirmation email."

SATURDAY, OCTOBER 10

8:00 AM – 9:00 AM

Instructional Concurrent Session 8

1 CE Hour

GRAND BALLROOM A

Strengthening New Muscles: Moving from Patient Care to Teaching

Ann Marie Feretti, EdD, OTR/L, CHT

Sara Brito, PhD, OTR/L, CHT

This session is designed for practicing hand therapy clinicians who want to explore adding teaching as a next step in their career. We will look at the steps involved in designing effective and engaging learning experiences, particularly for new educators transitioning from clinical practice to leading formal continuing education programs and to the university classroom. It begins with encouraging instructors to start by identifying the desired outcomes for their learners and by clarifying what students should know or be able to do by the end of a course or lesson. Educators should intentionally shape the content, activities and assessments that support those goals.

The session introduces the concept of backward design to develop clear and measurable learning objectives. Examine evidence-based teaching strategies for designing clear and measurable learning objectives by using Bloom's taxonomy to structure cognitive complexity and guide the development of progressively advanced skills. The session also discusses active learning strategies, while emphasizing practical ways to move beyond traditional lecture formats. Participants explore techniques that promote engagement, such as think-pair-share, case-based discussions and hands-on problem solving.

Finally, the session addresses assessment as a tool for understanding student learning. Participants consider a range of assessment methods – both formative and summative – that extend beyond standard multiple-choice questions. We also consider how to evaluate whether students are meeting learning objectives and how to design assessments that reflect real-world application.

Together, these components provide a roadmap for creating meaningful, student-centered learning experiences. While this is predominately focused on traditional education environments, therapists involved in fieldwork may find this content of interest, too.

Bridging Hand Therapy and Additive Manufacturing: Therapist-Led Innovation in Digital Orthotic Design

Zachary Schluger, MS, OTR/L, CHT

Additive manufacturing is increasingly explored in orthotic fabrication; however, much of the innovation is currently driven by engineers and industry rather than clinicians. This session examines how hand therapists can actively participate in and lead digital orthotic design while preserving the clinical reasoning that defines our specialty.

Participants will receive an overview of additive manufacturing as it relates to hand therapy, including various fabrication technologies and their respective advantages and limitations compared to traditional thermoplastic methods. Foundational principles of three-dimensional scanning and digital workflow considerations will be introduced, along with a general overview of software approaches used in orthotic design.

Mechanical and material factors, including rigidity, flexibility, structural behavior and print orientation, will be discussed in the context of clinical decision-making. Case examples will illustrate appropriate indications and realistic implementation strategies, highlighting when additive manufacturing may be most feasible, such as in chronic conditions or planned interventions, and when conventional fabrication remains preferable.

S201

S101

Barriers to integration, including cost, production time and learning curve challenges, will also be addressed. By translating established therapeutic principles into digital design language, this session aims to bridge the gap between traditional orthotic practice and emerging fabrication technologies, empowering therapists to contribute meaningfully to the future of orthotic innovation.

When the Elbow Gives Way: A Multidisciplinary Approach to Instability from Mechanism to Management

Olga L. Hincapie, PT, DPT, CHT

Nikki Parten, MOT, OTR/L, CHT, CEAS

Matthew Butler, MD

The elbow is the second most commonly dislocated joint in adults, yet elbow instability remains a challenging condition that requires thoughtful, coordinated care across disciplines. This session presents a comprehensive, multidisciplinary approach to elbow instability, integrating anatomy, biomechanics, injury mechanisms, surgical management and rehabilitation strategies.

A hand surgeon and certified hand therapists will guide attendees through the continuum of care, beginning with a review of the relevant anatomy and pathomechanics that contribute to elbow instability. Surgical decision-making and current operative techniques will be discussed, highlighting indications, goals of stabilization and implications for postoperative rehabilitation.

Rehabilitation principles will then be explored in depth, with emphasis on evidence-informed protocols, splinting strategies, protection versus mobilization and progression of motion and strengthening to optimize functional outcomes. Case studies will be woven throughout the session to illustrate clinical reasoning, common challenges and collaborative problem-solving between surgical and therapy teams.

Participants will gain a clearer framework for managing elbow instability from initial injury through recovery, with the shared goal of restoring stability, function and patient confidence.

S103

Non-surgical Management of Carpal Tunnel Syndrome: The 2026 Clinical Practice Guideline Update

Marsha Lawrence, PT, DPT, CHT

Mia Erickson, PT, CHT, EdD

In 2019, the Journal of Sports Physical Therapy published the clinical practice guideline entitled "Hand Pain and Sensory Deficits: Carpal Tunnel Syndrome. Clinical Practice Guidelines Linked to the International Classification of Functioning, Disability and Health." In 2022, we began research to update those guidelines based on evidence published since November 2018. This session presents the results of four years of evidence review, providing evidence-supported information to guide clinicians in examination, evaluation and diagnosis and non-surgical management for persons with suspected and confirmed carpal tunnel syndrome. Valid outcome measures are presented to assist in evaluating the efficacy of non-surgical symptom management and inform clinician and patient shared decision making for continuing or modifying non-surgical management or referring to other members of the extended medical team.

SATURDAY, OCTOBER 10 (CONTINUED)

GRAND BALLROOM B

Before the Pain Begins: Addressing a Gap in Prenatal Care to Prevent De Quervain's Tenosynovitis

Tina Dimopoulos, OTD, OTR/L, CHT

This instructional session will provide hand therapists with evidence-based strategies for the prevention and management of De Quervain's tenosynovitis, a common wrist and thumb overuse condition frequently referred to as "Mommy's Thumb." While new and expectant parents often receive extensive education on infant care, there are currently no structured, prevention-focused programs addressing the physical demands placed on the parent's own upper extremities, representing a significant gap in care. This session will focus on identifying biomechanical, ergonomic and occupational risk factors specific to the prenatal and postpartum periods and introduce early, preventative interventions aimed at reducing the risk of onset or exacerbation. Participants will learn practical strategies including ergonomic positioning during infant care tasks, joint protection techniques, activity modification and client education to support sustained functional hand use. The course highlights the essential role of hand therapy in bridging this gap through proactive, preventative care to reduce the chronicity of this condition for new and expectant parents.

9:00 AM – 9:15 AM

Transition Break

9:15 AM – 10:15 AM

Instructional Concurrent Session 9

1 CE Hour

GRAND BALLROOM A

Rewiring Function: A Hand Therapist's Role in Functional Neurological Disorder

Hannah Gift, OTR/L, CHT, COMT, CEAS

Functional neurological disorder (FND) is a frequently misunderstood condition that presents in both adult and pediatric hand therapy settings. Referrals may list "tremor," "weakness," or "abnormal upper extremity movement," yet FND demonstrates distinctive clinical features that differentiate it from structural neurological or orthopedic pathology.

This presentation will define FND with the current diagnostic framework and neurobiological model underlying the functional symptoms. Case examples will be used to compare FND presentations with peripheral nerve injury, movement disorders and other upper limb pathologies commonly encountered in hand therapy.

Attendees will explore the typical medical journey patients experience prior to referral to occupational or physical therapy, including the role of the multidisciplinary team in diagnosis and management. Practical evaluation strategies will be reviewed that support recognition of FND in the upper limb. The session will emphasize how assessment findings can directly inform treatment planning, with a focus on restoring functional movement. Treatment principles grounded in motor retraining, graded exposure, attention redirection and neuroscience education will be reviewed. Practical demonstrations will illustrate strategies to reduce symptom reinforcement and promote normalized movement patterns.

SATURDAY, OCTOBER 10 (CONTINUED)

S201

FND is a condition that clinicians may not immediately recognize, but one they are likely already encountering. Increased awareness and clinical confidence are essential for upper extremity providers to identify FND and implement appropriate, function-focused interventions. By shifting the lens from structural impairment to functional retraining, therapists can help patients move from disabling symptoms toward restored independence.

Load Progression in Upper Extremity Rehabilitation: Optimizing Strength, Function and Recovery

Mitchell Voss, PP-OTD, MBA, OTR/L

Sierra Rusch, OTR/L

Kari Becker, OTD, OTR/L

Load progression is a foundational principle of upper extremity rehabilitation, essential for restoring muscular strength, tendon capacity, neuromuscular control and functional tolerance. This session explores evidence-informed strategies for progressively increasing load across phases of recovery, emphasizing safe implementation, dosing, exercise selection and clinical reasoning. Progressive overload will be explored, along with how to determine when to progress patients to higher levels of strength-based activities to support their appropriate progression. Various treatment methodologies and modalities will be presented to the upper-extremity therapist. The session will explore various clinical and case scenarios, including how patients have been appropriately progressed and how the best course of progression was determined. They will learn how to apply load progressions to conditions such as rotator cuff injuries, instability, tendinopathy and post-operative cases of the elbow and hand.

S101

Surgeon and Therapist Management of PIP Dislocations

Gary Solomon, MBA, MS, OTR/L, CHT

William Dzwierzynski, MD

This session will explore physician non-operative and surgical management, and therapist management of digital dislocation/fracture dislocations, as well as strategies to restore range of motion and functional use.

S103

Bridging the Gap: Integrating Trauma-Informed Practice and Collaborative Resource Navigation in Upper Extremity Rehabilitation

Leslie Boone, OTR/L

Laura Abbott, MSE

Patients receiving upper extremity rehabilitation may be recovering not only from physical injury, but also from the effects of crime-related trauma. The physiological effects of trauma can influence pain perception, muscle tension, attention and participation in therapy. Without recognition of these influences, elements of engagement may be interpreted primarily through a musculoskeletal lens.

This session examines how integrating trauma-informed practice into upper extremity rehabilitation can strengthen clinical outcomes. Participants will review relevant physiology and its influence on pain and guarding, with direct application to hand therapy practice. Practical communication strategies and environmental adjustments will be discussed to support safety and resource awareness.

SATURDAY, OCTOBER 10 (CONTINUED)

GRAND BALLROOM B

In alignment with the 2026 ASHT Annual Meeting theme, the session will also explore how recovery may intersect with community-based advocacy services, counseling, compensation systems and ongoing legal processes. A clinical scenario involving a patient recovering from an upper extremity injury following interpersonal violence will illustrate how communication adjustments and awareness of external recovery factors may influence engagement and outcomes. Through guided discussion, participants will examine how these multifaceted dynamics can inform collaborative care.

Instruction will include brief focused lecture, a structured clinical scenario and facilitated audience discussion to promote application and analysis.

Hands at Work: Using Visual Art to Bridge Clinical Knowledge, Professional Identity and Advocacy in Hand Therapy

Fatima Adamu, MS, OTR/L, CHT

Hand therapy is grounded in precision and observation, yet much of our expertise remains invisible outside the clinic. This session explores how visual art; specifically anatomical and functional illustration can bridge clinical practice, education and advocacy in hand therapy. Drawing from combined experience as a Certified Hand Therapist and visual artist, the presenter demonstrates how small, everyday visual practices can amplify our collective voice, support clinical excellence and make the value of hand therapy more visible.

Aligned with the 2026 ASHT Annual Meeting theme, "Bridging the Gap: Collaborating and Amplifying Our Voices," participants will learn practical, accessible ways to integrate visual tools into treatment, mentorship, interdisciplinary collaboration and advocacy with no formal art training required.

10:15 AM – 10:45 AM

Coffee Break, Exhibit Hall & Posters

EXHIBIT HALL A

10:45 AM – 11:30 AM

Plenary Session 6 | Presidential Invited

.75 CE Hour

GRAND BALLROOM C/D

Learning to Pivot

Samantha Tadych

Prosthetic rehabilitation is rarely a straight path. In this session, the speaker will share their personal journey through the progression from TMR surgery and pre-prosthetic preparation to body-powered and ultimately myoelectric prosthetic devices. Through each phase, they will explore the challenges, adaptations and problem-solving required to develop proficient function and navigate the ongoing demands of prosthetic use.

The session will highlight specific devices, techniques and strategies that have proved particularly helpful throughout this progression, while emphasizing the importance of flexibility and creative problem-solving when faced with unexpected challenges. The presentation will conclude with a discussion of how the concept of "pivoting" extends

SATURDAY, OCTOBER 10 (CONTINUED)

beyond prosthetic training — particularly when navigating everyday activities and the community as a quadruple amputee. Attendees will gain insight into the lived experience of prosthetic rehabilitation and the importance of adapting, reassessing and finding new ways forward when the original plan doesn't work.

11:30 AM – 12:15 PM

Plenary Session 6 | Presidential Address

.75 CE Hour

GRAND BALLROOM C/D

Worth Advocating For

Danielle Sparks, DHS, MOT, OTR, CHT

Before you can advocate for anything, you have to believe it's worth advocating for. That includes your patients. Your profession. Yourself.

Join ASHT President Danielle Sparks, DHS, MOT, OTR, CHT, for her Presidential Address, "Worth Advocating For." She will unpack finding your why, owning your worth and turning small, everyday actions into lasting professional impact.

You are not "just" anything.

12:15 PM – 1:45 PM

Lunch, Posters & Exhibit Hall

EXHIBIT HALL A

12:30 PM – 1:30 PM

Lunchtime Sessions

S203

International Luncheon:

More Than a Fist Bump: Building Enduring Global Partnerships in Hand Therapy

Nathan Short, PhD, OTR/L, CHT, FAOTA

S102

Student Meet-Up

12:30 PM – 1:00 PM

Rolyan in Practice: Clinical Pearls for Successful Orthotic Fabrication

S202 C

Hands-on Demo by Performance Health

Bruce Curtis, OT

1:00 PM – 1:30 PM

Partial Finger & Partial Hand Loss Prosthetic Interventions

GRAND BALLROOM B

Hands-on Demo by Össur

Kristy Powell, OTR/L

SATURDAY, OCTOBER 10 (CONTINUED)

1:45 PM – 2:45 PM

Scientific Session 2

1 CE Hour

GRAND BALLROOM C/D

Assessing Change in Patient Outcomes Between Pre- and Post-Operative Thumb Carpometacarpal Arthroplasty: A Retrospective Study

Brooke Bossert, OTD, OTR/L

AI-Based Dynamic Hand Tracking Using Augmented Reality and MediaPipe for Assessment of Hand Range of Motion: A Validation Study

Gayathri Boopathy

Hand Therapy Clinical Documentation: Examination of Processes and Materials via Clinician Interviews

Katherine J. Loomis, PhD, OTR/L, CHT

Early Return to Climbing Following Flexor Pulley Injury Using a Standardized Pulley Ring Orthosis and Functional Rehabilitation Protocol

Mitzi Harrison, PT, CHT

Effect of Prefabricated Orthoses on Pain and Weight-Bearing Capacity for Conservatively Managed Triangular Fibrocartilage Complex Injuries: A Pilot Study

David Plutschack, OTD, BCPR, CLT

Clinical Utility and Feasibility of Remote 3D-Printed Orthoses Using Heat-Reshapeable PCL in Thumb CMC Osteoarthritis: A Randomized Crossover Pilot Study

Maryam Farzad, Bsc, Msc, PhD

Hand Therapy Assessment and Clinical Treatment of Proximal Interphalangeal Joint Flexion Contractures: A Modified Delphi Project

Ricky Altahif, OTD, OTR, CHT

Certified Hand Therapists' Perceptions of the Impact and Implications of Psychosocial Factors on Patients with Complex Traumatic Hand Injuries: A Descriptive Qualitative Approach

Noah Elfar

Graded Motor Imagery Following Non-Operative Distal Radius Fractures: A Pilot Comparative Effectiveness Trial

Corey McGee, PhD, MS, OTR/L, CHT, FAOTA

2:45 PM – 3:30 PM

Plenary Session 8 | Incoming Presidential Address, Named Awards & Closing

0.75 CE Hours

GRAND BALLROOM C/D

Beyond the 'Upper Extremity' Diagnosis: A Whole-Person Approach to Recovery

Kim McVeigh, MBA, OTR/L, CHT, FACHE

Named Awards

Closing Remarks

Danielle Sparks, DHS, MOT, OTR, CHT

Rachel Pigott, MPH, BSOT

3:30 PM – 4:00 PM

Coffee Break

SATURDAY, OCTOBER 10 (CONTINUED)

4:00 PM – 5:00 PM

Instructional Concurrent Session 10

1 CE Hour

GRAND BALLROOM A

S101

Clinical Practice Poster Spotlight 2

David Plutschack, OTD, BCPR, CLT
Hannah Gift, OTR/L, CHT, COMT, CEAS
Debra Sturm, MSOTR, OTD, CHT, CLT

This session will spotlight several of the Clinical Practice Posters presented at this year's Annual Meeting. Presentations of interesting cases and novel treatment or educational approaches will be followed by time for discussion and audience questions. Come to learn, innovate and collaborate.

Battling the Evils of Scapular Depression!

Ann K. Porretto-Loehrke, PT, DPT, CHT, COMT, CMTPT
Jim Wagner, OTD, OTR/L, CHT, COMT, CSCS

Modern life has made us increasingly sedentary – and with that comes the growing impact of gravity pulling us down. Scapular depression can create downward traction on the brachial plexus, reduce subacromial space for the rotator cuff, and contribute to persistent neck pain.

This session will focus on evaluating resting scapular position and assessing dynamic scapular control, and provide attendees with practical, easy-to-apply treatment techniques designed to restore optimal alignment and function.

Attendees will learn the difference targeted scapular intervention can make. Whether you primarily treat hand patients or shoulder conditions, this presentation offers valuable insights you can immediately integrate into your clinical practice.

S103

Multimodal Approach to Brachial Plexus Injury Recovery

Jordan Bradford, OTD, OTR/L, CHT

Brachial plexus injuries (BPI) present some of the most complex and uncertain rehabilitation trajectories in hand therapy. In this instructional session, participants will follow a two-year case study that serves as a clinical roadmap for a patient with a complex BPI who underwent a free functional gracilis muscle transfer to restore elbow flexion. Using a structured clinical timeline, the session will illustrate rehabilitation principles across multiple phases of recovery, including postoperative protection, transfer activation and progressive neuromotor and functional training.

Attendees will gain an overview of upper extremity surgical options for complex BPI and explore the tenets that guide rehabilitation after free functional muscle transfer, with emphasis on cortical retraining and facilitating volitional activation of a newly innervated muscle. Multimodal interventions – including neuromuscular electrical stimulation for home use, orthotic management, functional capacity evaluation, aquatic therapy and emerging technologies such as the Zimmer emFieldPro – will be integrated within current evidence and clinical reasoning to demonstrate how they support functional progression. The session will also address strategies to promote long-term adherence over a prolonged recovery trajectory, highlighting patient-centered decision-making and interprofessional communication to translate complex reconstruction into functional outcomes when no standardized rehabilitation roadmap exists.

SATURDAY, OCTOBER 10 (CONTINUED)

GRAND BALLROOM B

From Elegant Systems to Cluttered Workflows: How Technology Either Supports or Undermines Hand Therapy

Alex Bendersky, PT, DPT

This instructional session examines how technology shapes the real-world workflows of hand therapy and how digital systems can either support clinical expertise or quietly disrupt it. While upper extremity rehabilitation is inherently complex, much of today's strain stems from the technology layered around care rather than from patient complexity itself.

The session focuses on how electronic medical records, clinical decision support, outcome platforms, wearable data, automation and digital communication tools influence daily practice. Participants will explore how template design, interoperability gaps and documentation logic affect clinical reasoning, time use and collaboration.

Real-world scenarios will highlight common friction points, such as excessive clicks, duplicative documentation, rigid templates, disconnected outcome tracking and reporting requirements that divert attention from patients. These examples will be examined using a framework that distinguishes productive clinical complexity from unnecessary technological complication.

Interactive polling and case-based workflow mapping will help participants identify inefficiencies in their own settings and consider practical improvements. Attendees will leave with clear criteria for evaluating and advocating for technology that aligns with clinical care, protects professional judgment and supports resilient practice.

5:00 PM – 5:15 PM

Transition Break

5:15 PM – 6:15 PM

Instructional Concurrent Session 11

1 CE Hour

GRAND BALLROOM A

When It's Not Carpal Tunnel, Look Proximal

Cassandra Schuh, OTR, CHT, COMT, CMTPT

This session will focus on strategies for hand therapists to learn and apply hands-on evaluation and treatment techniques of the upper quadrant when nerve compression appears to be more proximal. This session will describe three main passageways that can be involved with upper quadrant compression, discuss cervical and thoracic spine segmental mobility, review common soft tissue culprits related to upper quadrant limitations and then perform a clinical examination: Roos test (elevated arm stress test), Cyriax release test, thoracic segmental mobility. Leave this course with confidence and an algorithm to bring back to your clinic to evaluate the kinetic chain when your patient comes in with a diagnosis of carpal tunnel.

SATURDAY, OCTOBER 10 (CONTINUED)

S201

Hand & Upper Extremity Wound Evaluation: A Pathway to Evidence-Informed Decision Making

Nora E. Barrett, MS, OTR/L, CHT, WCC L

This session equips occupational and physical therapists with a focused, therapy-relevant approach to assessing hand and upper extremity wounds to guide intervention including debridement and to prescribe dressings that support function, protection of healing structures, expeditious wound healing and the ability to efficiently progress rehabilitation. Participants will integrate wound bed and periwound assessment, vascular status, pain, functional impact and patient goals with current guidelines. The session combines brief evidence synthesis, wound photograph interpretation and case vignettes. By the end of the session, therapists will perform systematic wound evaluations, make defensible treatment or referral decisions and design patient centered plans that align with rehabilitation goals.

S101

Optimizing Functional Outcomes When Nerve Transfers Go Awry

Lorna C. Kahn, PT, CHT

Juliana Larocerie, OT, MSC, CHT

Alexandra MacKenzie, OTR/L, CHT, CLT

Nerve transfer rehabilitation is often complex and progresses in a nonlinear fashion. When recovery does not progress as expected, therapists play a pivotal role in recognizing complications and adjusting care. However, there are often limited resources available to guide the therapeutic management of suboptimal outcomes.

This case-based session will provide therapists with practical strategies to optimize the recovery of patients experiencing suboptimal outcomes. Speakers will review and discuss patient selection criteria, surgical algorithms and therapeutic management strategies that influence rehabilitation and clinical outcomes. Our experienced panel will share treatment pearls and clinical insights for managing challenging cases. The session will conclude with an interactive Q&A, encouraging attendees to present and discuss their own difficult cases.

S103

Ehlers Danlos Syndrome and the Upper Extremity: Bridging Surgical and Therapeutic Care

Hershila Lallu, OTD, OTR/L, CLT

Jennifer S. Kargel, MD

This session presents a multidisciplinary approach to managing upper extremity manifestations of hypermobility spectrum disorders (HSD) and Ehlers-Danlos Syndromes (EDS). Patients often experience pain, recurrent instability, fatigue and functional decline that challenge traditional rehabilitation and surgical models. Because strengthening alone does not address cumulative micro-instability, coordinated surgical and therapeutic strategies are critical.

Using a case-based format from a multidisciplinary hypermobility clinic, this session integrates surgical and rehabilitation perspectives. Surgical content will review connective tissue considerations, indications for stabilization procedures and postoperative expectations. Rehabilitation content will emphasize motor control retraining, orthotic intervention, adaptive equipment, autonomic conditioning, endurance training and load management to protect joint integrity.

Through guided discussion and clinical scenarios, participants will compare conservative and surgical approaches and explore strategies that enhance interdisciplinary communication and continuity of care.

SATURDAY, OCTOBER 10 (CONTINUED)

GRAND BALLROOM B

Collaborate and Amplify: Elevating Hand Therapy's Community Presence

Jane Fedorczyk, PT, PhD, CHT, FAPTA

Mary Whitten, DHSc, MOT, OTR, CHT

Hand therapy is the art and science of rehabilitation of the upper limb, which includes the hand, wrist, elbow and shoulder girdle as defined by the Hand Therapy Certification Commission. It's well known within hand therapy that Certified Hand Therapists enter practice as an occupational or physical therapist. Despite specialization, we retain the foundations of PT/OT practice to restore function and participation. Hand therapy professionals know their value, but the communities they serve may not.

Moving beyond the traditional clinic with therapy practitioners sharing their expertise with community organizations, local businesses and government work groups allows them to demonstrate their value. Traditionally, fitness events were emphasized, but hand therapy professionals are uniquely trained to improve participation within any environment. Many activities involve equipment with the hands and upper limbs in various positions such as gardening and yoga. Engaging in outreach to facilitate inclusion demonstrates the profession's commitment to community well-being.

While engaging in community activities that foster health, happiness and unity is wonderful, there are times when local communities depend on therapy professionals for support. During gray skies such as hurricanes, the most vulnerable community members, as defined by the social determinants of health, require assistance for short- and long-term recovery to avoid negative health impact. When local governments review and update disaster management plans, hand/upper limb function may be overlooked compared to other special needs. Individuals with hand/ upper limb dysfunction face many challenges opening non-perishable food packages and performing disaster clean-up. Hand therapy professionals that contribute expertise to community groups will empower shelters and volunteers to meet the comprehensive needs of vulnerable community members impacted by disaster.

Community engagement is also a marketing tool, but working collaboratively with others will improve well-being and facilitate recovery when disaster strikes. The hand therapy value will be evident and viewed as essential to the community.

6:15 PM – 6:30 PM

Transition Break

6:30 PM – 7:30 PM

AHTF Happy Hour with a Scholar (ticketed event)

1 CE Hour

S102

Nerve Injury and Nerve Compression: Insights from a Clinical Researcher

Christine B. Novak, PT, PhD

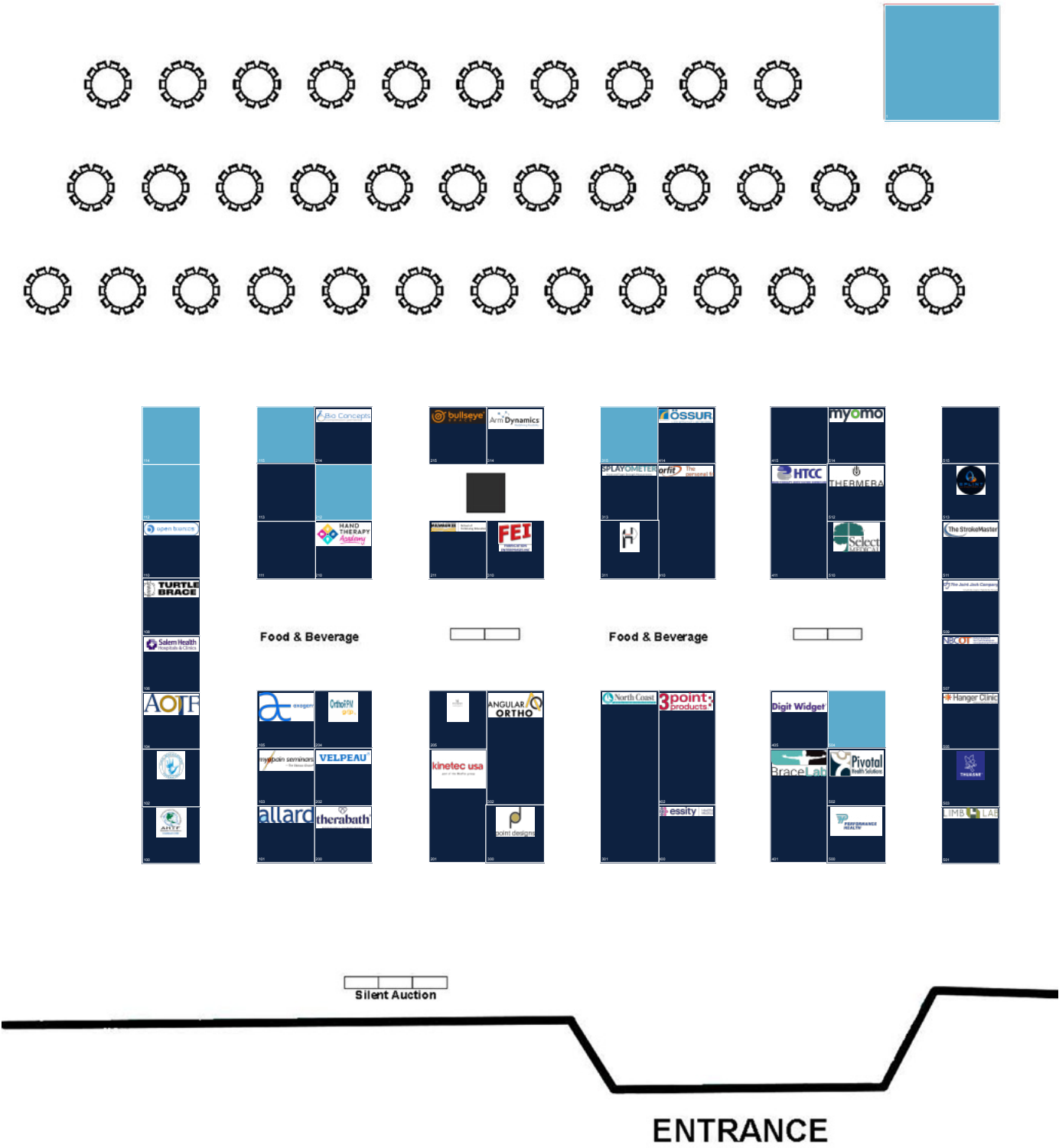
Patients with nerve injury or nerve compression present with variable sensorimotor impairments, which can contribute to functional limitations and disability. From the lens of a career as a physical therapist and clinical researcher, this lecture will present an overview of the advances in the assessment and management of patients with nerve injury and nerve compression through clinical research, patient engagement and collaboration.

SCHEDULE AT A GLANCE



	WEDNESDAY, OCTOBER 7	THURSDAY, OCTOBER 8		FRIDAY, OCTOBER 9	SATURDAY, OCTOBER 10
6:00	 Pediatric Specialty Day (Ticketed Event) 7:45 AM - 6:00 PM (6.75 CE Hours)				
6:15					
6:30					
6:45					
7:00					
7:15				Let's Be New Together Breakfast 7:00 AM - 7:45 AM	
7:30					
7:45	Welcome	4-Hour Pre-Conference Institute (Ticketed Event) 7:30 AM - 11:30 AM (4 CE Hours)	2-Hour Pre-Conference Institutes (Ticketed Event) 7:30 AM - 9:30 AM (2 CE Hours)		
8:00	General Topics 8:00 AM - 9:00 AM			Instructional Concurrent Session 4 8:00 AM - 9:00 AM (1 CE Hour)	Instructional Concurrent Session 8 8:00 AM - 9:00 AM (1 CE Hour)
8:15					
8:30					
8:45	Congenital Topics 9:00 AM - 10:00 AM			Transition Break 9:00 AM - 9:15 AM	Transition Break 9:00 AM - 9:15 AM
9:00					
9:15					
9:30	Coffee Break 10:00 AM - 10:30 AM		2-Hour Pre-Conference Institutes (Ticketed Event) 9:45 AM - 11:45 AM (2 CE Hours)	Instructional Concurrent Session 5 9:15 AM - 10:15 AM (1 CE Hour)	Instructional Concurrent Session 9 9:15 AM - 10:15 AM (1 CE Hour)
9:45					
10:00					
10:15	10:30 AM - 11:30 AM Tips and Tricks		Coffee Break, Exhibit Hall & Posters 10:15 AM - 10:45 AM	Coffee Break, Exhibit Hall & Posters 10:15 AM - 10:45 AM	
10:30					
10:45					
11:00	Lunch 11:30 AM - 12:30 PM	Lunch (On Your Own) 11:45 AM - 12:30 PM	Scientific Session 1 10:45 AM - 11:45 AM (1 CE Hour)	Plenary Session 6 Presidential Invited 10:45 AM - 11:30 AM (.75 CE Hour)	
11:15					
11:30					
11:45		Lunch (On Your Own) 11:30 AM - 12:30 PM	Plenary Session 2 Practice and Advocacy 11:45 AM - 12:15 PM (.5 CE Hour)	Plenary Session 7 Presidential Address 11:30 AM - 12:15 PM (.75 CE Hour)	
12:00					
12:15					
12:30	12:30 PM - 1:15 PM Keynote Address	Instructional Concurrent Session 1 12:30 PM - 1:30 PM (1 CE Hour)	Lunch, Posters & Committee Meetings 12:15 PM - 1:45 PM HTCC: Preparing for the CHT Exam (1 CE Hour) Leadership Poster Presentation (1 CE Hour) Research Community Lunch Division & Committee Mtgs: Outreach, Practice	Lunch, Posters & Committee Meetings 12:15 PM - 1:45 PM International Committee Lunch (1 CE Hour) Student Meet-Up Gavel Club Division & Committee Mtgs: Leadership Development, Research, Education	
12:45					
1:00					
1:15	Instructional Concurrent Session 1 1:15 PM - 2:15 PM	Transition Break 1:30 PM - 1:45 PM	Plenary Session 3 International Invited 1:45 PM - 2:30 PM (.75 CE Hour)	Scientific Session 2 1:45 PM - 2:45 PM (1 CE Hour)	
1:30					
1:45					
2:00	Transition Break 2:15 PM - 2:30 PM	Instructional Concurrent Session 2 1:45 PM - 2:45 PM (1 CE Hour)	Plenary Session 4 Nathalie Barr Award Lecture 2:30 PM - 3:15 PM (.75 CE Hour)	Plenary Session 8 Incoming Presidential Address, Named Awards and Closing Remarks 2:45 PM - 3:30 PM (.75 CE Hour)	
2:15					
2:30					
2:45	Instructional Concurrent Session 2 2:30 PM - 3:30 PM	Transition Break 2:45 PM - 3:00 PM	Plenary Session 5 AAHS Vice President 3:15 PM - 3:45 PM (.5 CE Hour)	Coffee Break 3:30 PM - 4:00 PM	
3:00					
3:15					
3:30	Coffee Break 3:30 PM - 3:45 PM	Instructional Concurrent Session 3 3:00 PM - 4:00 PM (1 CE Hour)	Coffee Break, Exhibit Hall & Posters 3:45 PM - 4:15 PM	Instructional Concurrent Session 10 4:00 PM - 5:00 PM (1 CE Hour)	
3:45					
4:00					
4:15	3:45 PM - 4:45 PM Neuro Topics	Coffee Break 4:00 PM - 4:30 PM	Instructional Concurrent Session 6 4:15 PM - 5:15 PM (1 CE Hour)	Transition Break 5:00 - 5:15 PM	
4:30					
4:45					
4:45	Closing Remarks 4:45 PM - 5:00 PM	Welcome to ASHT 2026! 4:30 PM - 5:00 PM	Transition Break 5:15 PM - 5:30 PM	Instructional Concurrent Session 11 5:15 PM - 6:15 PM (1 CE Hour)	
5:00					
5:15					
5:30	Reception 5:00 PM - 6:00 PM	Plenary Session 1 Opening Panel 5:00 PM - 7:00 PM (2 CE Hours)	Instructional Concurrent Session 7 5:30 PM - 6:30 PM (1 CE Hour)	Transition Break 6:15 - 6:30 PM	
5:45					
6:00					
6:15				AHTF Happy Hour with a Scholar (Ticketed Event) 6:30 PM - 8:00 PM (1 CE Hour)	
6:30					
6:45					
7:00					
7:15					
7:30					
7:45					
8:00					
8:15					
8:30					
8:45	Welcome Reception & Poster Session 7:00 PM - 9:00 PM		Conference Party (Ticketed Event) 7:30 PM - 10:30 PM		
9:00					
9:15					
9:30					
9:45					
10:00					
10:15					

FLOOR PLAN



CLINICAL PRACTICE POSTERS

Clinical practice posters are non-research posters that can highlight a clinical innovation, a complex case, a knowledge translation or clinical implementation story. Clinical practice posters can be viewed on site on the kiosks in the Exhibit Hall or through the ASHT on-demand platform. Additionally, several clinical practice posters will be highlighted at two spotlight sessions on Friday from 5:15 PM to 6:15 PM and Saturday from 3:45 PM to 4:45 PM.

Improving Upper Extremity Awareness and Function: Considerations for Modified Constraint Induced Movement Therapy

Amy Sitabkhan, OTR, OTD

Early Mobilization and Physiotherapy Techniques for Addressing Complications in High-TBSA Upper Extremity Burns: From Acute Care to Functional Independence - A Case Study

Ho Wing Kelvin Fung, PT, CHT

Caring for Pediatric Clients with Arthrogryposis Multiplex Congenita: The Development of an Occupational Therapy Continuing Education Course

Amy Sitabkhan, OTR, OTD

Integrating Blood Flow Restriction as an Innovative Approach to Upper Extremity Rehabilitation

Richard Rodriguez, OTD

The Use of Blood Flow Resistance Exercises in the Treatment of DeQuervain's Tenosynovitis

Steven Sorensen, PT

The Helping Hand: Enhancing Hand Therapy Education Through Cadaveric and Video-Based Learning Among Entry-Level Therapy Students

Blayne Townsend, OTR, OTD

Dry Needling Knowledge in the Field of Occupational Therapy

Alexander Richey, PTA

Integrating Artificial Intelligence in the OT Classroom to Enhance Hand Therapy Education

David Plutschack, OTD, CLT

Enhancing Upper Extremity Rehabilitation Through Remote Therapeutic Monitoring (RTM): Innovations and Applications

Jessie Perchaluk, OTD, MS, OTR/L, CHT, CLT

Addressing Psychosocial Needs for Adults with Traumatic Upper Extremity Injuries and Pain Through a Four-Week Activity Group

Julia Laughlin, OTD

Identification, Triage, and Treatment of Upper Extremity Pain and Edema Frequently Impacting Pregnant and Postpartum Women

Ella Schnepf, OTR/L

Integrating Upper Extremity Rehabilitation in Occupational Therapy and Physical Therapy Curricula for Comprehensive Excellence

Sharniece Pierce, OTD, OTR/L, CLT-UE, CEAS, CSC, CPT, CAFS, CKTP, MFDC, AIB-VR/CON, LSVT BIG Certified

Digit Widget: Exploring the Impact of Wear Time on PIP Extension Outcomes - A Retrospective Case Study

Eugene Gersh, OTR/L, CHT

Teaching Therapy Students Clinical Reasoning Skills

Gwen Morris, PhD, OTD, OTR, CHT, CLT

A Novel Method to Quantify Thumb Stability During Pinch

Nicole Hoover, MS, OTR, CHT

Functional Neurological Disorder Explained: Recognizing Functional Behavior

Hannah Gift, OTR/L, CHT, COMT UE, CEAS

Educating the Educator: Exploring Communication, Learning, and Teaching Styles to Promote Successful Fieldwork Opportunities

Emilia Pollnow, MS, OTR/L, CHT

Orthosis Online: A Tool Connecting Therapists to Clinical Orthosis Application

Hayley Brown, Physiotherapist, CHT

Standardized Hand Therapy Elective Course for Students Interested in a Level II Placement

Adrienne Tesarek, OTR/L, CHT

Sustaining a Volunteer Hand Clinic in the Navajo Nation

Tauni Bird, OTD, OTR/L

Development of a Pediatric Hand Therapy Fieldwork II Curriculum

Jessica Knapp-Johnson, MOT, OTR/L, CHT

Considerations and Resources for Managing Burnout with Specialized Practitioners in Rural Hospitals

Elizabeth Allstadt, MS, OTR/L, CHT

Teaming Up: Utilizing Microsoft Teams to Improve Intraorganizational Communication Between Therapists

Courtney Wood, OTR/L, CHT

Multidisciplinary Clinics: Enhancing Patient Outcomes with Advanced Therapy Practitioners

Sarah Johnson, OTR/L

Building Competencies and Confidence: Expanding Learning Pathways in Pediatric Hand Therapy

Heather Hopkins, MA, OTR/L, CHT

How Can Clinical Instructors Leverage Emotional Intelligence Assessments and Personality Profile Results to Improve Student Fieldwork Experiences and Performance?

Sarah Whitworth, OTR, OTD, CHT

Leading Change: Integrating Prehabilitation Before Elective Upper Extremity Surgery

Tondalaya Brainard, DrOT, CHT, CLT

Cultivating Inclusive Leadership in Hand Therapy: Supporting Underrepresented Students

Sharniece Pierce, OTD, OTR/L, CLT-UE, CEAS, MFDC, CKTP, CSC, CPT, AIB-VR/CON, LSVT BIG CERTIFIED

Upholding Cultural Humility in Hand Therapy: Advancing Professional Excellence, Elevating Patient Satisfaction and Improving Health Outcomes in a Culturally Diverse World

Eric J. Grispo, OTD, OTR/L, CHT, CWT

EXHIBITOR DIRECTORY

3-Point Products **GOLD SPONSOR**

www.3pointproducts.com

BOOTH: 402

A Stoopid Good World

www.astoopidgoodworld.com

BOOTH: 515

Allard USA **SILVER SPONSOR**

www.allardusa.com

BOOTH: 101

American Hand Therapy Foundation/AHTF

SILVER SPONSOR

www.ahtf.org

BOOTH: 100

American Occupational Therapy Foundation

www.aotf.org

BOOTH: 104

Angular Ortho **SILVER SPONSOR**

www.angularortho.com

BOOTH: 302

Arm Dynamics

www.armdynamics.com

BOOTH: 314

Axogen **GOLD SPONSOR**

www.axogeninc.com

BOOTH: 105

Bio-Concepts, Inc. **SILVER SPONSOR**

www.bio-con.com

BOOTH: 214

BraceLab **SILVER SPONSOR**

www.bracelab.com

BOOTH: 401

BSN Medical an Essity Company **GOLD SPONSOR**

www.essityusa.com

BOOTH: 400

Bullseye Brace, Inc.

www.bullseyebrace.com

BOOTH: 215

Fabrication Enterprises, Inc

www.fab-ent.com

BOOTH: 310

EXHIBITOR DIRECTORY

Hand Biomechanics Lab **SILVER SPONSOR**

www.handbiolab.com

BOOTH: 405

Hand Rehabilitation Foundation

www.handfoundation.org

BOOTH: 102

Hand Therapy Academy

www.handtherapyacademy.com

BOOTH: 210

Hand Therapy Certification Commission **GOLD SPONSOR**

www.htcc.org

BOOTH: 411

Hanger Clinic

www.hangerclinic.com

BOOTH: 505

Joint Jack Company

www.jointjack.com

BOOTH: 509

Kinetec USA, Inc. **GOLD SPONSOR**

www.kinetecusa.com

BOOTH: 201

Limb Lab

www.limblab.com

BOOTH: 501

Metric Devices, makers of the Splayometer

www.metricdevices.com

BOOTH: 31

Myomo, Inc.

www.myomo.com

BOOTH: 514

Myopain Seminars

myopainseminars.com

BOOTH: 103

National Board for Certification in Occupational Therapy

www.nbcot.org

BOOTH: 507

Newmedical Technology Inc.

www.silagen.com

BOOTH: 111

EXHIBITOR DIRECTORY

North Coast Medical **PLATINUM SPONSOR**www.ncmedical.com**BOOTH: 301**

Open Bionicswww.openbionics.com**BOOTH: 110**

Orfit **SILVER SPONSOR**www.orfit.com**BOOTH: 410**

OrthoRPM **SILVER SPONSOR**www.ortho-rpm.com**BOOTH: 204**

Össur **SILVER SPONSOR**www.ossur.com/en-us**BOOTH: 414**

Össurwww.ossur.com**BOOTH: 415**

Performance Health **SILVER SPONSOR**www.performancehealth.com**BOOTH: 500**

Photon Medicswww.photonmedics.com**BOOTH: 113**

Pillet Hand Prostheseswww.pillet.com**BOOTH: 311**

Pivotal Health Solutionswww.pivotalhealthsolutions.com**BOOTH: 502**

Point Designswww.pointdesigns.com**BOOTH: 300**

Salem Health Hospitals and Clinicswww.salemhealth.org**BOOTH: 106**

Select Medicalwww.selectmedical.com**BOOTH: 510**

EXHIBITOR DIRECTORY

Silver Ring Splint Company

www.selectmedical.com

BOOTH: 205

Splint Factory Corp.

<https://splintfactory.com/>

BOOTH: 513

StrokeMaster® by Getagrip LLC

www.strokemastergolf.com

BOOTH: 511

Therabath Professional Paraffin Products

www.therabath.com

BOOTH: 200

Thermera: The Heated Thumb Brace

www.thermerabrake.com

BOOTH 512

Thuasne

thuasneusa.com

BOOTH: 503

Turtlebrace

www.turtlebrace.co

BOOTH: 108

**University of Wisconsin - Milwaukee,
School of Continuing Education**

<https://bit.ly/4gvRO70>

BOOTH 211

VELPEAU

www.velpeau.com

BOOTH: 202

ASHT PROGRAM CODE OF CONDUCT

All ASHT events aim to be inclusive of the largest number of contributors, with the most varied and diverse backgrounds possible. As such, ASHT is committed to providing a professional, collegial, safe, supportive and respectful meeting environment (virtual and face-to-face), regardless of a person's race, color, ethnicity, national origin, citizenship status, age, religion, disability status, gender, gender identity, sexual orientation, genetic information, physical appearance or other characteristics ("personal characteristics"). ASHT expects individuals to uphold the professional and educational purposes of ASHT and its events by respecting the rights, privacy, safety and dignity of all persons. ASHT expects individuals to exercise professionalism, consideration and respect in their speech and actions. ASHT expects individuals to refrain from harassing speech and other harassing behavior

SCOPE AND APPLICATION

The Program Code of Conduct and this Policy apply to any virtual gathering or in-person event that is hosted or sponsored by ASHT, including but not limited to virtual educational symposia, exhibits, committee meetings, written comment and discussion groups, professional gatherings and platforms and setting ancillary thereto (each an "ASHT Event"). This Policy applies to any and all participants in ASHT Events, including but not limited to employees, members, volunteers, guests, vendors, contractors, exhibitors, faculty and other attendees (each a "Participant").

UNACCEPTABLE BEHAVIOR

Unacceptable behavior is defined as:

- Unwelcome and uninvited attention or contact with another Participant;
- Verbal or written comments, or visual images, that are sexually suggestive, or that denigrate or show hostility or aversion toward an individual, or group of individuals, or that create an intimidating, hostile or offensive environment, or that unreasonably interfere with an individual's ability to participate in the ASHT Event;
- Unwelcome sexual advances, requests for sexual favors, or other unwelcomed physical, verbal, visual, or other conduct of a sexual nature;
- Inappropriate, unnecessary, or irrelevant use of nudity and/or sexual images;
- Intimidating, harassing, abusive, defamatory, profane, discriminatory, derogatory or demeaning speech;

- Harmful or prejudicial verbal or written comments or visual images related to personal characteristics;
- Deliberate intimidation or stalking;
- Harassing photography or recording;
- Sustained or repeated disruption of talks or other events;
- Express or implied threat of physical or professional harm;
- Actual or threatened personal or professional retaliation for a rejection or report of unacceptable behavior;
- Failing to stop unacceptable behavior when requested by a Participant or ASHT.

REPORTING UNACCEPTABLE BEHAVIOR

Any Participant whose safety is threatened or violated is urged to contact local law enforcement immediately. In addition, any Participant who feels unsafe or experiences unwelcome conduct, who observes or experiences unacceptable behavior, or who believes there has been a violation of this Policy, is encouraged to come to the registration desk immediate to report this violation to a member of the ASHT Staff, or send an email to meetings@asht.org or call (856) 380-6851.

CONSEQUENCES OF REPORTED UNACCEPTABLE BEHAVIOR

Upon receiving a report of unacceptable behavior, ASHT's first priority will be the safety and security of Participants. In order to preserve a safe, educational environment, ASHT reserves the right to remove a Participant from an ASHT Event, suspend or terminate specific features available to a Participant or to suspend or terminate the Participant's entire account. In addition, ASHT reserves the right to prohibit Participant attendance at any future ASHT Event.

Violation of this Policy, as determined by ASHT in its sole discretion, is grounds for any action that ASHT deems appropriate, including but not limited to warning the offender, denying the offender access to an ASHT Event (including revoking or denying registration to an ASHT Event), suspending or terminating the offender's access to the ASHT Event, and barring the offender from other ASHT Events. ASHT reserves the right to take whatever action it, in its sole discretion, deems appropriate, with respect to the investigation of any matters related to this Policy.

Any person who is denied access to or whose access is terminated during an ASHT Event based on this Policy may request that ASHT review the matter after the ASHT Event has concluded. However, ASHT's action will be effective immediately and will continue until and unless ASHT issues a contrary decision. Unless a contrary decision is issued, any person who is

denied access to or removed from an ASHT Event based on this Policy will not be eligible for a refund of any registration fees paid for access to or participation in the ASHT Event. By registering for an ASHT program (virtual or in-person), you acknowledge your registration is subject to ASHT's Program Code of Conduct Policy. If you have any questions regarding this policy or attendee conduct, please contact meetings@asht.org or asht@asht.org.

ANTITRUST AVOIDANCE

United States antitrust law is a collection of federal and state government laws, which regulates the conduct and organization of business corporations, generally to promote fair competition for the benefit of consumers. Antitrust law prohibits the exchange of information among competitors or collusive practices that would minimize competition or result in the restraint of trade.

14.2.1 Potential Areas for Antitrust Violation

- pricing of services
 - surveys • membership exclusion or expulsion
 - product standards
 - code of ethics
 - standard setting
 - articles, publications, website
 - discussion forums • meetings, speakers
 - certification • tradeshow and advertising exclusion
 - referrals and recommendations
 - discount programs
- To ensure that the Society and its members comply with antitrust laws, the following principles will be observed:
- The Society or any division, committee, task force or activity of the Society shall not be used for the purpose of bringing about or attempting to bring about any understanding of agreement, written or oral, formal or informal, expressed or implied, among two or more members or other competitors with regard to prices or terms and conditions of contracts for services or products. Therefore, discussions and exchanges of information about such topics will not be permitted at Society meetings or other activities.
 - There will be no discussions discouraging or withholding patronage or services from or encouraging exclusive dealing with any supplier or purchaser or group of suppliers or purchasers of products and services, any actual or potential competitor or group of actual potential competitors, or any private or governmental entity

Submission ID: 2388353

UPDATING NORMATIVE DATA OF THE COMPLETE MINNESOTA DEXTERITY TEST

Author(s): Natalie Harper, George Washington University; Sarah Doerrer, George Washington University; Brandon Powers, West Virginia University; Jacqueline Reese Walter, Jacksonville University

PURPOSE

Current CMDT normative data cited in the test's manual is derived from a 1957 study with a largely homogeneous sample of unemployed adults with a median age of 19. This data has not been updated since that study was published. Individual's lifestyles and occupational demands have changed significantly since 1957. Therefore, there is a need for updated normative data to reflect these modern changes. The purpose of this study is to update reference data for the CMDT to reflect the general adult population.

METHODS

This is a normative study design. 100 participants were recruited using convenience and snowball sampling in the Washington, DC area. Participants were included if they were over 18, understood English, could stand for the duration of the test, and were free of injuries or conditions affecting the upper extremity or low back. The primary dependent variable was the completion time (seconds) for each of the five subtests. Participants were categorized into 6 age groups: 18-30, 31-40, 41-50, 51-60, 61-70, and 71+. Descriptive statistics were used to report subject demographics and to examine the means and standard deviations of completion time across the 6 age groups. Data was assessed for normality using the Shapiro-Wilk test. Mann-Whitney U tests were used to examine differences between groups.

RESULTS

99 participants were included in the final data analysis after 1 subject was removed due to difficulty executing the steps required for each subtest. 53.5% of the sample population fell into the 18-30 age group. 69% of participants were female, and 86% were right-hand dominant. The primary occupation was student, making up 50.5% of the sample, and sports/fitness activities were the most frequent leisure interest at 33.3% (See Table 1). Means and standard deviations of time (seconds) to complete each subtest are shown in Table 2 and illustrated in Figure 1. The Shapiro-Wilk test showed non-normality of data. Nonparametric Mann-Whitney U tests showed that gender and handedness did not have a significant effect on subtest performance in the entire sample, excluding 2 ambidextrous subjects due to the small sample size (Tables 3-4).

CONCLUSION

This study is one phase of an ongoing, collaborative project across three universities, which has an overall sample size of 1140 participants. The data from this study represents the first 100 subjects collected from the Washington, DC area. These results contribute to the overall goal of updating the normative values of the CMDT to better reflect the general population. The primary finding of this study was that the mean completion time for each subtest increased across age groups, suggesting a decline in manual dexterity with age. This result is consistent with correlations between aging and the natural loss of sensation, strength, and range of motion, as well as the slowing of cognitive processing times. There is also emerging literature examining CMDT norms in specific populations, such as pediatrics or neurologic patients, which yielded similar results. There were no significant effects of gender or hand dominance on any of the CMDT subtests, justifying stratification of normative data only by age group. Upon completion of the collaborative study, the updated norms can be used to assess unilateral, bilateral, and bimanual dexterity in adults and older adults. Establishing updated normative data for each subtest individually allows clinicians to administer any number of subtests that would be appropriate for their particular client, contributing to flexibility during the evaluation process. Updating reference data for this test also ensures that clinicians use a relevant and reliable standardized assessment, which affects evidence-based practice, goal-setting, intervention planning, and reimbursement.

Uploaded File(s)

Upload Tables & Images

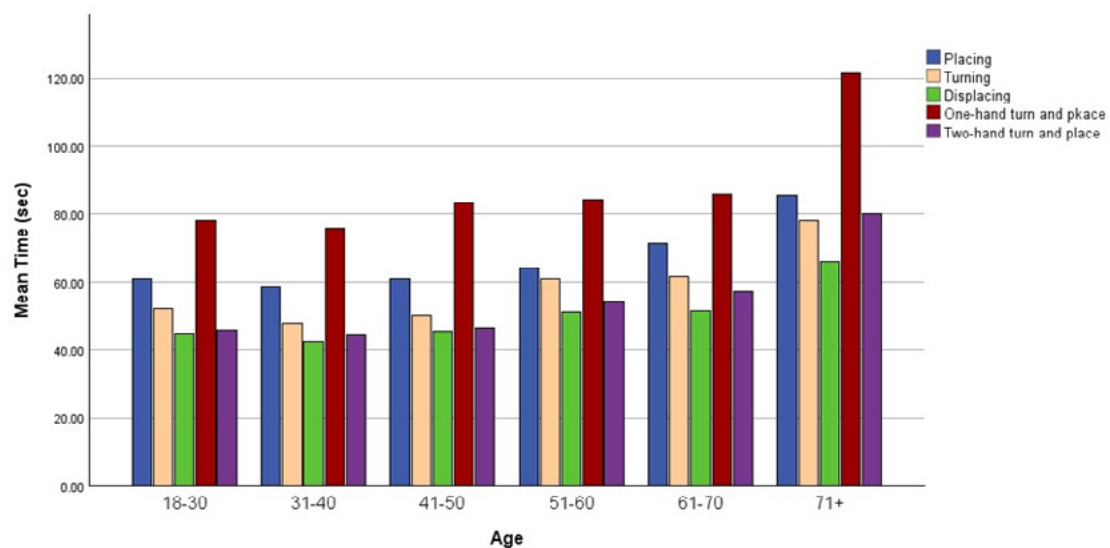
Table 1: Participant Characteristics

Table 1 Sample Characteristics	
Characteristic	n (%)
Age Groups	
18-30	53 (53.5)
31-40	13 (13.1)
41-50	8 (8.1)
51-60	4 (4.0)
61-70	11 (11.1)
71+	10 (10.1)
Gender	
Female	69 (69.7)
Male	30 (30.3)
Handedness	
Right	86 (86.9)
Left	11 (11.1)
Ambidextrous	2 (2.0)
Occupation	
Student	50 (50.5)
Retired	12 (12.1)
Education	11 (11.1)
Healthcare worker	10 (10.1)
Clerical, administrative, exec	8 (8.1)
Retail, hospitality, food servi	2 (2.0)
Technology, computer-based	2 (2.0)
Creative/artistic professions	1 (1.0)
Skilled trade/manual labor	1 (1.0)
Not currently employed	1 (1.0)
Other	1 (1.0)
Hobby	
Sports, fitness	33 (33.3)
Quiet activities	22 (22.2)
Arts, crafts, DIY	11 (11.1)
Not reported	7 (7.1)
Card, board, puzzle games	7 (7.1)
Cooking, meal prep	5 (5.1)
Musical instruments	4 (4.0)
Volunteering	4 (4.0)
Childcare or caregiving	2 (2.0)
Gardening, yard work	2 (2.0)
Technology-based leisure	2 (2.0)

Table 2: Means and standard deviations across age groups

		Report				
Age Groups		Placing	Turning	Displacing	One-hand turn and place	Two-hand turn and place
18-30	Mean	60.96	52.13	44.61	78.09	45.78
	Std. Deviation	7.76	7.44	5.78	10.77	7.87
31-40	Mean	58.48	48.01	42.49	75.93	44.27
	Std. Deviation	6.76	5.97	4.31	7.97	6.35
41-50	Mean	60.93	50.31	45.47	83.49	46.64
	Std. Deviation	7.96	3.74	5.17	7.39	4.37
51-60	Mean	64.19	61.01	51.22	84.25	54.06
	Std. Deviation	13.09	13.15	8.12	16.86	14.41
61-70	Mean	71.31	61.55	51.38	85.84	57.19
	Std. Deviation	13.17	14.70	8.41	12.63	11.77
71+	Mean	85.50	78.09	66.10	121.33	80.27
	Std. Deviation	14.75	14.85	12.55	30.61	20.37
Total	Mean	64.39	55.47	47.59	83.72	50.74
	Std. Deviation	12.16	12.47	9.56	18.82	14.56

Figure 1: Visual illustration of mean completion time across age groups



Submission ID: 2393286

PROMOTING POSTPARTUM MATERNAL HEALTH AND WELLNESS THROUGH INJURY PREVENTION EDUCATION

Author(s): Sarah Wittak, Orthopedic and Spine Centers of Wisconsin and Carroll University

PURPOSE

The purpose of this study was to develop and evaluate a community-based occupational therapy program to improve maternal knowledge of ergonomic infant care, prevent upper extremity musculoskeletal injury, and support postpartum health and wellness. This study addresses a gap relevant to hand therapy practice, as infant caregiving places repetitive stress on the upper extremity, increasing risk for conditions such as de Quervain's tenosynovitis, carpal tunnel syndrome, and other overuse injuries without routine access to preventative, occupation-based intervention

METHODS

The Super Mom program was a four-week, in-person educational intervention focused on musculoskeletal injury prevention, ergonomic infant care, and maternal health and wellness. Participants were recruited through community partner social media platforms. Content was delivered through a combination of didactic instruction and interactive, hands-on workshops using a kinesthetic learning approach. Education emphasized ergonomic strategies for infant feeding, diapering, bathing, and transportation to reduce upper extremity strain. Each session included a brief mindfulness exercise and facilitated group discussion to support reflection and peer engagement (Salomon et al., 2022). Program content was informed by literature identifying postpartum educational needs (Aburub et al., 2022; Afshariani et al., 2019; Ezeukwu et al., 2020; Fiat et al., 2022; Kristensen et al., 2018; Slootjes et al., 2016; Walker et al., 2015). Outcome measures included the Maternal Postpartum Quality of Life Questionnaire (MAPP-QOL) and a Likert-scale survey assessing knowledge of upper extremity musculoskeletal conditions and perceived importance of maternal health and wellness (Hill et al., 2006). Pre- and post-intervention assessments were completed, with results summarized in Figure 6.

RESULTS

Three participants completed pre- and post-intervention assessments. Outcome measures included a program-specific survey assessing knowledge of musculoskeletal injury prevention and perceived importance of maternal health, and the Maternal Postpartum Quality of Life Questionnaire (MAPP-QOL). Due to the small sample size, results are reported descriptively. Median program survey scores increased from 9.3/20 at baseline to 25/30 post-intervention, indicating improved knowledge of ergonomic infant care and musculoskeletal health. MAPP-QOL outcomes also improved, with mean satisfaction scores increasing from 114/246 to 161/246 and mean importance scores from 154/246 to 199/246, reflecting enhanced perceived value of maternal health, relationships, and well-being during the postpartum transition. Outcome changes are summarized in Figure 6.

CONCLUSION

Findings from the Super Mom program support the clinical value of incorporating occupational therapy-led, preventative education into postpartum care. Occupational therapists should integrate ergonomic training, joint protection strategies, and activity modification into early postpartum interventions to address the repetitive upper extremity demands of infant caregiving. Education on safe lifting, carrying, feeding, and positioning may reduce cumulative biomechanical strain and risk of musculoskeletal injury. These implications are particularly relevant for hand therapy practitioners, as postpartum individuals are at increased risk for conditions such as tendinopathies, nerve compression syndromes, and overuse injuries. Early, occupation-based intervention may support prevention and reduce the need for later rehabilitative care. Hand therapists should consider expanding their role to include preventative education, screening, and early intervention, even in the absence of a diagnosis. The findings also support integrating occupational therapy into interdisciplinary postpartum care models. Embedding services within obstetric, pediatric, or community health settings may improve access and enable earlier identification of musculoskeletal concerns. Community-based programming provides a feasible model, particularly for individuals facing barriers to care. Occupational therapists should advocate for inclusion of maternal functional performance, upper extremity health, and injury prevention in standard postpartum care. Future implementation should include expanded program delivery, longer follow-up, and integration of mental health screening to support holistic care.

Uploaded File(s)

Figure 1: *Initial Participant Survey*

Postpartum Program for Musculoskeletal Injury Initial Survey

This survey is designed to evaluate your current understanding of injury prevention. Please respond to each statement listed below. Your answers are confidential and will not affect your participation in the program.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I have an understanding of common upper extremity musculoskeletal impairments (De Quervain's Tenosynovitis, tendonitis, carpal tunnel syndrome, etc.) and how these impairments impact my ability to care for my newborn	1	2	3	4	5
2. I have an understanding of ergonomic strategies and appropriate biomechanics (maintaining a neutral wrist when lifting/carrying my newborn, lifting with my legs to maintain strong arms, and stabilizing my shoulders to prevent strain on my arms, etc.) to prevent musculoskeletal injury in the upper extremity.	1	2	3	4	5
3. I have an understanding of the importance of protecting myself when caring for my newborn to prevent injury that could affect my ability to care for my newborn.	1	2	3	4	5
4. I am aware of the postpartum services available within my community and have the resources to contact other postpartum providers if I need further assistance during my postpartum journey	1	2	3	4	5

Figure 3: Ergonomic Positioning: Tripod Lift



Figure 4: Ergonomic Positioning: Pivot Technique



Figure 5: Ergonomic Positioning: Infant Carrying



Figure 6: Summary of Results

Measure	Pre-Program Score	Post-Program Score
Program Survey (Median)	9.3/20	25/30
MAPP-QOL Satisfaction (Mean)	114/246	161/246
MAPP-QOL Importance (Mean)	154/246	199/246

Submission ID: 2399266

EXPLORING CONTEXTUAL FACTORS IMPACTING RECOVERY FOLLOWING DISTAL RADIUS FRACTURES

Author(s): Priya Bakshi, Indiana State University; Ryker Mecham, Indiana State University; Hailey Rough, Indiana State University; Kayla Fitts, Indiana State University

PURPOSE

Clinical practice guidelines published by the American Academy of Orthopedic Surgeons in 2021 recommend developing a sub-category of patients with distal radius fractures (DRF) that would benefit from supervised rehabilitation, informed by contextual factors. There is limited research on patient characteristics that impact clinical outcomes in DRF. The purpose of this study is to explore contextual factors that play a role in recovery following distal radius fractures.

METHODS

A phenomenological qualitative study design, using semi-structured interviews was conducted with occupational therapists who have experienced a distal radius fracture within the past five years. Occupational therapists are uniquely positioned to provide both clinical and personal perspective on contextual factors impacting recovery. Participants were recruited via social media platforms (LinkedIn and CommunOT), snowball sampling and email outreach to directors of rehabilitation facilities. Interviews were conducted virtually with automatic transcription, proofread by the authors. Content analysis using an inductive approach was used to aggregate codes into subcategories and categories that represented the participants' lived experience of recovery following distal radius fracture.

RESULTS

One occupational therapist, a 52-year-old, right-hand dominant occupational therapist and certified hand therapist (CHT) who sustained a DRF in January 2024 agreed to participate in the study. Six themes emerged from the interview: self-efficacy, terrible first few weeks, adapting to new normal, "a-ha" moment, providing hope and it's not just biomechanical. Psychosocial factors were the primary factors that impacted initial stages of recovery. Despite being a CHT, he experienced fear of movement, fear of harming the surgery and had impaired body image in the initial weeks following surgery. Self-efficacy, social support and clinical experience helped participant overcome these challenges and adapt to a new normal.

CONCLUSION

Psychosocial factors can impact recovery following a DRF and need to be considered for referral to therapy. Literature has shown these to be a risk factor for poorer outcomes. Limitations of this study include a single participant and potential recall bias as interview occurred 22 months post-surgery. However, participant provided detailed, vivid and consistent descriptions, enhancing trustworthiness of the findings.

Uploaded File(s)

Upload Tables & Images

Table 1 Main categories from aggregation of codes

Subcategory	Code	Meaningful Unit
Personal Characteristics	CHT	25 years as CHT, primarily worked in outpatient orthopedics treating UE injuries
	Non-dominant hand injury	"Thankful it was my nondominant side, so I could eat and drink without a problem"
	Healthy lifestyle	"active kind of person", "no comorbidities"
Clinical experience	Knowledge of condition	"know what needs to be done", "knew actual recovery of the condition", "it was easier to manage because we knew what to expect"
	Experience of treating this condition	"I had done it so many times", "know the predictability of how fractures heal, knew I was going to be better each week"
	Knowledge of complications	"5% chance of nerve injury", "lendon laceration"
Coping skills	Making light of	"Patients understood, made it a joke, which was good, kind of helped them; made a splint so I could take it off to dress"
Social support	Support at home	"Live with a person who kind of understood what I went through"
	Support at work	"I work in a place..."
Challenges at work	Relationship with surgeon	unique situation for me. Maybe it has some plus points and some negative points. The plus point is the surgeon that I went to is a close friend of mine.
	No use of left hand	1st 10-15 days were terrible, I could not use my left hand, after 2 hours was miserable, first week was bad primarily because of the work we do, couldn't make splints"
	Stress of burdening coworkers	"my other team members were seeing a large number of patients"
	Stress of being effective	Treat patients without hurting my hand and still being efficient and effective
Impaired body image	Difficulty looking at hand	"The first three days I was forcing myself to look at my hand"
	Not my hand	"I felt my hand was not my hand, alien hand;
	It felt weird	"thought somebody put a slab in there"
	Lose perspective of that part	10 days of nonuse
Fear of harming injury	Fear of movement	"I feel if I move it, it will break"; getting dressed without splint
Cognitive dissonance	Conflict b/w knowledge and emotions	I know moving the wrist will not bother it but could not fathom...
Consciously provided sensory input	Looked at hand, touched hand	"I had to kind of touch it... and looking at it made a huge difference"
Adapting to injury	Modified clothing, splint	"we tore of sleeves on big t-shirts"
Understanding challenges of looking at hand	Unable to look at hand	"You can see the horror in their eyes. I definitely know what they meant"
Understand impact of trauma	Trauma can be difficult to explain	Unable to verbalize it but can understand what they are going through
Understand fear of movement	Moving wrist can feel like breaking wrist	Heard it so many times, but now can relate
Positive takeaway	Unreasonable demand	They tell us there is no way I am going to move my wrist"
	Trauma bonding	"Have faith"
	Relate to Trauma of other surgeries	Even for RTC repairs...
Better clinician	Empathetic to patient experience	Understand what patients are going through
Gap in HEP	Missing psychosocial aspect	Psychosocial aspect missing
	Not just biomechanical	Prognosis is delayed
Behavioral aspect of therapy	Feedback on emotional support	Behavioral aspect that helps them
	Rapport with patients	well, you talk to me, you are not just telling me, hey, move your hand or go do this exercise and didn't have any kind of an interaction, the interpersonal skills
	Collaborative approach	The remaining 70% is you. It's basically us together

Submission ID: 2399303

CLINICAL UTILITY AND FEASIBILITY OF REMOTE 3D-PRINTED ORTHOSES USING HEAT-RESHAPABLE PCL IN THUMB CMC OSTEOARTHRITIS: A RANDOMIZED CROSSOVER PILOT STUDY

Author(s): Maryam Farzad, University of Western Ontario; Joy MacDermid, University of Western ON; Louis Ferreira, University of Western ON; Steven Cuyppers, Orfit industries

PURPOSE

To compare clinical outcomes, usability, adherence, and feasibility of remotely fabricated heat-reshapable 3D-printed orthoses with conventional thermoplastic orthoses in individuals with thumb carpometacarpal (CMC) osteoarthritis.

METHODS

A randomized crossover pilot trial was conducted in a university-affiliated hand therapy center. Forty-eight hands with CMC osteoarthritis received both a conventional thermoplastic whale-style orthosis and a remotely fabricated 3D-printed polycaprolactone (PCL) orthosis in randomized order, separated by a one-week washout period. Primary outcomes included pain (Numerical Rating Scale) and upper limb disability (QuickDASH). Secondary outcomes included satisfaction, usability (QUEST 2.0), and adherence (daily diary). Within-subject comparisons were performed after confirming no carryover effects.

RESULTS

Thermoplastic orthoses demonstrated a significant and clinically meaningful improvement in disability (mean change -14.35 ; $p = .009$), exceeding the minimal clinically important difference. The 3D-printed orthosis showed a smaller, non-significant improvement (-9.39 ; $p = .054$). Pain remained stable across both conditions with negligible changes. No significant differences were found between orthoses for post-treatment pain, disability, or satisfaction. The 3D-printed orthosis demonstrated favorable usability, particularly in weight, simplicity, and ease of use, with high adherence reported for both conditions. No major complications occurred.

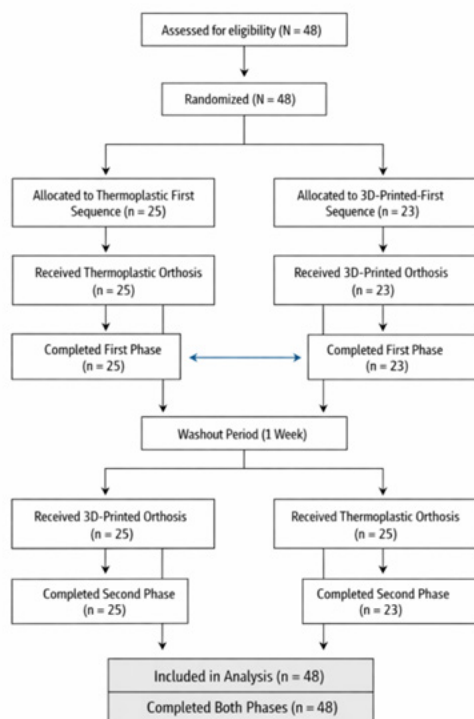
CONCLUSION

Both orthoses were feasible and well tolerated. Thermoplastic orthoses demonstrated greater short-term functional improvement, while remotely fabricated 3D-printed orthoses offered advantages in usability and accessibility. Remote orthosis fabrication using heat-reshapable materials appears clinically viable and may enhance access to hand therapy services, though further refinement is needed to optimize functional outcomes.

Uploaded File(s)

Upload Tables & Images

Graphical abstract



Submission ID: 2399320

ESTABLISHING CLINICAL CONSENSUS FOR ORTHOTIC PRESCRIPTION IN THUMB CMC OSTEOARTHRITIS: A DELPHI STUDY OF INTERNATIONAL HAND THERAPISTS

Author(s): Maryam Farzad, University of Western Ontario; Joy MacDermid, University of Western ON; Debby Schwartz, Orfit industries; Sarah Ewald

PURPOSE

Clinical decision-making for orthotic management of thumb carpometacarpal (CMC) osteoarthritis (OA) remains highly variable despite existing evidence supporting orthosis use. This study aimed to establish expert consensus on indications, design, and implementation of orthoses for individuals with CMC OA.

METHODS

A two-round modified Delphi study was conducted with international hand therapists (n=32) with ≥5 years of clinical experience. Survey items were developed from a literature review and expert input, addressing assessment, orthotic design, wear schedules, and patient-related factors. Consensus was defined as ≥75% agreement.

RESULTS

A consensus was reached for 72 items. Experts agreed that orthoses are most appropriate for individuals with Stage II CMC osteoarthritis, particularly when activity-related pain is ≥4/10 or functional instability is present. Stage I management should prioritize education and joint protection, with orthoses considered selectively. Functional thumb positioning—opposition to the index finger with approximately 30° MCP flexion—was recommended. The CMC joint should be immobilized; MCP inclusion is indicated when hyperextension or instability is present, and routine wrist immobilization is not recommended. Activity-based wear was endorsed, with optional nighttime use for rest pain. Breathable, rigid thermoplastic materials were preferred for structural support, whereas softer materials were considered suitable for early-stage disease or prolonged wear. Although orthotic pattern use varied widely across practice settings, short opponens and thumb spica designs were most commonly described. Clinicians also identified system-level barriers to implementation, including limited availability of materials, reimbursement limitations, and adherence challenges.

CONCLUSION

This modified Delphi process generated expert-based recommendations detailing when and how to prescribe orthoses for CMC osteoarthritis, including preferred indications, design features, material selection, and wear strategies. These findings provide needed clarity to support more consistent, patient-centred orthotic care and identify priorities for future evaluation of orthosis effectiveness and implementation. Consensus-derived recommendations offer practical guidance to standardize orthotic prescription in CMC osteoarthritis, enhancing clinical reasoning and supporting individualized, patient-centered care.

Submission ID: 2399745

ACCEPTABILITY OF ORTHOTIC DEVICE FABRICATION FOR CARPAL TUNNEL SYNDROME: COMPARISON OF MANUAL METHODS AND 3D PRINTING

Author(s): Emma Brown, Université du Québec à Trois-Rivières; Matthew Adams, Université de Sherbrooke; Étienne Penelle, Université de Sherbrooke; William Beauchemin, Université de Montréal; Stéphane Bedwani, Université de Montréal; Nicola Hagemeister, École de technologie supérieure; Mathilde Jean-St-laurent, Université du Québec à Trois-Rivières; Tokiko Hamasaki, Université du Québec à Trois-Rivières

PURPOSE

3D printing represents an innovative method for fabricating upper limb orthoses, offering greater comfort than traditional thermoforming. However, its adoption remains limited in clinical settings. This study compared orthosis fabrication for carpal tunnel syndrome using traditional methods and 3D printing, based on user satisfaction with the orthosis and the acceptability of the fabrication process among potential future users (occupational therapy students).

METHODS

Twenty students fabricated and sequentially wore both types of orthoses for 24 hours. The QUEST 2.0 assessed orthosis acceptability (e.g., comfort, satisfaction). A study-specific questionnaire measured ease of fabrication, perceived competence, quality of training, motivation, and perceived usefulness of the technology. Production time was also compared.

RESULTS

3D-printed orthoses achieved higher satisfaction scores (34.4 ± 4.6 vs 31.7 ± 4.6 /40; $p = 0.04$) and shorter production times (16.6 ± 6.0 min vs 28.5 ± 9.4 min; $p < 0.001$). Perceived usefulness was notable (7.7 ± 1.9 /10), and fabrication acceptability was similar between the two methods.

CONCLUSION

3D-printed orthoses for carpal tunnel syndrome appear to provide greater satisfaction, supporting their potential for clinical adoption to improve quality of care. Their ability to offer a more customizable fit compared to traditional thermoformed orthoses may enhance patient compliance and satisfaction. In addition, the automated nature of 3D printing can reduce manual labor time for occupational therapists, allowing more time for patient care. Finally, the lightweight and breathable design of 3D-printed orthoses may help reduce skin irritation in the long-term management of the condition.

Table 1. Demographic characteristics of the participants

Factor	Participants (n = 20)
Age, years, median	22.3 ± 1.7
Sex, female, n (%)	13 (65)
Hand dominance, n (%)	Right 18 (90)
Ethnicity, n (%)	Caucasian 20 (100)

Table 2. User satisfaction (QUEST 2.0) (Thermoplastic orthoses vs SLA 3D-printed orthoses)

Criteria	Thermoplastic (n=10)		SLA (Tough 1500) (n=10)		p value (Wilcoxon)
	Mean	SD	Mean	SD	
Dimensions	3.6	1.1	4.2	1.0	0.165
Weight	3.9	1.0	4.8	0.4	0.024*
Ease in adjusting	3.8	0.6	4.1	0.9	0.334
Safety	4.3	1.1	4.7	0.5	0.336
Durability	3.2	1.2	4.5	0.5	0.017*
Ease to use	4.2	0.8	4.5	0.7	0.180
Comfort	3.1	1.4	4.0	0.9	0.117
Effectiveness	4.1	1.0	4.3	0.8	0.516
Total score	30.2	5.3	35.1	3.8	0.021*

Note. SD represents standard deviation. *p<0.05

Table 3. User satisfaction (QUEST 2.0) (Thermoplastic orthoses vs SLS 3D-printed orthoses)

Criteria	Thermoplastic (n=10)		SLS (Nylon 12) (n=10)		p value (Wilcoxon)
	Mean	SD	Mean	SD	
Dimensions	4.0	0.5	4.1	0.9	0.792
Weight	4.7	0.7	5.0	0	0.180
Ease in adjusting	3.9	0.7	3.9	1.0	1.000
Safety	4.4	0.8	4.8	0.4	0.234
Durability	3.9	1.1	3.7	1.4	0.829
Ease to use	4.4	0.8	4.2	0.6	0.589
Comfort	3.5	0.7	3.9	1.4	0.599
Effectiveness	4.4	0.7	4.2	1.0	0.671
Total score	33.2	3.3	33.8	5.4	0.475

Note. SD represents standard deviation.

Fig. 1. 3D-printed wrist orthosis for carpal tunnel syndrome



Fig. 2. Thermoformed wrist orthosis



Fig. 3. Upper-limb positioning



Fig. 4. Scanning course



Fig. 5. Scanned image of an upper limb using Miraco



Fig. 6. SLS 3D-printed wrist orthosis



Submission ID: 2401565

EFFECT OF PREFABRICATED ORTHOSES ON PAIN AND WEIGHT-BEARING CAPACITY FOR CONSERVATIVELY MANAGED TRIANGULAR FIBROCARILAGE COMPLEX INJURIES: A PILOT STUDY

Author(s): David Plutschack, Des Moines University; Jack Fuchs, Des Moines University; Abigail Blum, Des Moines University, Riley Ericson, Des Moines University

PURPOSE

Triangular fibrocartilage complex (TFCC) injuries are a common wrist condition that result in ulnar-sided wrist pain, limited weight-bearing capacity, and functional impairments. The WristWidget® and the Bullseye Wrist Band™ are commonly used prefabricated orthoses in hand therapy practice for TFCC injuries, but limited evidence exists evaluating their effectiveness. The purpose of this pilot study was to examine the immediate effects of the WristWidget® and Bullseye Wrist Band™ on pain and weight-bearing capacity in individuals with conservatively managed TFCC injuries.

METHODS

A single-group, repeated-measures quasi-experimental pilot study was conducted with six adults (3 male, 3 female; 7 upper extremities) diagnosed with TFCC injuries being conservatively managed. Pain at rest and during weight-bearing was assessed using the Numeric Rating Scale (NRS) and weight-bearing capacity was measured using the Weight-Bearing Test (WBT). Participants first completed pain and weight-bearing measurements without an orthosis. Each participant then completed testing with both the WristWidget® and the Bullseye Wrist Band™, with the order of orthoses randomized. Participants were able to take home their preferred orthosis following data collection. The Wilcoxon Signed Rank Test was used to compare pain and weight-bearing outcomes between each orthosis and baseline trials, as well as between each orthosis.

RESULTS

Both the WristWidget® and Bullseye Wrist Band™ demonstrated statistically significant reductions in pain during weight-bearing compared with no orthosis ($p=0.031$ for both orthoses). Median pain during weight-bearing decreased from 5/10 without an orthosis to 2/10 with the WristWidget® and 3/10 with the Bullseye Wrist Band™. Mean weight-bearing capacity measured using the WBT prior to application of the WristWidget® was 48.8 ± 21.6 pounds and increased to 51.1 ± 24.6 pounds following application, demonstrating an increase of 2.3 ± 6.8 pounds. This increase was not statistically significant ($p=0.406$). Mean weight-bearing capacity prior to application of the Bullseye Wrist Band™, was 47.4 ± 22.9 pounds and increased to 52.3 ± 24.6 pounds after donning the Bullseye Wrist Band™, demonstrating an increase of 4.9 ± 3.4 pounds. Only the Bullseye Wrist Band™ demonstrated a statistically significant improvement in weight-bearing capacity compared to baseline ($p=0.016$). Median pain at rest decreased from 2/10 at baseline to 1/10 following application of both the WristWidget® and Bullseye Wrist Band™; however, neither orthosis demonstrated a statistically significant reduction in pain at rest ($p=0.250$ for both orthoses). No statistically significant differences were found between orthoses for any outcome measure. Four of the six participants preferred the Bullseye Wrist Band™.

CONCLUSION

The WristWidget® and Bullseye Wrist Band™ both demonstrated statistically significant reductions in pain during weight-bearing, indicating effectiveness for pain management with TFCC injuries. Additionally, the Bullseye Wrist Band™ showed a significant improvement in weight-bearing capacity. These findings support the use of the WristWidget® and Bullseye Wrist Band™ for the conservative management of TFCC injuries. No statistically significant differences were found between both orthoses for any outcome measure, therefore clinical decision-making and patient preference may influence therapists' suggestion for use. While the results of this study support the use of prefabricated orthoses for TFCC injuries, further studies with larger sample sizes are needed to improve the generalizability of findings.

Uploaded File(s)

Upload Tables & Images

TFCC Tables 1-4

Table 1. Outcomes for Pain at Rest, Pain During Weight-Bearing, and Weight-Bearing Capacity During Baseline, WristWidget®, and Bullseye Wrist Band™ Testing				
Outcomes	Baseline (No Orthosis)	WristWidget®	Bullseye Wrist Band™	Significant vs. Baseline (No Orthosis)
Median pain at rest (NRS 0-10)	WristWidget®: 2	1	1	No
	Bullseye Wrist Band™: 2			
Median pain during weight-bearing (NRS 0-10)	WristWidget®: 5	2	3	WristWidget®: Yes*
	Bullseye Wrist Band™: 5			Bullseye Wrist Band™: Yes*
Mean +/- SD weight-bearing capacity (lbs. via WBT)	WristWidget®: 48.8 ± 21.6	51.1 ± 24.6	52.3 ± 24.6	WristWidget®: No
	Bullseye Wrist Band™: 47.4 ± 22.9			Bullseye Wrist Band™: Yes*
Note: Data are presented as median values for pain outcomes and mean ± SD for weight-bearing outcomes. Significance indicates comparison with baseline (no orthosis); * denotes statistical significance p≤0.05				
Abbreviations: NRS, Numeric Rating Scale; SD, standard deviation; WBT, Weight-Bearing Test				

Table 2. Changes in Outcomes for Pain at Rest, Pain During Weight-Bearing, and Weight-Bearing Capacity During Baseline, WristWidget, and Bullseye Wrist Band Testing				
Outcome	Baseline (No Orthosis)	WristWidget Change	Bullseye Wrist Band Change	Significant Difference Between Orthoses
Median pain at rest (NRS 0-10)	WristWidget®: 2	-1	-1	No
	Bullseye Wrist Band™: 2			
Median Pain During Weight-Bearing (NRS 0-10)	WristWidget®: 5	-3	-2	No
	Bullseye Wrist Band™: 5			
Mean ± SD weight-bearing capacity (lbs. via WBT)	WristWidget®: 48.8 ± 21.6	2.3 ± 6.8	4.9 ± 3.4	No
	Bullseye Wrist Band™: 47.4 ± 22.9			
Note: Change scores are calculated relative to baseline (no orthosis); negative values indicate decreased pain. Pain outcomes are reported as median values and weight-bearing outcomes are reported as mean values ± SD. Significant difference between orthoses reflects comparison of the change scores between the WristWidget® and the Bullseye Wrist Band™.				

Table 3. Wilcoxon Signed Rank Test Outputs - Orthoses vs. Baseline (No Orthosis)						
	Bullseye Wrist Band™ Pain at Rest vs. Baseline	WristWidget® Pain at Rest vs. Baseline	Bullseye Wrist Band™ Pain During Weight-Bearing vs. Baseline	WristWidget® Pain During Weight-Bearing vs. Baseline	Bullseye Weight-Bearing Capacity vs. Baseline	WristWidget® Weight-Bearing Capacity vs. Baseline
Z	-1.732 ^a	-1.633 ^a	-2.207 ^a	-2.207 ^a	-2.371 ^b	-0.931 ^a
Exact Sig. (2-tailed)	0.25	0.25	0.031*	0.031*	0.016*	0.405
Note: a, based on positive ranks; b, based on negative ranks; * denotes statistical significance						

Table 4. Wilcoxon Signed Rank Test Outputs - WristWidget® vs. Bullseye Wrist Band™

	Change in Pain at Rest:	Change in Pain	Change in Weightbearing
	WristWidget® vs. Bullseye	During Weightbearing: WristWidget® vs. Bullseye Wrist Band™	Capacity: WristWidget® vs. Bullseye Wrist Band™
	Wrist Band™		
Z	-0.378 ^a	-1.342 ^a	-1.612 ^b
Exact Sig. (2-tailed)	1	0.5	0.125

Note: a, based on negative ranks; b, based on positive ranks; significance determined by a $p \leq 0.05$

Submission ID: 2402188

BEYOND KINESIOPHOBIA: FEAR AND CATASTROPHIZING IN UPPER LIMB CRPS

Author(s): Maryam Farzad, University of Western Ontario; Joy MacDermid, University of Western ON; Tara Packham

PURPOSE

To examine fear-related constructs in individuals with upper limb Complex Regional Pain Syndrome (CRPS) and determine whether fear of movement represents a distinct construct or overlaps with pain catastrophizing. Understanding this distinction is critical for hand therapy, as fear-related behaviors influence participation, rehabilitation adherence, and functional recovery in CRPS.

METHODS

A cross-sectional study included 142 individuals with upper limb CRPS. Participants completed the Tampa Scale for Kinesiophobia (TSK-11), Pain Catastrophizing Scale (PCS), and Numeric Rating Scale (NRS). Relationships between variables were examined using Pearson correlation. Structural validity was evaluated using confirmatory and exploratory factor analyses to identify underlying fear-related constructs.

RESULTS

Strong correlations were observed between TSK-11 and PCS ($r=0.81$) and pain ($r=0.60$), indicating overlap between fear of movement, catastrophizing, and pain. CFA did not support the original two-factor model. EFA identified a two-factor solution with different item groupings, explaining 64.9% of the variance. Factors were labelled as fear avoidance and magnification/helplessness based on expert consensus, with acceptable internal consistency (>0.90). The second factor showed stronger correlation with PCS ($r=0.83$).

CONCLUSION

Fear in CRPS is not limited to movement but reflects a broader cognitive-emotional response closely linked to catastrophizing. The identified factor structure suggests that kinesiophobia in this population encompasses both fear-avoidance and magnification/helplessness, challenging its interpretation as a distinct construct. For hand therapy, assessment and intervention should move beyond movement-focused fear to address maladaptive pain beliefs. Targeting both fear and catastrophizing may improve participation, adherence, and functional recovery in CRPS rehabilitation.

Uploaded File(s)

Scatter plot depicting the relationship between Tampa Scale for Kinesiophobia (TSK-11) scores and Pain Catastrophizing Scale (PCS) scores, illustrating the assessment of normality and linearity assumptions for correlation analysis.

Submission ID#2408911

BENT MONOFILAMENTS: IS A PRACTICAL FIX EFFECTIVE?

Author(s): Caroline W. Stegink Jansen, University of Texas Medical Branch, April C. Cowan, The University of Texas Medical Branch; Elizabeth Salisbury, University of Texas Medical Branch; Makenna P. Kager White, University of Texas Medical Branch

PURPOSE

The rationale for this study is two-fold and has the problem of bent filaments at heart. First, publication of a normative study was stopped after a bent 2.83 sized filament was found that threatened trustworthiness of the data. Second, a clinical remedy to straighten filaments using warm water immersion to recover shape and force production was noted. Monofilaments are designed to deliver a constant force once buckling occurs. Various factors associated with repeated use are known to contribute to altered filament shape and force output, compromising accuracy. The search for solutions is ongoing. No studies were found to assess material responses to the noted straightening intervention. The purpose of this study was to 1) Assess impact of a straightening intervention combined with warm water (70-75o) immersion on shape and force production of 2.83 and 3.61 sized filaments and 2) Examine feasibility to recover force production to listed target forces. This study is important for clinical practice because accurate force production is the primary requirement for clinical testing, and inaccurate force application may lead to inaccurate diagnostic interpretations.

METHODS

The study followed a repeated measures design (baseline, immediate post-immersion and the following day [Day 2]) to examine intervention effects on force production and structural bend of twelve 2.83 and seven 3.61 size monofilaments. The filaments were collected from a teaching and research environment and were all from a single brand. Four of the 19 filaments were newly purchased. The inclusion criterion was observation of a bend; exclusion was visible damage to the filament. One certified hand therapist conducted the intervention (Figure 1). Two raters applied filament compressions on a Sartorius scale, and two readers recorded the forces. All were blinded to filament size. The primary outcome measure was force in grams. Bends were qualified by observation and tracing of filaments on paper. Company provided target forces (5% lower margin) were 0.0665 and 0.38 grams for 2.83 and 3.61 sizes, respectively. Descriptive statistics used in data analyses included mean, median, standard deviations and frequencies. Inferential statistics included repeated ANOVAs, t tests, repeated Friedman exact and binomial exact tests. Inter-rater reliability was determined by intra-class correlation coefficients (ICC) and Spearman Rho coefficients. The confidence level was 0.05.

RESULTS

In this sample of bent filaments, the risk for lower force production was confirmed at baseline with mean forces for 2.83 and 3.61 filaments falling below the target 5% margin values. At best, forces of three out of 19 filaments fell within boundaries. Two new 2.83 filaments met target force, but the two new 3.61 filaments did not. The impact of the intervention showed that for both filament sizes, post-immersion forces were significantly lower than baseline forces ($P < 0.016$). Post-immersion forces were also lower than Day 2 forces ($P < 0.035$). Day 2 forces were slightly lower but not significantly different from baseline forces ($P > 0.06$) (Figure 2). Parametric and nonparametric data analyses produced comparable results in all analyses. None of the 2.83 and 3.61 filaments achieved target 5% margin value after the intervention; forces for the 2.83 size dipped into lower sized filaments, forces for the 3.61 sizes did not. Bend severity did not improve ($P=0.333$). Paper tracings showed a worsening in deviation over time from one to two planes post immersion and on Day 2 for all filaments. The interrater reliability varied between sessions: ICC values ranged between 0.54 and 0.89 for 2.83 markings and between 0.76 and 0.95 for 3.61 markings.

CONCLUSION

Our study provides evidence to use caution when using bent filaments due to the high risk of low force production. The intervention lowered the force significantly for both filament sizes, making the problem worse rather than better. After a day of cooling and rest, force was slightly less but not significantly different from baseline force. No data were collected after Day 2 to rule out long-term damage. Studies of various brands are recommended to generalize the findings. Our testing protocol was based on recent evidence in four different brands of filaments that with repeated compressions force production force decreases exponentially. Our testing protocol of five preliminary compressions was used to stabilize force application, but it may inadvertently have contributed to low baseline values. The clinical implication is that this straightening intervention with warm water immersion for bent monofilaments cannot be recommended, is even strongly discouraged when filaments will be used immediately after immersion. When patients cannot sense the 2.83 filament, therapists need to take possible predictable imperfections of used filaments into consideration, when assigning an impaired diagnosis.

Uploaded File(s)

Figure 1: Experimental set up for Intervention and Measurement

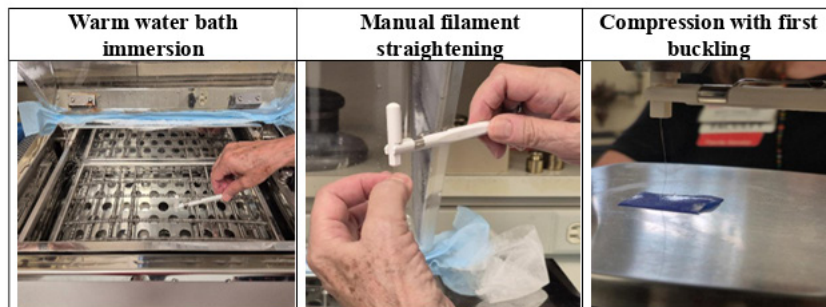
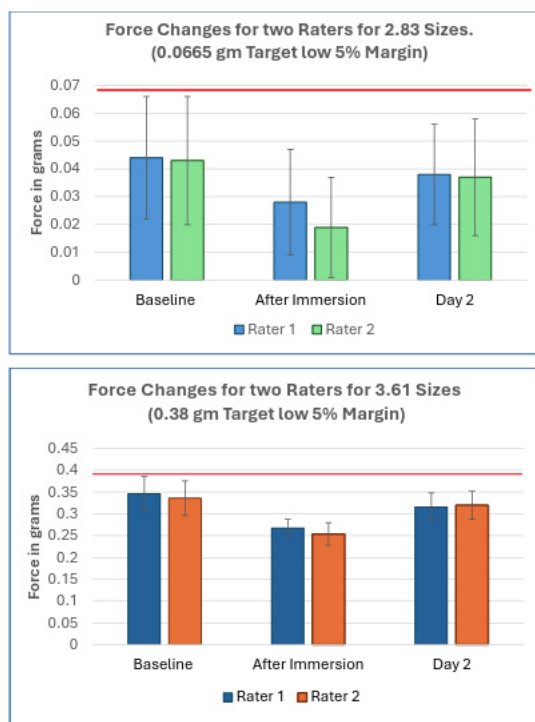


Figure 2: Force changes for the 2.83 and 3.61 Filament Size for both Raters. Baseline, After immersion and Day 2.



Submission ID#2409930

CERTIFIED HAND THERAPISTS' PERCEPTIONS OF THE IMPACT AND IMPLICATIONS OF PSYCHOSOCIAL FACTORS ON PATIENTS WITH COMPLEX TRAUMATIC HAND INJURIES: A DESCRIPTIVE QUALITATIVE APPROACH

Author(s): Noha A. Elfar, Hand in Hand Occupational Therapy of Long Island; Jennifer Dodson. OrthoCarolina Institute, Hand Center

PURPOSE

The purpose of this study was to explore certified hand therapists' perceptions of how psychosocial factors influence patients with complex traumatic hand injuries and to understand the implications of these factors on rehabilitation. The study addressed the need to better characterize how hand therapists recognize and respond to psychosocial challenges that may affect recovery, engagement, and functional outcomes.

METHODS

A descriptive qualitative design was used. Fourteen certified hand therapists who previously participated in semi-structured interviews were included in this secondary analysis. Interview transcripts were examined using reflexive thematic analysis to identify patterns related to therapists' experiences addressing psychosocial factors in clinical practice. Data were coded and organized through iterative review to generate themes reflecting therapist perspectives.

RESULTS

Participants identified a range of psychosocial factors commonly exhibited by patients with complex traumatic hand injuries, including emotional distress, fear, altered self-identity, and challenges with role resumption. Therapists described how these factors influenced patient motivation, adherence, and overall quality of life. Barriers to addressing psychosocial needs included limited training, high caseload demands, and restricted access to private treatment spaces. Themes were organized within four interconnected components aligned with a biopsychosocial framework: rehabilitation practice patterns, psychosocial factors, social factors, and physical factors.

CONCLUSION

Findings demonstrate that certified hand therapists view psychosocial factors as central to recovery following complex traumatic hand injury and actively incorporate strategies such as therapeutic use of self, structured communication, and timely referral to mental health providers to support patient adaptation. However, limited training, productivity pressures, and environmental constraints appeared to reduce therapists' capacity to address these needs consistently. Study results underscore the importance of integrating psychosocial competencies into hand therapy education, expanding access to interdisciplinary resources, and designing clinical environments that support private, patient-centered interaction. Strengthening these areas may enhance patient engagement, improve functional outcomes, and promote a more holistic rehabilitation process for individuals recovering from complex traumatic hand injuries.

Upload Image(s)

Certified hand therapists' perceptions of the impact and implications of psychosocial factors on patients with complex traumatic hand injuries: A descriptive qualitative approach

Table 1: Operational definition of CTHI from original study²

A severe injury that has occurred as a result of a trauma distal to the elbow that involves damage to three or more of the following structures in the region: soft tissue (skin and fascia), bone, muscle, tendon, ligament, blood vessel, and peripheral nerve, resulting in loss of function and/or sensibility of the wrist and/or hand. Two of the three structures involved must be bone and soft tissue.

^a Reproduced by permission¹

^b Other terms used to describe these injuries: complex hand injuries, complex traumatic hand injuries, mutilating hand injuries, hand trauma, mangled hands, crush injuries, severe/moderate hand injury, degloving injuries, and traumatic hand injuries.

Table 2. Participants' Demographics

Demographic Characteristics (n=14)	Frequency (n)	Percentage (%)
Profession		
OT	13	93%
PT	1	7%
Education		
Bachelor's Degree	6	43%
Master's Degree	6	43%
Clinical Doctoral Degree	2	14%
Years of experience		
11-15 years	1	7%
16-20 years	1	7%
21-25	6	43%
26 +	6	43%
Regions		
Northeast	6	43%
Southeast	5	36%
Southcentral	2	14%
West	1	7%
Practice settings		
Hospital acute care	2	14%
Inpatient rehabilitation	1	7%
Hospital-based outpatient	9	64%
Corporate outpatient	1	7%
Physician-owned outpatient	3	21%
Private practice setting	1	7%
Telehealth	1	7%
Other	1	7%
Percentage of CTHI caseload (yearly)		
0-25%	5	36%
26-50%	5	36%
51-75%	2	2%
76-100%	2	14%

Table 3: Phases of Analysis (Braun & Clarke)

Phase 1: Familiarization of Data	Become immersed in the data by reading and re-reading the data, noting brief points about analytic ideas or insights.
Phase 2: Coding	Systematically identifying and annotating noteworthy data characteristics throughout the entire dataset while compiling relevant information for each identified feature that is specific and detailed. Coding aims to identify single meanings or concepts.
Phase 3: Generating Initial Themes	Compile clusters of codes to form potential overarching patterns or themes, and then collect all data that correspond to each of the potential themes. Themes are constructed by the researchers and based on the data, the research questions, and the researcher's knowledge and insights.
Phase 4: Developing and Reviewing Themes	Assess the initial fit of candidate themes to the data and the viability of the overall analysis by going back to the full dataset. Development and review involves ensuring themes make sense in relation to both the coded extracts and the full dataset. Consider the relationship between the themes and existing knowledge as well as the wider context of the research.
Phase 5: Refining, Defining, and Naming Themes	Fine-tune the details of each theme and the narrative that emerges from the analysis, resulting in precise definitions and names for each theme. Compile brief synopsis of each theme.
Phase 6: Write Up	Finesse and finish the writing process. Weave together the analytical narrative and compelling, vivid data extracts to tell the reader a coherent and persuasive story about the dataset that addresses the research question, ultimately crafting an academic report documenting the analysis.
Additional researcher triangulation with research team	Meet with research team to discuss impressions of the themes developed from the data, to further discuss the meaning of the therapists' descriptions how we reported therapists' perspectives based on their descriptions of their experiences with CTHI, a way of "using multiple...researchers to increase the precision or richness of the understanding of the object of study..." (Braun & Clarke, p. 297)

Table 4: Variations in Researchers' Approaches to Coding³

	Coder One	Coder Two
Orientation to Data	More deductive, where the analysis is shaped by existing theoretical constructs (biopsychosocial model). Coding and themes driven by data content	More inductive, where the analysis is located within, and coding and theme development are driven by the data content in each individual interview
Focus of Meaning	Latent: analysis explores meaning at the more underlying or implicit level.	Semantic: analysis explores meaning at the more surface or explicit level.
Qualitative Framework	Critical, where the analysis focuses on interrogating and unpacking meaning around why CHT do not address psychosocial factors in hand therapy practice and are we doing enough?	Experiential, where the analysis aims to capture CHT' perspectives and understanding regarding addressing psychosocial issues in practice.
Theoretical Frameworks	Relativist, constructivist: where analysis aims to interrogate and unpack the realities that are expressed within the dataset.	Realist, essentialist, where the analysis aims to capture truth and reality of the participants as expressed within the dataset.

Table 5. Coder One Analysis of the Data

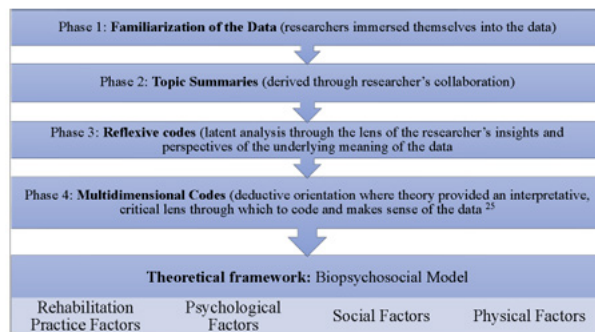
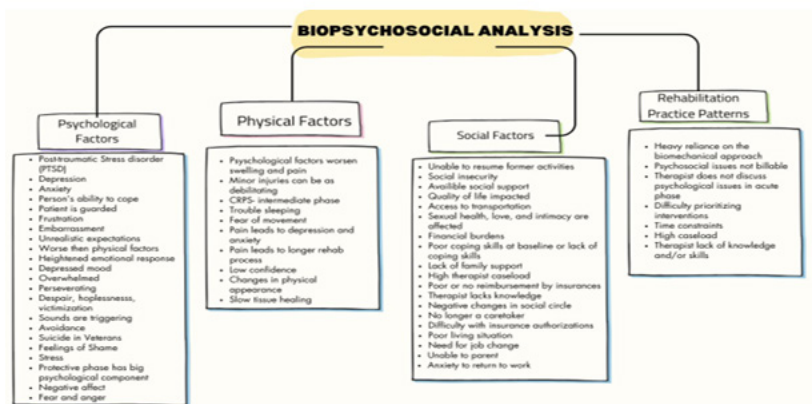


Figure 1. Coder One Thematic Map



(abstracts are listed in numeric order by control ID number)

```

graph TD
    A[Phase 1: Familiarization of the Data (researchers immersed themselves into the data)] --> B[Phase 2: Topic Summaries (derived through researcher's collaboration)]
    B --> C[Phase 3: Coding (identifying noteworthy data characteristics, while compiling relevant information for each interview)]
    C --> D[Phase 4: Reflexive codes (researcher's insights and perspectives of the data. Semantic analysis which explores meaning at the more surface level)]
    D --> E[Phase 5: Theme development (inductive orientation where coding and development are driven by the data content of each individual interview and portraying the overall viewpoint of CHTs)]
  
```

Phase 1: **Familiarization of the Data** (researchers immersed themselves into the data)

Phase 2: **Topic Summaries** (derived through researcher's collaboration)

Phase 3: **Coding** (identifying noteworthy data characteristics, while compiling relevant information for each interview)

Phase 4: **Reflexive codes** (researcher's insights and perspectives of the data. Semantic analysis which explores meaning at the more surface level)

Phase 5: **Theme development** (inductive orientation where coding and development are driven by the data content of each individual interview and portraying the overall viewpoint of CHTs)

Recognizing patient's difficulty dealing with complex hand injury

CHT uses clinical judgment to problem solve approach to treatment

CHT strategies for addressing psychosocial issues

Therapeutic alliance builds trust, partnership

Patient education
Combined with support building

Barriers prevent CHTs from addressing

CHT uses clinical judgment to problem solve approach to treatment

CHT help patient deal with psychosocial and physically

Submission ID#2411288

HAVING A CHILD WITH BRACHIAL PLEXUS BIRTH INJURY: A SCOPING REVIEW OF PARENTAL PSYCHOSOCIAL AND CONTEXTUAL FAMILY OUTCOMES

Author(s): Katherine E. Henry, Division of Occupational Therapy and Physical Therapy, Cincinnati Children's Hospital and Medical Center; Sonali Singla, School of Science, Indiana University; Melissa Previtera, Medical Library, University of Cincinnati; Roger Cornwall, Division of Pediatric Orthopaedic Surgery, Cincinnati Children's Hospital and Medical Center and University of Cincinnati; Jenny Dorich, Division of Occupational Therapy and Physical Therapy and Division of Pediatric Orthopaedic Surgery, Cincinnati Children's Hospital and Medical Center

PURPOSE

Brachial plexus birth injury (BPBI) is a traumatic birth injury to the network of nerves that innervate the upper extremity. Effects include partial or complete paralysis, sensory deficits, or motor dysfunction in the affected arm. Varying in severity and recovery of the affected nerves, BPBI can have a permanent impact on the global health of affected individuals. Other pediatric chronic health conditions have been found to impact families physically, psychosocially, and financially. This scoping review characterizes the known impacts of BPBI on the family, including specifically evaluating parental psychosocial impacts. Additionally, this review sought to characterize the interventions currently used to address the impacts that BPBI may have on the family.

METHODS

The research team registered this scoping review on the Open Science Framework on June 27, 2025. The search strategy was developed and completed by a medical sciences librarian. Data collection was initiated on June 24, 2025 and completed on December 31, 2025 using the following databases: PubMed, Embase, Cochrane Library, PsycINFO, and Web of Science. Articles published in peer reviewed journals describing parental psychosocial or family impacts of BPBI or related interventions were included. Additionally, participants in the included studies had to be parents or caregivers of children with BPBI. Articles not written in English were excluded from this scoping review. Two independent researchers independently reviewed articles in the title and abstract screening as well as the full manuscript review. A third member of the research team served as an arbitrator to resolve differences in the full manuscript review. Data extraction was completed by the two researchers independently, with discrepancies resolved through discussion with the arbitrator. Researchers extracted and analyzed the data to identify type of study, domains impacted, specific population assessed (e.g. mothers, fathers, caregivers, not specified), geographic location of study, outcome measures used, and outcome data. Studies also were examined to identify descriptions of any psychosocial intervention. For a further analysis, researchers isolated studies with defined clinical cut-offs for clinical measures of psychological distress to evaluate psychological condition event rates within the BPBI caregiver population as well as relating demographics.

RESULTS

Initial collection of articles included 481 studies to further review. Researchers removed 149 duplicate articles, and an additional 284 articles were screened out by title and abstract, leaving 48 articles for full review. Following full article review, 17 additional articles were removed. Thirty-one articles were included in this scoping review. All included studies were level three evidence or lower. Most studies were cross-sectional (Figure 1a). The studies were completed across eight countries (Figure 1b), spanning across five continents. Domains impacted included mother's psychosocial health, father's psychosocial health, family psychosocial health, family resources, healthcare experiences, and child/parent relationships (Table 1). In parents of children with BPBI age greater than or equal to 3 years, incidence of post-traumatic stress disorder (mothers 41.7%) and poor psychological adjustment (mothers 9%; fathers 19%) has been found. Only one study was identified evaluating an intervention, a family education day, to address the psychosocial impact of brachial plexus birth injury on patients and families.

CONCLUSION

Evidence regarding the psychosocial impacts that BPBI has on parents and caregivers currently has a strong focus on the mother's perspective. Evidence on both mothers' and fathers' perspectives indicates a shared emotional strain that having a child with BPBI puts on the family. Additionally, post-traumatic stress disorder among mothers and poor psychological adjustment among mothers and fathers have been found. Studies reviewed from across the globe suggest the pervasive nature of the psychosocial impacts of

BPBI on families. Only low-level evidence exists reviewing the impacts of BPBI on parents and caregivers, and no evidence exists for clinical psychosocial care to treat concerns regarding psychosocial impact of BPBI on parents and caregivers. Further research on the psychosocial impact that having a child with BPBI has on all caregivers is needed to guide psychosocial care to support parents and children with BPBI.

Uploaded File(s)

Upload Tables & Images

Domains of Impact

Table 1 Domains of Family Impact

Family Impact Domains	Summary of Key Findings
Mother's Psychosocial Health (n = 10)	Emotional strain: stress, worry, anger, shock, disbelief, helplessness, heartbreak, grief, burnout Psychological: somatization, anxiety, interpersonal sensitivity, depression, obsessive compulsive disorder, post-traumatic stress disorder Increase physical pain Social isolation Decreased quality of life compared to parent of healthy children
Father's Psychosocial Health (n = 10)	Emotional strain: Stress, anger, disbelief, shock, helplessness, worry, and coping Quality of life is no less than parents of healthy children
Family Psychosocial Health (n = 10)	Extended family as support network Family quality time activities decreased Nuclear family relationships strained Family's social relationship strained vs. not impacted Family relationships identified by parents and children as a priority assessment are for BPBI healthcare
Family Resources (n = 13)	Time and energy devoted to advocacy and medical appointments/ researching the condition Financial strain Litigation common
Healthcare Experiences (n = 9)	Frustration with limited communication and support from healthcare providers Multiple medical appointments burdensome Traumatic birth experience Unclear care guidelines and prognosis Favorable experiences with medical specialists
Child/Parent Relationships (n = 4)	Parents rate parental support/family dynamics as a higher priority than children Navigating child's role in medical decision making as they age Discordance between parent and child in treatment decisions Child's understanding of their brachial plexus birth injury is from the perspective of their parents

Distribution of Study Types and Geographic Distribution of Included Studies

Submission ID#2411690

HAND THERAPY ASSESSMENT AND CLINICAL TREATMENT OF PROXIMAL INTERPHALANGEAL JOINT FLEXION CONTRACTURES: A MODIFIED DELPHI PROJECT

Author(s): Lori Algar, Orthopaedic Specialty Group PC; Ricky Altahif, Baylor University; Priya Bakshi, Indiana State University; Michael D. Mueller, Rothman Orthopaedics; Katherine Loomis, University of Southern California; Jenna Millman, Orfit Industries; Rachel Larson, NovaCare Rehabilitation; Rose McAndrew, St Louis Community College; Sophie Goloff, New York University; Sarah Doerrer, George Washington University

PURPOSE

Finger proximal interphalangeal joint (PIP) flexion contracture resulting from injury is a commonly seen diagnosis in hand therapy. This diagnosis often has complex anatomical involvement and is notoriously stubborn to treat, with a wide range of treatment approaches used and variable patient outcomes. There is a lack of evidence on the optimal hand therapy interventions for this diagnosis. This modified Delphi study was designed to provide clinically relevant information via the insights of an expert panel which can be used to inform both current practice and future research efforts. The specific purpose of this study was to determine consensus of a panel of experts on PIP joint flexion contracture regarding recommended hand therapy assessment and clinical treatment for individuals with this diagnosis.

METHODS

This IRB approved project followed a modified Delphi approach, utilizing iterative rounds of online surveys to determine consensus among a panel of experts. The "Checklist for Reporting Results of Internet E-Surveys" (CHERRIES) and the DELPHISTAR Delphi Reporting Guideline were consulted throughout all phases of the project. The project and surveys were designed and analyzed by a consensus paper steering committee involving members of the XXXX and experienced hand therapists in both academic and clinical settings. An initial pool of experts was identified using the following criteria: (1) occupational or physical therapist who provided hand therapy (direct or consultation) for individuals with PIP flexion contracture in the past year and (2) at least one professional publication or presentation related to the assessment or treatment of PIP flexion contracture in the last 5 years. This initial pool of experts was then asked to identify additional potential experts meeting the above criteria. The study was conducted via two online Qualtrics surveys distributed via email. Survey 1 was designed based on existing literature and clinical experience of the steering committee; Survey 2 iterated on expert panel responses and feedback to Survey 1 to clarify results and progress toward consensus. Survey data was extracted from Qualtrics and analyzed via descriptive statistics (mean, SD, frequencies and percentages). For consensus items, consensus was considered achieved at 75% expert agreement (determined a priori based on recommended thresholds). All survey responses were used in the data analysis based on the number of experts that answered each particular question. When analyzing the responses to the 4-point Likert scale questions, the options of "always" and "often" were combined when determining consensus based on previous literature. The "sometimes" and "never" options were maintained as separate responses during data analysis. All responses written in the "other" option were evaluated and incorporated into the second survey and/or discussion of the study results.

RESULTS

A total of 38 PIP flexion contracture experts were identified and invited to participate in the study. Twenty-four agreed that they met inclusion criteria and agreed to participate. Experts were primarily certified hand therapists (90%) practicing in suburban (60%) or urban (30%) settings in the U.S. (86%) and averaged 38.8 years of practice experience (range: 10-47 years) (Table 1). For Survey 1, 21 of 24 experts initiated the survey, with 17 reaching the end. For Survey 2, 20 experts initiated the survey, with 18 reaching the end. See Figure 1 for the modified Delphi process flow chart for this study. The experts agreed (13/17 responses, 76%) that a PIP joint flexion contracture is defined as any amount of loss of passive PIP joint extension. There was also consensus that, assuming all underlying structures are sufficiently healed/stable for safe participation, an individual with a PIP joint flexion contracture is an appropriate candidate for skilled therapy when there is a functional limitation (17/20, 85%), when pain is present (15/20, 75%) or when there is a deficit in AROM (18/20, 90%) or PROM (17/20, 85%). Experts also reached consensus regarding important factors to assess for this patient population (Table 2), specific range of motion assessments to use (Table 3), recommended skilled therapy interventions (Table 4), and variables to consider in determining the most appropriate orthosis (Figure 2).

CONCLUSION

The findings of this study provide a reference tool for the clinical management of PIP joint flexion contractures in hand therapy. Furthermore, the knowledge generated by this study can help inform future research directions for this patient population, specifically in areas such as the use of orthoses which did not reach consensus to offer clear treatment direction.

Uploaded File(s)

Upload Tables & Images

XKRVDVFH-2411690-3-ANY.docx

Table1 : Demographics of the Experts (N=21)

Demographic Variable	Response	N(%)
Profession	Occupational Therapist	11(52)
	Physical Therapist	10(48)
Highest Level of Education	Bachelor's degree	1 (5)
	Master's degree	8(38)
	Clinical doctorate	9(43)
	Academic doctoral degree	3(14)
Certified Hand Therapist	Yes	19(90)
	No	1(5)
	Credential not recognized	1 (5)
Country of Practice	United States	18 (86)
	Australia	3 (14.2)
Geographical Setting of practice	Urban	6 (30)
	Suburban	12(60)
	Rural	3 (15)
	Other	1 (5)
Current Primary Practice Setting	Hospital-based outpatient clinic	5(25)
	Academic-based hospital clinic setting (outpatient)	2(10)
	Physician-owned outpatient clinic	6(30)
	Therapist-owned outpatient clinic	2(10)
	Corporate-owned freestanding outpatient clinic	2(10)
	Industry	1(5)
	Other: (consulting)	2(10)
Hours in direct patient care	0-9 hours/week	6(30)
	10-19 hours/week	1(5)
	20-29 hours/week	3(15)
	30-40 hours/week	8(40)
	More than 40 hours/week	2(10)

Table 2: Expert Panel Recommendations for Factors to Assess in Individuals with PIP Joint Flexion Contractures

Functioning and Disability	n / total (%)
Body Structures	16/17 (94)
Edema	16/17 (94)
via circumferential measurement of involved PIP joint	14/18 (76)
Skin integrity	18/19 (95)
Capsular tightness and/or ligament laxity/stability	18/19 (95)
Clinical signs:	
Extrinsic flexor tightness	14/17 (82)
Unofficial "Pencil Test"	13/17 (76)
Determine joint end feel	17/18 (94)
Assess for PIP joint tenderness	18/18 (100)
Body Functions	16/17 (94)
Range of motion	17/17 (100)
Pain	17/17 (100)
via Numerical Pain Rating Scale	14/17 (82)
Activities and Participation	16/17 (94)
Function	16/17 (94)
via observation of activity performance	17/17 (100)
via UE region-specific PRO measure	14/17 (82)
Contextual Factors	n / total (%)
Personal Factors	16/17 (82)
Occupations / work demands	17/19 (89)
Pertinent medical history, relevant comorbidities	17/19 (89)
History of the current injury	17/19 (89)
Expectations for recovery	17/19 (89)
Psychosocial factors	13/17 (76)
Anxiety and/or depression	14/18 (78)
Cognition	15/18 (83)
Fear avoidance	14/18 (78)
Self-efficacy	14/18 (78)
Level of engagement in rehabilitation or therapeutic alliance	17/18 (94)

*Survey responses/any responses given to questions were used in the data analysis even if the survey was not fully completed. When analyzing the responses to the 4-point Likert scale questions, the options of "always" and "often" were combined when determining consensus based on previous literature.

Table 3: Range of Motion Assessment Recommendations from the Experts

Joint	Active ROM		Passive ROM		Notes		
	motion	n / total (%)	motion	n / total (%)	motion	n / total (%)	
MCP	Ext	17/17 (100%)	Ext	14/17 (82%)	Hyperext	14/17 (82%)	
	Flex	15/17 (88%)					
PIP	Ext	17/17 (100%)	Ext	14/17 (82%)	EFT with wrist in flex /ext	14/17 (82%)	
	Flex	17/17 (100%)	Flex	14/17 (82%)			
DIP	Ext	17/17 (100%)	Ext	15/17 (88%)	Hyperext	13/17 (76%)	
	Flex	16/17 (94%)	Flex	14/17 (82%)	Isolated DIP flex/lateral band glide/ORL stretch	16/17 (94%)	
Composite / Multi-joint	Composite Ext	17/17 (100%)					
	Composite Flex	17/17 (100%)					
	Hook Fist	14/18 (78%)					

*MCP = metacarpal phalangeal, PIP = proximal interphalangeal, DIP = distal interphalangeal, ext = extension, flex = flexion, hypertext = hyperextension, EFT = extrinsic flexor tightness, ORL = oblique retinacular ligament

Table 4: Expert Panel Recommendations for Skilled Interventions for Individuals with PIP Joint Flexion Contractures

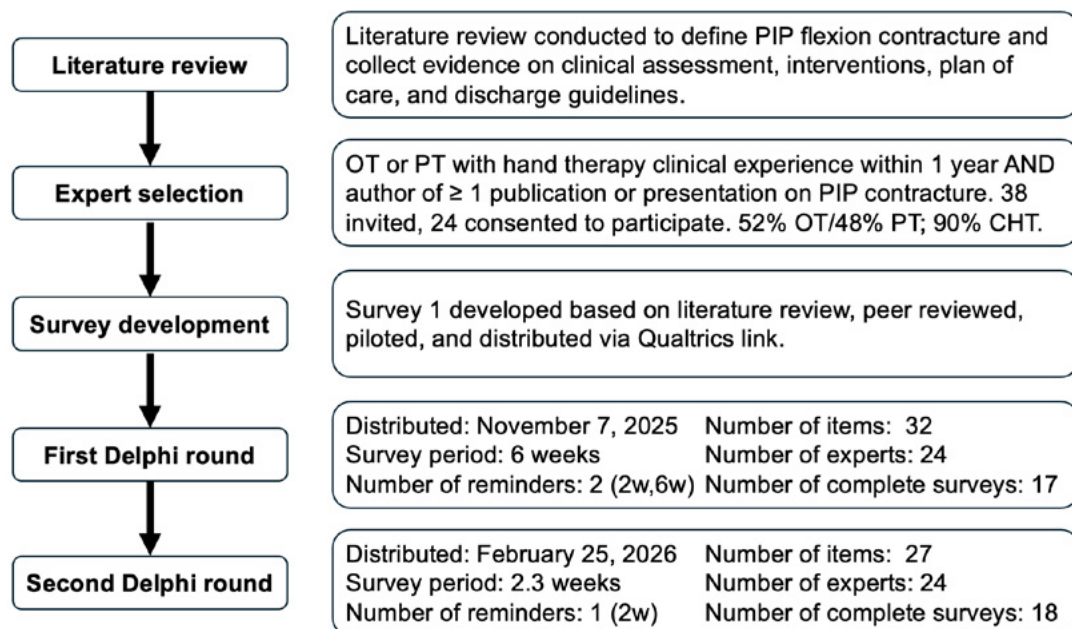
Treatment for PIP Joint Flexion Contracture	n / total (%)
Modalities	
Moist hot pack	13/17 (76)
Heat and stretch in HEP	14/17 (82)
Exercises and HEP	
Passive or self-stretch PIP ext	16/17 (94)
Active PIP ext with MCPs in flex	16/17 (94)
Active DIP flexion exercises holding the PIP in ext	17/17 (100)
Tendon gliding (HEP only)	14/17 (82)

Orthoses	
Serial static	13/16 (81)
Circumferential design	16/17 (94)
Worn during sleep if RMF worn during day	14/18 (78)
RMF	12/16 (75)
Used with MCP hypertext	16/18 (89)
Used if PIP ext improves with MCP flex	13/17 (76)
Made of thermoplastic sheet material	15/18 (83)
Worn during daytime	17/18 (94)
Weaned when active PIP ext not changing	14/17 (78)
Patient Education	
Anatomy	16/17 (94)
Principles related to increasing ROM	16/17 (94)
Use and purpose of orthoses	17/17 (100)
Expected timeline of treatment	17/17 (100)
Edema, pain, and scar management when present	16/17 (94)

*Survey responses/any responses given to questions were used in the data analysis even if the survey was not fully completed. When analyzing the responses to the 4-point Likert scale questions, the options of "always" and "often" were combined when determining consensus based on previous literature.

**PIP = proximal interphalangeal, HEP = home exercise program, ext = extension, MCP = metacarpal phalangeal

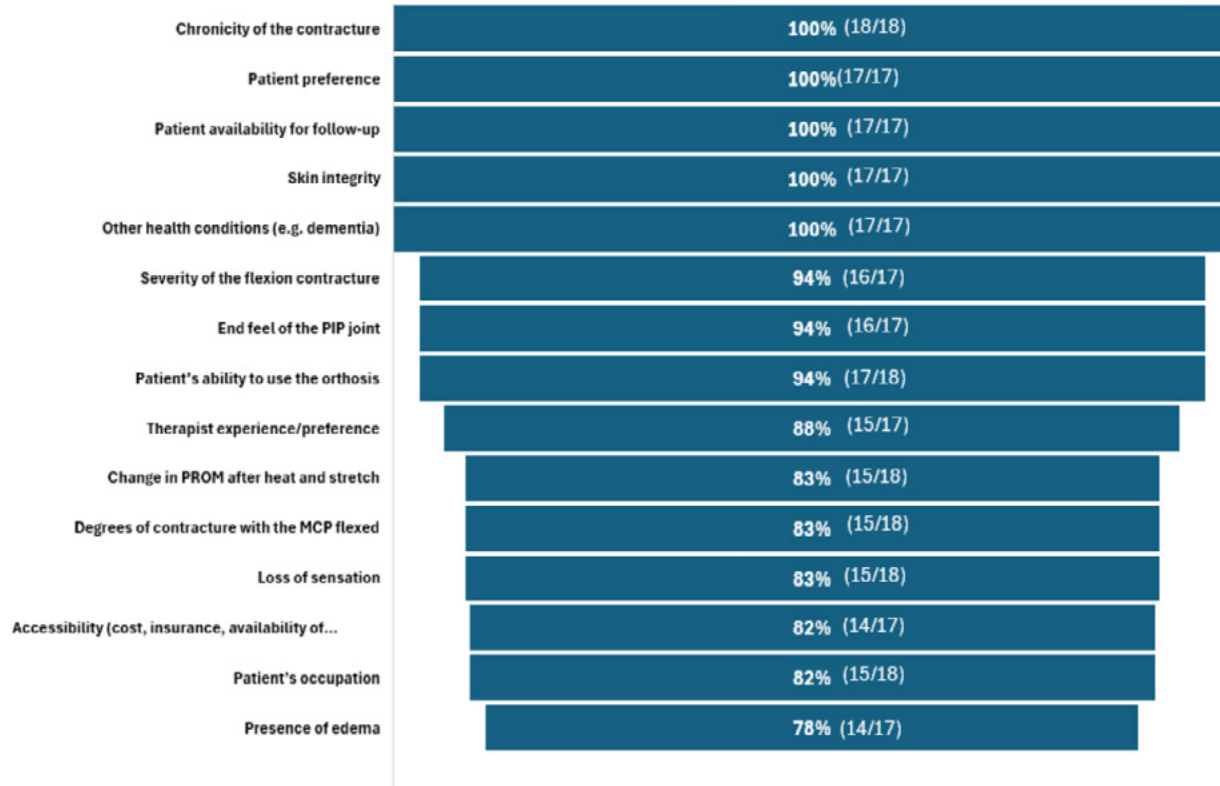
Figure 1: Modified Delphi Process Flow Chart



* PIP = proximal interphalangeal, OT = occupational therapist, PT = physical therapist, CHT = certified hand therapist

Figure 2: Expert Panel Recommendations of Variables to Consider When Selecting an Orthosis for an Individual with a PIP Joint Flexion Contracture

% (n/total responses)



Submission ID#2412965

CHARACTERISTICS OF THUMB EXTENSOR MUSCLES ACTIVITY WITH AND WITHOUT A THUMB SPICA SPLINT DURING ADL ACTIVITIES, AMONG PEOPLE WITH DE-QUERVAIN'S TENOSNOVITIS

Author(s): Yafi Levanon, Ben Gurion University; Noa Shirvan, Optimic Point; Sigal Portnoy, Tel Aviv University; Ram Palti, Sheba Medical Center

PURPOSE

De Quervain's syndrome is characterized by pain on the radial side of the wrist, leading to significant limitations in daily functioning and reduced grip and pinch strength. Despite the widespread use of conservative treatment approaches, particularly splinting, there is no consensus regarding optimal usage protocols or their effectiveness. It is hypothesized that splinting provides rest to the thumb extensor tendons, thereby reducing friction between the tendons and the retinaculum and consequently decreasing the inflammatory process. The aim of the present study was to examine whether splint use during functional activity reduces activity of the thumb extensor muscles, or, alternatively, increases resistance to movement, thereby increasing muscular load and potentially exacerbating symptoms.

METHODS

Seventeen participants aged 21–60 years, referred for occupational therapy in a community setting for pain in the first dorsal compartment of the extensor tendons, were recruited per the study's inclusion criteria. Following a standard intake process, demographic data was collected from medical records, and each participant provided informed consent. Participants completed the extended version of the Standardized Nordic Questionnaire (SNQ) to assess pain over the past year and past week, as well as symptom severity. After individual fitting of a Thumb Spica splint, surface EMG electrodes were placed on two channels: one representing the abductor pollicis longus (APL) muscle and one representing the overall thumb extensor muscle group. Participants performed functional tasks selected from the MY ADL assessment, as well as grip and pinch strength tests, both with and without the splint.

RESULTS

Mean muscle activity was significantly lower with the splint compared to without the splint in only one functional task—computer use—and in one measurement channel representing the thumb extensors ($t = -3.34$, $p = .004$, $d = -0.81$). Additionally, during bottle opening, pain intensity was significantly reduced when using the splint compared to performing the task without it ($Z = -2.5$, $p = .011$, $r = -0.61$). No significant differences were found in muscle activity across other functional tasks or in strength measurements. A two-way repeated measures ANOVA revealed a significant interaction between splint use and task type in the channel representing the extensor muscles only ($F = 3.7$, $p = .043$, $\eta^2 = .76$).

CONCLUSION

The study hypothesis was partially supported. The findings suggest that splint use may reduce muscle activity during computer-related tasks and decrease pain during rotational activities such as bottle opening. However, no consistent effects were observed across all tasks. These findings highlight the importance of individualized splint use, tailored to each patient's symptoms, functional patterns, and activity demands.

Uploaded File(s)

Upload Tables & Images

Surface Emg electrode location

Submission ID#2413084

ACCEPTABILITY OF ORTHOTIC DEVICE FABRICATION FOR TRIGGER FINGER SYNDROME: COMPARISON OF MANUAL METHODS AND 3D PRINTING

Author(s): Léa-Jade Boutin, Université du Québec à Trois-Rivières; Emma Brown, Université du Québec à Trois-Rivières; Matthew Adams, Université de Sherbrooke; Étienne Penelle, Université de Sherbrooke; Stéphane Bedwani, Université de Montréal; Nicola Hagemester, École de technologie supérieure; Mathilde Jean-St-laurent, Université du Québec à Trois-Rivières; William Beauchemin, Université de Montréal; Tokiko Hamasaki, Université du Québec à Trois-Rivières; Laura Dufort-Gagnon, Université de Montréal

PURPOSE

Traditional trigger finger orthotics manufacturing relies on a manual thermoforming process, while 3D printing is an emerging approach aimed at improving patient comfort and the accessibility of these devices. This study aimed to compare the perception of the two methods for trigger finger orthoses among potential users in training.

METHODS

Twenty occupational therapy students learned to make two types of orthotics and then wore them each for 24 hours. Clinical acceptability (comfort and satisfaction) was measured using the QUEST 2.0 questionnaire, and other factors (ease of use, competence, training, motivation, usefulness) were assessed via an in-house questionnaire. Practical aspects (cost and production time) were also evaluated.

RESULTS

3D-printed orthoses proved superior: patient satisfaction with orthotic wear was higher (QUEST 2.0 total score (36.2 ± 3.7 vs. 32.0 ± 5.5 ; $p = 0.005$)), and patient time spent on the orthotic device was reduced (3.4 ± 1.0 minutes vs. 5.8 ± 2.6 minutes; $p < 0.001$). The perceived usefulness of the technology was significant ($8.2 \pm 1.5/10$). Acceptability of the manufacturing method was similar for both groups.

CONCLUSION

The study supports the integration of digital technology in rehabilitation and paves the way for clinical trials. 3D printing of orthotics could improve the patient care experience while optimizing the manufacturing process. Furthermore, the automated nature of 3D printing can decrease the amount of manual effort required from occupational therapists, allowing them to dedicate more time to patient care. Additionally, the light and breathable structure of 3D-printed orthoses may help reduce the risk of skin irritation over the course of long-term treatment.

Uploaded File(s)

The demographic characteristics of the sample is presented in Table 1|

Table 1. Demographic characteristics of the participants

Factor	Participants (n=20)
Age, years, mean ± standard deviation	22.3 ± 1.7
Sex, female, n (%)	13 (65)
Hand dominance, n (%)	Right 18 (90)
Ethnicity, n (%)	Caucasian 20 (100)

Table 2. User satisfaction (QUEST 2.0)

Criteria	Thermoformed orthoses (n=20)		3D-printed orthoses (n=20)		Statistical test	p value
	Mean	SD	Mean	SD		
Dimensions	3.9	1.1	4.1	1.2	Wilcoxon	0.572
Weight	4.7	0.6	5.0	0.2	Wilcoxon	0.058
Ease in adjusting	3.6	1.2	4.3	0.9	Wilcoxon	0.014*
Safety	4.5	1.0	4.6	0.6	Wilcoxon	0.791
Durability	3.5	1.4	4.8	0.4	t test	0.001*
Ease to use	4.7	0.6	4.8	0.6	Wilcoxon	0.739
Comfort	3.3	1.2	4.2	0.9	t test	0.004*
Effectiveness	4.0	0.9	4.6	0.6	Wilcoxon	0.015*
Total score	32.0	5.5	36.2	3.7	Wilcoxon	0.005*

Note: SD represents standard deviation. *p<0.05

Table 3. Perception of the orthosis fabrication process

Criteria	Thermoforming fabrication		3D-printing fabrication		Test	P value
	Mean	SD	Mean	SD		
Ease of fabrication	7.7	1.5	8.1	1.5	t test	0.464
Perceived competence	7.3	1.8	8.2	1.6	t test	0.141
Training received	8.8	1.0	9.0	1.6	t test	0.643
Motivation	8.5	1.5	8.5	1.3	t test	1.000

Table 4. Production time

	Thermoforming fabrication		3D-printing fabrication		Statistical test	p-value
	Mean	SD	Mean	SD		
Direct labour time for clinicians	5.8 min	2.6 min	3.4 min	1.0 min	Wilcoxon	<0.001*
Printing	-	-	5 h 10 min**	-	-	-
Cleaning	-	-	30 min	-	-	-
Curing	-	-	1 h	-	-	-
Finishing	-	-	About 1 min	-	-	-

Table 5. Material cost

	Thermoforming orthoses	3D-printing orthoses
Cost per unit	CAS\$4.87/sheet of 18 inches (45.72 cm) × 24 inches (60.96 cm)	CAS\$0.30/ml
Required quantity	5 mm × 15-20 cm	9.07 – 13.27 ml
Cost per participant**	CAS\$0.23-\$0.30	CAS\$2.72 - \$3.98

** An orthosis by thermoforming fabrication, and three orthoses by 3D-printing



Figure 1 Rendered 3D model of an orthosis for trigger finger



Figure 2 3D-printed orthosis for trigger finger



Figure 3 Measuring for the length of the thermoplastic strip



Figure 4 Thermoformed orthosis

Submission ID#2414279

EARLY RETURN TO CLIMBING FOLLOWING FLEXOR PULLEY INJURY USING A STANDARDIZED PULLEY RING ORTHOSIS AND FUNCTIONAL REHABILITATION PROTOCOL

Author(s): Mitzi L. Harrison, Certified Hand Therapy Services, LLC

PURPOSE

Flexor pulley injuries are prevalent among rock climbers and are traditionally managed with activity restriction and delayed return to sport despite preserved functional capacity. This approach may prolong recovery and limit patient participation. The purpose of this study was to evaluate clinical outcomes of a standardized pulley ring orthosis integrated within a structured early return-to-climbing rehabilitation protocol. This study aims to determine whether controlled early loading allows safe continuation or accelerated return to climbing while maintaining tendon integrity and functional recovery.

METHODS

A retrospective cohort study was conducted using clinical data from climbers treated for A2 and/or A4 pulley injuries at a specialized hand therapy practice. Participants included adult recreational and competitive climbers diagnosed via clinical examination and diagnostic ultrasound. Inclusion criteria consisted of confirmed partial or complete pulley injury managed with a clinic-fabricated pulley ring orthosis and participation in a standardized rehabilitation protocol permitting graded return to climbing. The intervention combined immediate orthotic support designed to approximate the flexor tendon to the phalanx with progressive loading based on symptom response and functional tolerance. Primary outcomes included time to return to climbing, continuation of climbing during rehabilitation, pain (VAS), and re injury incidence. Secondary outcomes included grip strength recovery and functional performance. Descriptive and subgroup analyses were performed based on injury severity.

RESULTS

A retrospective cohort study was conducted using clinical data from climbers treated for A2 and/or A4 pulley injuries at a specialized hand therapy practice. Participants included adult recreational and competitive climbers diagnosed via clinical examination and diagnostic ultrasound. Inclusion criteria consisted of confirmed partial or complete pulley injury managed with a clinic-fabricated pulley ring orthosis and participation in a standardized rehabilitation protocol permitting graded return to climbing. The intervention combined immediate orthotic support designed to approximate the flexor tendon to the phalanx with progressive loading based on symptom response and functional tolerance. Primary outcomes included time to return to climbing, continuation of climbing during rehabilitation, pain (VAS), and re injury incidence. Secondary outcomes included grip strength recovery and functional performance. Descriptive and subgroup analyses were performed based on injury severity.

CONCLUSION

A standardized pulley ring orthosis combined with a structured early return-to-climbing protocol appears to be a safe and effective approach for managing flexor pulley injuries across a range of severities. This model supports controlled early loading and earlier return to sport without increased risk of re injury, offering an alternative to traditional immobilization-based management. Clinical Implication: Hand therapists can implement a structured, orthosis-supported early loading strategy to optimize recovery timelines, maintain athlete participation, and improve functional outcomes in climbers with pulley injuries.

Uploaded File(s)

Upload Tables & Images

Diagnostic US of A2 Pulley

Submission ID#2414343

DEVELOPMENT AND PILOTING OF AN ORGANIZATIONAL TOOLKIT TO IMPLEMENT UPPER EXTREMITY INJURY PREVENTION IN COLLEGIATE MUSIC PROGRAMS: THE MUSCULOSKELETAL HEALTH FOR MUSICIANS PROJECT

Author(s): Aviva L. Wolff, Hospital for Special Surgery; Courtney Dougherty, Hospital for Special Surgery; Carlo Milani, Hospital for Special Surgery; Laura Robbins, Weil Cornell Medicine

PURPOSE

Performance-related musculoskeletal disorders (PRMD) affect up to 93% of musicians, with especially high upper extremity incidence among students. Despite effective prevention strategies, music schools rarely integrate them due to cultural, structural, and organizational barriers. Phase 1 of this project, completed across four schools, identified institution-specific barriers (time, space, awareness, resources) and facilitators (faculty champions, student interest, administrative support). The purpose of Phase 2 was to develop and pilot test the Musculoskeletal Health for Musicians (MHM) Organizational Toolkit to address these barriers within collegiate music programs.

METHODS

The toolkit included five modules (upper extremity injury causes, upper extremity injury prevention, pain management, instrument-specific risks, posture/ergonomics) delivered in instructor-led or self-directed formats, with strategies tailored to site-specific barriers identified in Phase 1. Each school ran a 12-week program led by three institutional champions (faculty, administrator, student). Implementation outcomes were assessed using fidelity checklists and three validated measures completed by 12 respondents: the Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), and Feasibility of Intervention Measure (FIM). Follow-up interviews examined contextual influences. Descriptive statistics summarized implementation outcomes, fidelity, and attrition.

RESULTS

Implementation reached several hundred students. Mean fidelity across sites was 78% (range 47–100%). Acceptability was high (AIM 4.75 ± 0.62), appropriateness was moderate (IAM 4.31 ± 0.69), and feasibility was more variable (FIM 3.81 ± 0.49). Students tended to rate appropriateness and feasibility higher than faculty and administrators. Two types of attrition emerged: student participation attrition, with approximately 63% completing all modules, and stakeholder engagement attrition, as enthusiasm among champions and administrators waned with competing demands. Customization improved feasibility: one school embedded modules into orientation to address time constraints; another emphasized digital resources to offset budget limitations. Qualitative feedback reinforced that leadership support and institutional priorities drove both uptake and engagement attrition.

CONCLUSION

This two-phase study demonstrated the feasibility and acceptability of an organizational toolkit tailored to barriers and facilitators of upper extremity injury prevention education in music schools. The MHM Toolkit offers a sustainable approach to embedding injury prevention into collegiate music programs, while underscoring the need for strategies to maintain student participation and long-term stakeholder engagement. Clinically, these findings indicate that implementation success in music education settings depends not only on program content but on systematic attention to institutional context, champion support structures, and flexible delivery formats. These results provide the groundwork for a large-scale hybrid effectiveness-implementation trial to evaluate the MHM Toolkit's impact on PRMD outcomes across diverse music school settings.

Submission ID#2416531

HAND THERAPY CLINICAL DOCUMENTATION: EXAMINATION OF PROCESSES AND MATERIALS VIA CLINICIAN INTERVIEWS

Author(s) Katherine Loomis, University of Southern California; Shawn Roll, University of Southern California

PURPOSE

Large-scale analysis of real-world hand therapy (HT) clinical data from settings across the U.S. can reveal nation-wide trends and variability in practice patterns, providing valuable insights to inform future efforts to maximize care effectiveness for diverse patient populations. Preliminary investigations have begun to evaluate the feasibility of accurately synthesizing data across HT practice settings. Yet, to date, there is very little information on the specifics of how or what clinical information is recorded across contexts to understand current levels of interoperability. Therefore, the purpose of our study was to: (1) identify elements that are similar or distinct across documentation systems and practices and (2) explore contextual factors that influence the completion of clinical documentation.

METHODS

We explored HT clinical documentation processes and materials via semi-structured clinician interviews and document reviews. Clinicians were recruited from a pool of U.S.-based hand therapists who completed a 2024 survey on clinical documentation and expressed interest in participating in ongoing research. They were invited to participate via email in February 2025, and interviews were conducted in March-April 2025. To participate, clinicians were required to provide copies of documentation materials (forms, tools, health record interfaces) they routinely used across 4 categories: initial evaluations, treatment notes, formal reassessments, and discharge summaries. Semi-structured interviews (median: 41mins) were conducted via Zoom by two clinician researchers experienced in upper extremity rehabilitation and interview-based research. Interviewers used an interview guide and clinician-provided documentation materials to facilitate detailed discussions on HT documentation practices and clinical data features. The lead researcher used data collection spreadsheets developed from initial interview notes to extract and synthesize information on HT clinical data content and structure from the provided materials, and the interview transcripts were further examined for contextual factors impacting how documentation is completed. All intermediate findings were iteratively discussed amongst the study team throughout data extraction and analysis to arrive at the final results.

RESULTS

Of the 72 clinicians in the recruitment pool, 12 (17%) expressed interest in participating in the study, and 9 (13%) received approval to share their documentation materials to complete the interview. Clinicians were all female occupational therapists (OTs), most of whom were certified hand therapists (n=7), with a median of 24 years of HT experience (range: 2-38) and holding various roles. They practiced in 8 different states in either freestanding (n=7) or hospital-based (n=2) outpatient clinics in suburban (n=6), rural (n=2), and urban (n=1) areas. They used 7 unique electronic documentation systems, which were linked to healthcare networks (n=4), to a single larger entity (n=2), or internal only (n=2). Initial evaluations were the only documentation type for which all clinicians used distinct, dedicated materials (rather than modifying a common template). Most materials, including initial evaluations, used a 'SOAP' (Subjective, Objective, Assessment, and Plan) organization (sometimes modified with additional sections). However, there was variability in the content within each SOAP section (Table 1), with varying types of information, such as a wide range of patient-reported outcomes, being recorded in different sections across materials. Data capture was most structured in initial evaluations (tables/cells) and least structured in treatment notes (freeform text). Clinicians highlighted flexibility, especially for initial evaluation materials, with most free to extensively add/delete data fields and customize templates as needed or preferred. Within each data type (e.g., pain), there was often wide variability in data structure (number of fields, datapoints per field, numeric vs. text) and data entry interfaces (menu vs. free entry, etc.). Five categories of factors emerged that influenced how clinicians completed documentation, building on beliefs about the core purposes of documentation (Figure 1). These categories existed within 3 nested levels: (1) clinician, documentation system, and patient factors, (2) clinical environment factors, and (3) external factors.

CONCLUSION

Our findings provide a detailed preliminary understanding of the variability in HT clinical data organization, content, and form across different contexts. Considering the extensive variability in documentation practices, influencing factors, and resulting data (even in this limited sample), it is likely that considerable effort will be needed to improve HT clinical data interoperability to enable successful synthesis across the profession for meaningful, impactful analyses.

Uploaded File(s)

Upload Tables & Images

Table 1. Clinical data captured in modified SOAP note-based sections across therapists' hand therapy documentation materials

Modified SOAP note section	Clinical data types
General patient information	Demographics (hand dominance) * Diagnosis information (diagnosis, date of onset/injury/surgery, injury history, precautions/protocol) * Patient/family goals * Other medical history (allergies) * Occupational/activity history *
Subjective	Demographics (hand dominance) * Diagnosis information (date of onset/injury/surgery, injury history) * Other medical history (co-morbidities, allergies) * Occupational/activity history * Prior level of function Functional environment (physical, social) Work/activity status, current level of function Pain, sensation, hypersensitivity * Other symptoms (e.g., stiffness, fatigue) Patient-reported outcome measures (PROMs) * Patient/family goals *
Objective	Functional assessments and patient-reported outcome measures (PROMs) * Biomechanical measures (active/passive range of motion, strength, edema) Visual assessment (appearance of skin/scar/incision/wound, posture/guarding/compensatory patterns) Pain, sensation, hypersensitivity * Provocative tests, signs, palpation Diagnosis information (precautions) * Treatment provided (interventions, duration) *
Treatment <i>as separate section</i>	Home exercise program provided * Treatment provided (various interventions, duration) * Home exercise program provided *
Splinting/orthoses <i>as separate section</i>	Treatment provided (orthoses fabricated/provided/modified) *
Assessment	Patient-reported outcome measures (PROMs) * Problem/impairment list * Assessment/treatment tolerance, modifications, and effort Progress overall and with specific therapy outcomes Other rehabilitation measures (potential, complexity level) * Therapy goals * Recommended frequency/duration *
Goals <i>as separate section</i>	Therapy goals * Patient/family goals *
Plan	Planned interventions Recommended frequency/duration * Treatment provided (interventions, duration) * Home exercise program provided *
Problem list <i>as separate section</i>	Problem/impairment list * Rehabilitation measures (complexity level) *

* Data type observed to be captured in 2 or more different sections

NOTE: This data represents only what was explicitly apparent from interviews and inspection of provided documentation materials. It is not intended to be a comprehensive representation of all data that is or can possibly be captured in documentation using materials provided by clinician participants.

Figure 1. Multi-level factors impacting how hand therapists complete clinical documentation

Submission ID#2417296

COMPARING THE EFFECTIVENESS OF THE 'THINK IN NERVE LENGTH AND LAYERS' APPROACH TO TRADITIONAL TREATMENT FOR PATIENTS WITH LATERAL ELBOW PAIN

Author(s) Christa Schestag, University of Vermont Medical Center; Chelsea Witt, UVMMC; Jennifer Elsinger, UVMMC; Victoria Priganc, UVM; Maria Skolnick, UVM; Erynn Ferraro, UVMMC; Ann Feretti, UVM

PURPOSE

"Think in Nerve Length and Layers" (TINLL) is a novel framework developed by hand therapists to address lateral elbow pain by targeting muscle imbalance, radial nerve tension, and joint misalignment associated with forearm positioning. The purpose of this prospective, quasi-experimental study was to compare an intervention protocol based on the TINLL approach to traditional (TRAD) treatment for lateral elbow pain to determine whether changes occur in pain, function, and pain free grip strength.

METHODS

This study was conducted in an outpatient hand-therapy clinic at a large university hospital. All patients referred for lateral elbow pain were screened using predefined criteria. Inclusion criteria included English-speaking adults ≥ 18 years with lateral elbow pain or lateral epicondylitis. Exclusion criteria included cognitive impairment, mandated reporters, surgical or postsurgical cases, carpal or cubital tunnel syndrome, medial elbow pain, and prior PRP/PNT. Patients who had a previous course of traditional therapy were assigned to the TINLL group; all others were randomized to either group. TINLL participants were treated biweekly for 4 to 6 weeks; the traditional group patients were treated weekly for 4 weeks with an option to transfer to the TINLL group at week 4. TINLL interventions included mobilization with movement of the radial head, ergonomics, isometric strengthening, and kinesiology taping to influence muscle activity and support joint alignment. Traditional care included kinesiology taping to inhibit wrist extensors, soft-tissue mobilization to the dorsal forearm, stretching and strengthening of wrist and digit extensors, ergonomic education and orthosis intervention as indicated. Outcome measures included numerical pain rating, the Patient-Rated Tennis Elbow Evaluation (PRTEE), and pain-free grip strength in provocative position. Paired-samples t-tests and repeated-measures models were used to examine changes over time. Time by Group was defined as the amount of improvement seen at each time point. SPSS (Statistical Package for the Social Sciences) and R (R Foundation for Statistical Computing) were used to analyze data using a paired samples t- test to compare means of all outcome measures at baseline and 4-weeks.

RESULTS

The study included 34 participants in the TINLL group and 15 in the TRAD group. The TINLL group demonstrated a significant Time by Group interaction for pain-free grip strength ($p = 0.012$), showing earlier and more noticeable improvement. TINLL pain-free grip strength increased by 32.3 pounds by week 4 (standard error [SE] = 4.28, $p < 0.001$) compared to the TRAD group which increased by 14.1-pound by week 4 (SE = 5.47, $p = 0.115$ after Tukey adjustment) (See Figure 1). A statistically significant difference in total therapy time was observed between groups, with participants in the TINLL group requiring less cumulative treatment time than those in the TRAD group (TINLL: 94.0 vs. TRAD: 207.9 total minutes; $p < 0.001$). PRTEE scores improved significantly over time in both groups ($p < 0.001$). Worst pain scores also improved significantly over time ($p < 0.001$) with both groups.

CONCLUSION

Both treatment approaches led to meaningful improvements in pain, function, and pain-free grip strength over time; however, the TINLL approach demonstrated earlier and greater gains in pain-free grip strength. These findings suggest that TINLL may accelerate strength-related recovery more effectively than traditional interventions while achieving comparable pain reduction and functional improvement. Significantly reduced total therapy time further supports the efficiency of the TINLL approach relative to traditional treatment. Clinically, earlier increases in pain-free grip strength may allow patients to resume strength-dependent activities sooner, supporting TINLL as a potentially more efficient intervention for lateral elbow pain. Based on these results, integration of the TINLL framework into routine clinical practice may enhance treatment efficiency and functional outcomes. Limitations include lack of blinding and nonuniform group assignment, as participants with prior therapy were assigned to TINLL, while those without prior therapy were randomly scheduled into groups, potentially introducing bias.

Uploaded File(s)

Upload Tables & Images

Think in Nerve Length and Layers Figures

Figure 1: Pain free grip over time (initial – 4-weeks)

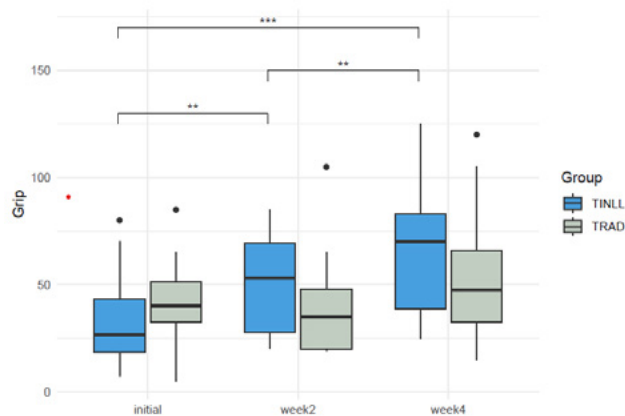


Figure 2: PRTEE scores between treatments over time (initial – 4-weeks)

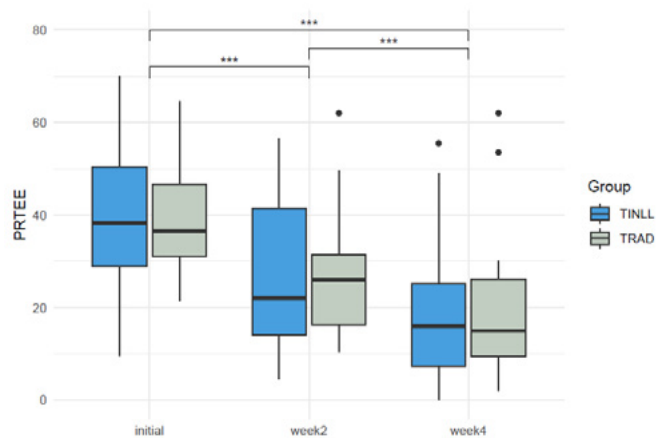
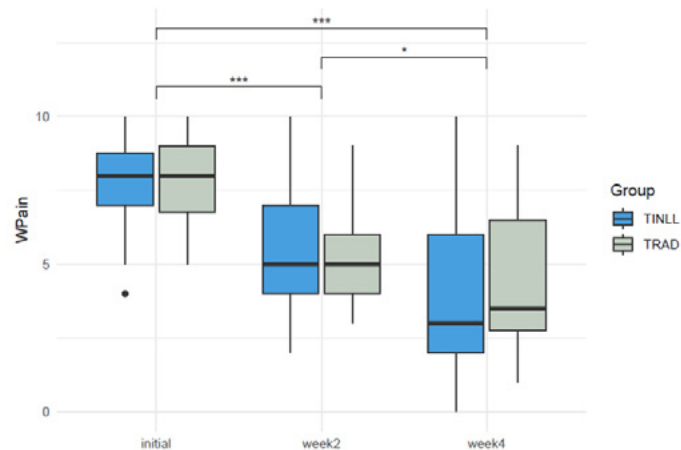


Figure 3: Patient reported worst pain between treatments over time (initial – 4-weeks)



Submission ID#2418530

GEOGRAPHIC DISPARITIES IN ACCESS TO HAND THERAPY IN WEST VIRGINIA: A COUNTY-LEVEL ANALYSIS

Author(s) Vanessa I. Batubo, St. George's University School of Medicine, Grenada; Isabella Benintendi, West Virginia University; Kerri Woodberry, West Virginia University

PURPOSE

Hand injuries and conditions frequently require specialized rehabilitation to restore function following surgical or conservative management. Despite this need, access to Certified Hand Therapists (CHTs) remains uneven, particularly in rural regions. Limited availability of CHTs may contribute to delays in care, increased travel burden, and suboptimal functional outcomes. This study aims to quantify geographic disparities in access to hand therapy by evaluating the distribution of CHTs relative to county population across West Virginia and to identify regions with limited access to specialized care.

METHODS

A cross-sectional observational study was conducted using secondary data from the National Provider Identifier registry and the Hand Therapy Certification Commission directory. Certified hand therapists and physical therapy facilities were identified and mapped by county across West Virginia. Facilities were excluded if permanently closed or not linked to a valid in-state address. County-level socioeconomic data, including poverty rates, were obtained from U.S. Census data. Driving distance and time from county seats in high-poverty counties to the nearest county with a CHT were calculated. Primary outcomes included the number of CHTs per county and geographic access to the nearest CHT. Descriptive and geographic analyses were performed to assess disparities.

RESULTS

A total of 68 eligible hospitals and physical therapy centres were identified across West Virginia. Only 29 Certified Hand Therapists were distributed across 11 of 55 counties, leaving 80% of counties without local access to CHT services. Although 57 facilities advertised hand or upper-extremity therapy services, only 20 employed a Certified Hand Therapist, highlighting a mismatch between service availability and specialized care. Counties with higher-than-average poverty rates were disproportionately affected, with several demonstrating complete absence of CHT coverage. Patients in these regions were required to travel to neighboring counties for care, often multiple times per week, with travel times reaching up to 119 minutes. Geographic analysis revealed substantial gaps in access to specialized hand therapy services across the state.

CONCLUSION

Significant geographic and socioeconomic disparities exist in access to Certified Hand Therapist services in West Virginia. These disparities may contribute to delays in care and increased financial and logistical burden for patients requiring specialized rehabilitation. Developing structured referral pathways and collaborative care models linking Certified Hand Therapists with general physical and occupational therapists in underserved areas may improve access to care. Enhancing care coordination and expanding support for general therapists managing hand conditions have the potential to reduce travel-related burden and improve rehabilitation outcomes, particularly for patients in low-resource settings.

ABSTRACTS

(abstracts are listed in numeric order by control ID number)

Uploaded File(s)

Upload Tables & Images

Counties	Number of hospitals & physical therapy centres	Number of CHTs
Monongalia	6	7
Kanawha	4	5
Cabell	1	2
Berkeley	1	2
Ohio	1	5
Greenbrier	1	1
Mason	1	1
Harrison	1	1
Putnam	1	1
Hancock	1	1
Wood	3	3

Title: Mapping all the available CHTs with the hospitals & physical therapy centres in West Virginia by counties								
Origin county (High Poverty)	Poverty (%)	County seat origin county	Number of CHTs	Drive Time (minutes)	Nearest county with CHTs	Nearest county seat with CHTs	Number of CHTs	Distance (miles)
Mingo	32.4	Williamson	0	93	Cabell//Putnam// Kanawha	Huntington// Winfield// Charleston	2	78
Lincoln	23.2	Hamlin	0	45// 43// 52	Cabell//Putnam// Kanawha	Huntington// Winfield// Charleston	2// 1// 5	28// 30// 36.1
McDowell	34.2	Welch	0	119	Greenbrier	Lewisburg	1	101
Summers	23.8	Hinton	0	48	Greenbrier	Lewisburg	1	43
Clay	26.4	Clay	0	57	Kanawha	Charleston	5	47
Calhoun	19.1	Grantsville	0	65	Wood	Parkersburg	3	47
Webster	23.3	Webster Springs	0	117	Greenbrier	Lewisburg	1	86

HEAT MAPS

Submission ID#2419121

MEMBER INVOLVEMENT AND ENGAGEMENT IN A HAND THERAPY PROFESSIONAL ORGANIZATION

Author(s) Sarah Doerrer, George Washington University; Rachel Metts, George Washington University; Julie Brody, Center for Advanced Orthopedics

PURPOSE

Professional organizations in healthcare, such as those related to hand therapy, are experiencing a decline in membership, although they offer valuable benefits such as continuing education opportunities, networking events, and professional growth. The purpose of this study is to evaluate strategies to improve member engagement and increase leadership applications within a healthcare professional association, particularly a hand therapy association.

METHODS

The study design is a quality improvement study. Participants in this study include paid (professional), student, and free (stay connected) members within the Capital Hand Therapy Association who reside in Washington D.C., Northern VA, and Maryland. A needs assessment approach was utilized to gain feedback from the board and collect data through surveys sent to members. Based on needs assessment results from members, interventions to improve member retention and engagement included increased member-exclusive events, highlighting continuing education and networking opportunities, leadership interest surveys and outreach, targeted social media content, and targeted outreach to academic programs and clinics. Data analysis was performed by descriptive statistics on survey responses, social media metrics, and weekly tracking of membership sign-ups.

RESULTS

Results demonstrated an increase in professional and student member sign-ups, increased social media engagement, recruitment of four new board members, and increased event attendance. Member surveys found members value continuing education opportunities, networking, and surgeon and therapist discussions the most. The increase of paid and student members can be seen in Figure 1, representing a total of 42 professional members and 23 student members from Jan 4th, 2026, to Mar 15, 2026. There is an increase of 15 professional members in March 2026 compared to March 2025. Social media data demonstrated increased engagement and views for general content, membership/board spotlights, and educational content (Figure 2). Differences were also observed based on post type. Regular static posts generated the highest visibility, while interactive story polls yielded the highest engagement (Figure 3). A total of 20 participants completed the Membership Interests survey via REDCap. Of respondents, 43.8% of members responded being "Very Satisfied," and 56.3% responded being "Satisfied" with the value of being a CHTA member. The most frequently reported barriers to event attendance included time conflicts (85%) and the location of in-person events (55%). Additional barriers included the cost of membership and lack of relevant topics. Members identified the type of events they found most valuable as part of CHTA membership. The four most highly valued events were continuing education opportunities (85%), surgeon discussions (70%), therapist discussions (70%), and networking/social events (55%). Regarding leadership development, a total of 10 participants responded, and four new board members were recruited through the Leadership Interest survey via REDCap. 10% responded they are "Very Interested" and 10% responded they are "Interested" in becoming more involved in CHTA leadership. The majority responded "Neutral" (50%) and "Not Very Interested" (20%). The largest motivation to become involved in leadership included networking (100%), followed by professional growth (57.1%), contributing to the profession (57.1%), and resume/CV enhancement (28.6%). Factors that would make members feel more comfortable taking a leadership role included a flexible time commitment (85.7%), clear role expectations and descriptions (71.4%), ability to have a co-chair or partner (71.4%), mentorship from a current or past leader (28.6%), and training/orientation (28.6%).

CONCLUSION

These findings suggest that member-exclusive events, targeted outreach, and highlighting benefits are beneficial in member retention and engagement for a local hand therapy organization. Obtaining new leadership is challenging and hand therapists must be intrinsically motivated and be given a flexible time commitment to take on leadership positions. For hand therapy practitioners, increased engagement in professional associations may expand access to continuing education opportunities, networking, improve professional growth, and encourage the use of evidence-based strategies in practice.

Uploaded File(s)

Upload Tables & Images

Figure 1- CHTA signups

Figure 1

Professional Members and Student Members Sign-Ups

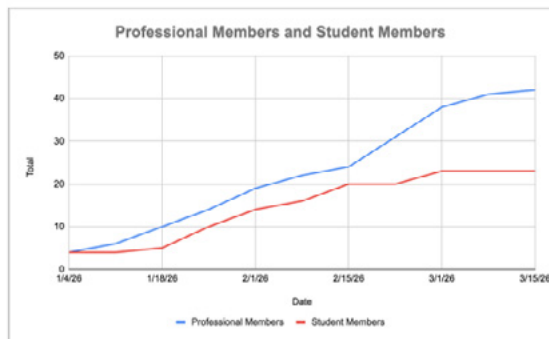


Figure 2 and Figure 3-Average Engagement and Views for Instagram Post Categories and Type of Instagram Post

Figure 2

Average Engagement and Views for Instagram Post Categories

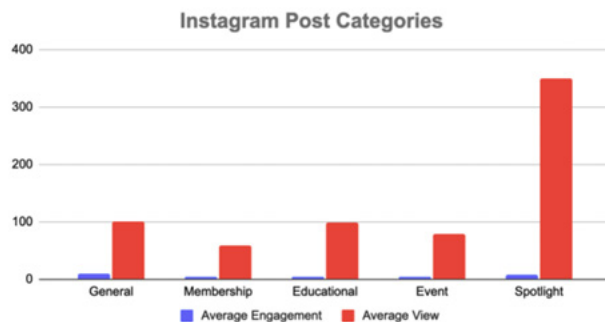
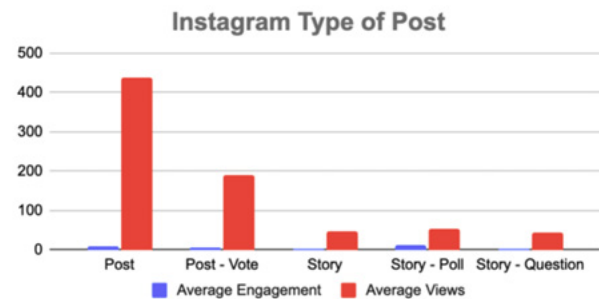


Figure 3

Average Engagement and Views for Type of Instagram Post



Submission ID#2419609

AI-BASED DYNAMIC HAND TRACKING USING AUGMENTED REALITY AND MEDIAPIPE FOR ASSESSMENT OF HAND RANGE OF MOTION: A VALIDATION STUDY

Author(s) Gayathri Boopathy, University of Massachusetts Lowell; Emi Aoki, University of Massachusetts Lowell; Flore Norceide, University of Massachusetts Lowell; Kyle Callahan, University of Massachusetts Lowell; Ravi Venkata, University of Massachusetts Lowell; Charles Thompson, University of Massachusetts Lowell; Erika Lewis, University of Massachusetts Lowell; Kavitha Chandra, University of Massachusetts Lowell

PURPOSE

Accurate assessment of hand range of motion (ROM) is essential in hand therapy for evaluating impairment, guiding rehabilitation, and monitoring recovery after injury or surgery. Traditional manual goniometer is the clinical standard for joint angle measurement; however, it provides only static snapshots of motion and does not capture continuous movement or functional hand performance. Recent advances in artificial intelligence (AI), computer vision, and augmented reality (AR) enable markerless hand tracking that can estimate joint motion in real time. These technologies have the potential to improve functional assessment and support remote rehabilitation workflows. The purpose of this study was to develop and validate AR-based and MediaPipe (MP)-based dynamic hand tracking systems by comparing their joint angle measurements with standard goniometer across clinically relevant hand gestures. We hypothesized that both systems would demonstrate strong agreement with manual measurements while providing additional functional motion insights.

METHODS

Three hand assessment approaches were evaluated: (1) Manual goniometer (clinical reference standard), (2) Developed MP-based dynamic hand tracking system, and (3) Developed AR-based dynamic hand tracking system. Hand gestures analyzed includes: full fist, hook fist, open hand (full extension), and thumb opposition (Kapandji task). A three-phase experimental design was implemented: Phase 1 – Reliability Study (Uninjured Hands): Initial reliability of manual goniometer measurements was established among clinicians using repeated measurements on three uninjured participants (age: 20--25-years) to ensure consistency of the clinical reference standard. Phase 2 – Uninjured Hand Assessment: Extended evaluation was performed on uninjured participants (age: 40--69-years) across all three systems (AR, MP, and goniometer) using all predefined hand gestures. Phase 3 – Injured Hand Assessment: Clinical validation was performed on participants with hand impairments (age: 50--79-years) across all three systems (AR, MP, and goniometer) using the same set of hand gestures. Fourteen participants were recruited in total (three for the clinical reliability study, six uninjured, and five injured). Standard goniometer measurements were performed by trained clinicians following clinical protocols. The developed MP system used a standard RGB camera to detect 21 anatomical hand landmarks and compute joint angles in real time. The developed AR system independently tracked 26 three-dimensional hand landmarks using spatial tracking sensors. Both systems generated continuous joint position and joint angle trajectories with timestamps based on geometric relationships between hand bone-joint landmarks. A calibration phase was included to personalize gesture-recognition thresholds according to each participant's available ROM, enabling adaptive and subject-specific motion analysis. Agreement between AR / MP systems and manual goniometer was evaluated using intraclass correlation coefficients (ICC) with 95% confidence intervals.

RESULTS

Both AR- and MP-based systems demonstrated strong agreement with manual goniometer across all conditions. The highest agreement was observed in uninjured participants using the AR system (ICC = 0.977), while the lowest was observed in injured participants using MP (ICC = 0.875), indicating good reliability even under impaired movement conditions. Both systems additionally provided continuous motion trajectories, real-time joint angle estimation, and functional gesture classification. Automated thumb opposition scoring demonstrated reliable agreement with clinician assessment and enabled dynamic evaluation of Kapandji performance.

CONCLUSION

Developed AR- and MP-based hand tracking systems demonstrated high reliability and strong agreement with manual goniometer across both injured and uninjured populations. AR tracking achieved the highest overall agreement, while MP provided consistent performance with flexible camera-based implementation. Beyond static measurement agreement, both systems enabled continuous dynamic motion tracking, automated gesture recognition, and functional hand assessment including thumb opposition scoring.

These findings support the use of AI-enabled markerless hand tracking as a complementary clinical tool for hand therapy assessment, rehabilitation monitoring, and telehealth applications. This approach may enhance objective evaluation of hand function while improving accessibility and continuity of care. Clinical Relevance – Markerless AR and AI-based hand tracking systems can provide clinicians with objective, real-time ROM and functional movement data, supporting improved decision-making in hand rehabilitation and remote patient monitoring.

Uploaded File(s)

Upload Tables & Images

Overall ICC agreement between manual goniometer and developed AR / MP systems across assessed hand gestures, namely full fist, hook fist, and open hand.

Comparison	ICC
Goniometer vs AR	0.955
Goniometer vs MP	0.907
Uninjured AR	0.977
Uninjured MP	0.933
Injured AR	0.913
Injured MP	0.875

Comparison of hand assessment methods including manual goniometer (A), AR-based 3D hand tracking (B, C), MP-based tracking (D–F), and automated functional gesture evaluation including thumb opposition (Kapandji) scoring.

(26) **Submission ID#2419656**

REHABILITATION OF ELBOW FRACTURES AND/OR DISLOCATIONS: AN UPDATE ON THE CURRENT PRACTICE PATTERNS OF TREATING CLINICIANS

Author(s) Sarah Doerrer, George Washington University; Laurie Rogers, George Washington University; Katriona Buhler, George Washington University; Stephanie Barbone, George Washington University; Julie Brody, Center for Advanced Orthopedics; Jill Yanick, Shenandoah University

PURPOSE

Elbow fractures and dislocations, though relatively uncommon, can result in long-term pain, stiffness, and disability, with hand therapists playing a key role in rehabilitation. New developments in assessment and intervention have been described in the literature since the previous published 2012 survey describing therapist practice patterns related to elbow rehabilitation. The purpose of this exploratory survey study was to investigate the current practice patterns of hand therapists in rehabilitating elbow fractures and/or dislocations.

METHODS

This was a online survey research study. A 51-item survey was developed by six certified hand therapists. Questions were based on the following domains: Percentage of elbow fx/dis on caseload, frequency and duration of visits, factors considered for discharge, problem areas assessed and standardized measures used at evaluation, intervention strategies used and time frames when implemented, factors associated with custom orthoses use and preferred custom orthoses. Survey was approved through the ASHT research division prior to distribution. Recruitment occurred through ASHT email distribution and was emailed to 2,432 members. This anonymous, IRB-approved survey was administered via REDCap from April to June 2025. Descriptive statistics and chi-square analyses were performed using REDCap, Excel, and SPSS, with significance set at $p < .05$.

RESULTS

135 hand therapists completed the survey. Demographics can be found in Table 1. Across all experience levels, the most frequent sources of evidence used when treating elbow fx/dis were hand therapy protocols, webinars and physician provided protocols. Use of evidence by years of experience is represented in Table 2. $\leq 25\%$ of hand therapist caseload was comprised of elbow fractures/dislocations. Most hand therapists reported therapy is typically initiated within two weeks and delivered twice weekly for a total of 16–20 visits. Nearly all respondents assessed active range of motion (AROM), edema, and activity of daily living status and administered the QuickDASH. Intervention strategies changed over 12 weeks of rehabilitation. At 0-3 weeks, interventions focused on early immobilization and education (Figure 1). At the middle phase of rehabilitation (weeks 3-8) shifted towards restoring joint and soft tissue mobility, therapeutic exercise, neuromuscular re-education (NMR), and mobilizing orthoses (Figure 2). In the final phase of rehabilitation (weeks 8- 12) interventions emphasized mobility, strengthening and NMR (Figure 3). Orthosis utilization was primarily driven by ROM limitations, with serial static orthoses most common. Experience level influenced visit volume ($X^2 [8, N = 135] = 69.5, = P < .001$), reliance on physician preference for orthoses ($X^2 [2, N = 135] = 11.0, = P = .004$), and discharge factors ($X^2 [2, N = 135] = 7.3, = P = .025$).

CONCLUSION

While traditional biomechanical approaches remain foundational, contemporary practice increasingly integrates biopsychosocial principles and advanced orthosis strategies, reflecting evolving clinical reasoning and knowledge translation across experience levels. This study gives clinicians information on what assessments and interventions are most used by hand therapists and may guide clinical practice for more novice practitioners.

Uploaded File(s)

Upload Tables & Images

Table 1- Demographics, Table 2- Sources of Evidence by Years of Experience.

Table 1

Demographics of survey respondents

	Responses	Frequency (%)
Profession	Occupational Therapist	129 (96)
	Physical Therapist	5 (3.7)
Do you practice in the USA?	Yes	134 (100)
Are you a certified hand therapist?	Yes	122 (90.4)
	No	13 (9.6)
Practice Setting	Hospital Based Outpatient	49 (36.3)
	Therapist Owned Outpatient	20 (14.8)
	Physician Owned Outpatient	39 (29.8)
	Corporate Owned	25 (18.5)
	Other	2 (1.5)
Years of Practice	Less than 5	15 (11.2)
	5-10	23 (17.2)
	10-15	11 (8.2)
	15+	85 (63.2)

Figure 1, 2, and 3. Intervention Use

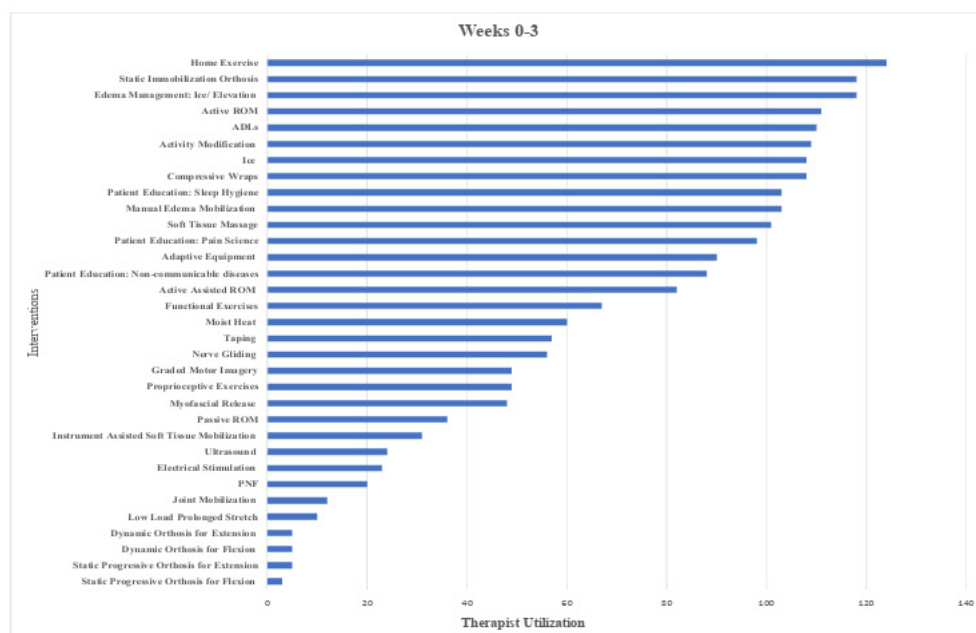


Fig. 1. Number of respondents utilizing various treatment interventions during the first 3 weeks of treatment. HEP = home exercise program; AROM = active range of motion; ADLs = activities of daily living; AAROM = active assisted range of motion; PROM = passive range of motion; IASTM= instrument assisted range of motion; PNF = proprioceptive neuromuscular facilitation

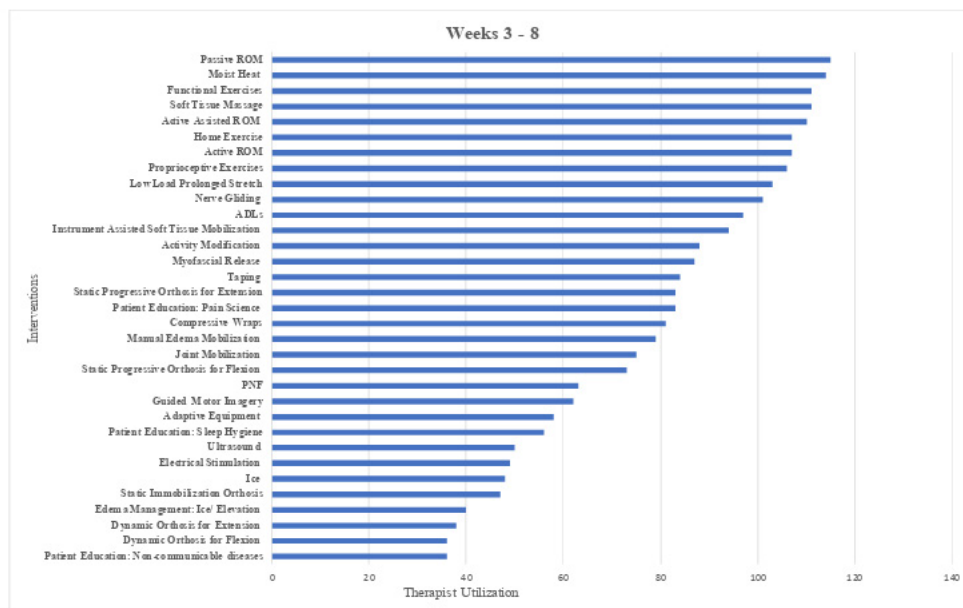


Fig. 2. Number of respondents utilizing various treatment interventions during weeks 3 - 8 of treatment. HEP = home exercise program; AROM = active range of motion; ADLs = activities of daily living; AAROM = active assisted range of motion; PROM = passive range of motion; IASTM= instrument assisted range of motion; PNF = proprioceptive neuromuscular facilitation.

ABSTRACTS

(abstracts are listed in numeric order by control ID number)

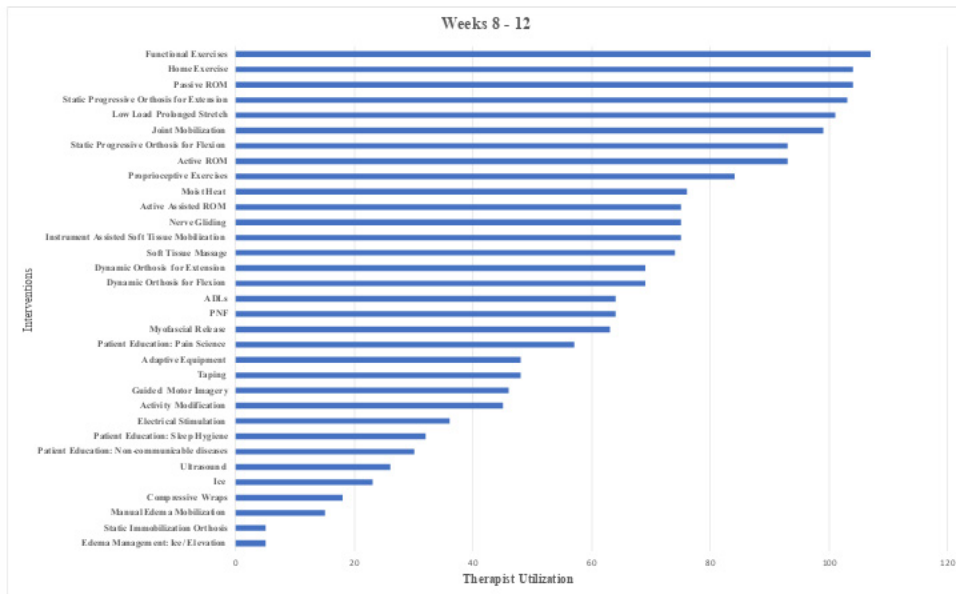


Fig. 3. Number of respondents utilizing various treatment interventions during weeks 8 - 12 of treatment. HEP = home exercise program; AROM = active range of motion; ADLs = activities of daily living; AAROM = active assisted range of motion; PROM = passive range of motion; IASTM = instrument assisted range of motion; PNF = proprioceptive neuromuscular facilitation.

Submission ID#2420059

THE ACCEPTABILITY OF A PATIENT REPORTED OUTCOME MEASURE FOR CHILDREN WITH UPPER LIMB IMPAIRMENT AMONG PATIENT AND CLINICIAN USERS

Author(s) Jenny Dorich, Division of Occupational Therapy and Physical Therapy and Division of Pediatric Orthopaedic Surgery, Cincinnati Children's Hospital and Medical Center; Emily S. Ho, Toronto SickKids; Katilynn Jackson, Cincinnati Children's Hospital; Roger Cornwall, Division of Pediatric Orthopaedic Surgery, Cincinnati Children's Hospital and Medical Center and University of Cincinnati

PURPOSE

Upper limb impairment (ULI) is characterized by limitations in the functional capacity of using one or both arms as a result of a congenital or acquired conditions. Currently, knowledge of the impacts of ULI on health-related quality of life (HRQoL) in children is limited. While patient reported outcome measures (PROMs) are useful tools in measuring HRQoL, a PROM designed to measure the outcomes priorities of children with ULI is lacking. Therefore, we cannot determine the full impact of ULI on children's global health and cannot identify modifiable determinants HRQoL for pediatric onset conditions to optimize long term treatment outcomes. We have identified the outcomes priorities of children with ULI and applied these to develop a draft PROM for children with ULI: the Upper Extremity Life Impact Measure – Youth (UE LIM-Y). This draft measure was refined through a rigorous cognitive interviewing process with representatives of the target patient population. In the current study we aim to determine the UE LIM-Y's acceptability among children with ULI and among hand specialist clinicians to inform measure refinements and complete the measure's content validation.

METHODS

This mixed methods study included two iterative rounds of data collection, analysis, and measure refinement, each involving 10 children with ULI and 10 hand specialist clinicians, were completed. Participants were recruited among children 8 – 20 years old receiving care for ULI at a pediatric medical center and clinician members of the Pediatric Hand Study Group. For patient participants, diagnostic information was retrieved from the electronic medical record. All other data were collected through a REDCap survey and a 1:1 semi-structured interview conducted immediately following survey completion. The survey included: (1) screening and demographic questions, (2) the UE LIM-Y questions with the option to "accept", "accept with revisions", or "reject" each question and provide comments, (3) a 14-question Acceptability Survey completing a 14-question acceptability survey based on Rowe Oxman methodology. During the interview, participants were asked to describe their impressions of the relevance and usefulness of the UE LIM-Y and their recommendations for revisions.

RESULTS

A diverse sample of patients and clinicians participated in both data collection rounds (Figure 1). In round 1, the Acceptability Survey score met the threshold for acceptability for both groups (Table 1). The CVR met the threshold for acceptability for 30/31 questions among patients and 2/31 questions for clinicians (Table 2). Open-ended responses and interview data informed refinement of all 31 questions. In round 2, the Acceptability Survey score met acceptability thresholds for both groups. The CVR met threshold for acceptability for 30/31 and 14/31 questions for patients and clinicians, respectively. Upon reviewing open-end responses and interview data, the researchers reached consensus that all data supported the UE LIM-Y meeting the acceptability standards of the measure's theoretical construct.

CONCLUSION

The current study illustrates a patient-oriented method to rigorously develop PROMs that are acceptable for both clinical and research applications among patient and clinician stakeholders. Following item refinement informed by round 1 data, the UE LIM-Y demonstrates acceptability among patient and clinician representative users, completing the UE – LIM-Y's content validation. The UE-LIMY is now ready for psychometric testing to establish the measure for clinical and research applications.

Uploaded File(s)

Upload Tables & Images

Table 1 Acceptability Measures

	Data Collection Round 1	Data Collection Round 2
Patient Data		
Acceptability Survey Score (mean, range)	6.5 (6 – 7)	6.1 (4.5 – 6.9)
UE LIM-Y Questions CVR	30/31 CVR $\geq$ 0.8	30/31 CVR $\geq$ 0.8
Clinician Data		
Acceptability Survey	6.0 (5 – 6.7)	6.3 (5.2 – 6.3)
UE LIM-Y Questions CVR	2/31 CVR $\geq$ 0.8	14/31 CVR $\geq$ 0.8
CVR = Content Validity Ratio		

Submission ID#2420350

THE EFFECT OF A BILATERAL TREATMENT INTERVENTION ON RETURN TO FUNCTION FOLLOWING DISTAL RADIUS FRACTURE: AN EXPLORATORY STUDY

Author(s) Moussia Krinsky, New York Hand Therapy

PURPOSE

This innovation project explores the impact of pain on recovery following a distal radius fracture, providing a head-to-head analysis of bilateral versus unilateral rehabilitation. While these fractures dominate the referrals for hand therapy, they often leave patients with unresolved pain and limited occupational performance. Traditional rehab focuses almost exclusively on the injured side. However, my research challenges this "single-limb" standard by investigating how bilateral activities can enhance neuromuscular recovery and functional integration. By bridging the gap between clinical evidence and occupation-centered intervention, this study advocates for a shift toward tailored strategies that optimize both healing and active participation in daily life.

METHODS

This study sample comprised of 20 patients aged 25 to 88 recovering from a distal radius fracture, conservatively and post surgically, attending New York Hand Therapy clinic for outpatient occupational therapy rehabilitation. There was no preference on hand dominance or gender. There was a rolling enrollment period from November 2025 to January 2026. Exclusion criteria included patients with a complex medical history, severe pre-existing limitations of the affected hand, cognitive impairments, bilateral fractures and those that were unable to communicate in either English or Spanish. Demographic information was extracted from the web-based patient portal WebPT. Participants were randomly assigned to treatment and control groups using appropriate computer software. All participants received 1-hour outpatient occupational therapy services once, twice or three times weekly. Frequency was determined by several variables, mostly severity of symptoms, insurance approval and ease of commute to the clinic. The control group engaged in the standard unilateral approach while the treatment group was provided with primarily bilateral activities. To ensure rigorous comparison, standard unilateral rehabilitation protocols were systematically adapted into bilateral variations, matching each therapeutic motion while reinforcing the mind-body connection.

RESULTS

A total of 20 participants completed the 12-week study with zero attrition. An ANCOVA model adjusting for baseline, age and gender revealed a statistically significant treatment effect for grasp with the intervention group achieving superior restoration of composite finger flexion (DPC; adjusted mean: .53 vs 1.47 cm; $p = .04$). While functional disability (DASH) and pain (VAS) scores demonstrated numerical improvements favoring the intervention group, the differences did not reach statistical significance ($p > .05$).

CONCLUSION

Pain is a phenomenon that affects and presents differently among this patient population; it is primary driver of perceived disability and early detection and management is vital. Acknowledging pain is critical to improving both the patient's subjective functional experience (DASH) and sensitivity measures (DPC). While high pain was strongly linked to dysfunction, it did not always translate to lower physical outcomes. The power paradox identified in this study suggests a weaker relationship between pain levels and raw grip strength compared to functional scores with several participants complaining of high pain ($>8/10$) but still maintaining relatively appropriate power grasp. The discrepancy in inhibition versus ability implies that while pain makes functional tasks difficult or unpleasant (high DASH scores), it does not necessarily prevent the exertion of physical force (grip) when needed. Though further exploration is needed in additional rehabilitation settings with a larger sample size, the statistically significant improvement in DPC ($p = .04$) and the numerical reduction in DASH scores provides preliminary evidence to embrace a more balanced hybrid model that combines essential elements of both the unilateral and bilateral treatment techniques to facilitate neurodynamic training with progressive sensory-motor integration, ultimately leading to more profound functional mastery and holistic recovery.

Uploaded File(s)

Upload Tables & Images

Table summaries

Table 1: Comparison of Rehabilitation Exercises: Control vs. Intervention

Targeted Motion	Unilateral (Control)	Bilateral (Intervention Group 1)			
Forearm Rotation	Single-hand wheel	Twisting a ball between both palms			
Wrist Flex/Ext	Rolling a ball on a table in arranged	Symmetrical use of the ExerTwist tool			
Finger Motion	Single-hand finger	Simultaneous tip-to-palm translation using			
Grip Strength	Unilateral putty manipulation	Simultaneous use of grip aids in both hands			
Weight Bearing	Single-limb loading	Symmetrical 5lb putty kneading with both hands			

Table 2: Baseline Demographic and Clinical Characteristics by Group

Characteristic	#	#	#	#UNKNOWN!
	#	#	#	
Age (Years)				
Mean	62.1	45.4	53.8	(21.4)
(SD)	(18.5)	(21.2)		
Range	41 – 85	25 – 78	25 – 88	
Gender, n (%)				
Male	5 (50%)	1 (10%)	6 (30%)	
Female	5 (50%)	9 (90%)	14 (70%)	
Involved Hand is Dominant				
Yes	6 (60%)	7 (70%)	13 (65%)	
No	4 (40%)	3 (30%)	7 (35%)	

Table 3: Clinical Outcomes Over Time (n=20)

Outcome Measure	Baseline (Evaluation)	6 Weeks	12 Weeks
DPC Score (cm)	3.35	1.35	1
Pain Level (0-10)	5.85	3.3	2
DASH Score (0-100)	65.35	43.9	34.15

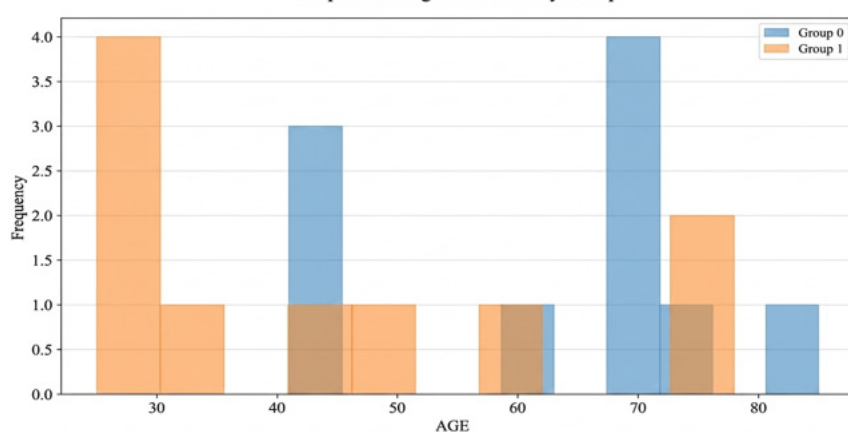
Table 4: Comparison of Final Adjusted Clinical Outcomes (12 Weeks)

Outcome	Adjusted Difference	95% Confidence Interval	p-value
DPC	0.94	[0.05, 1.83]	.041*
DASH	3.96	[-28.18, 20.25]	0.732
Pain	0.06	[-1.79, 1.67]	0.94
Grip	3.7	[-4.25, 11.65]	0.337

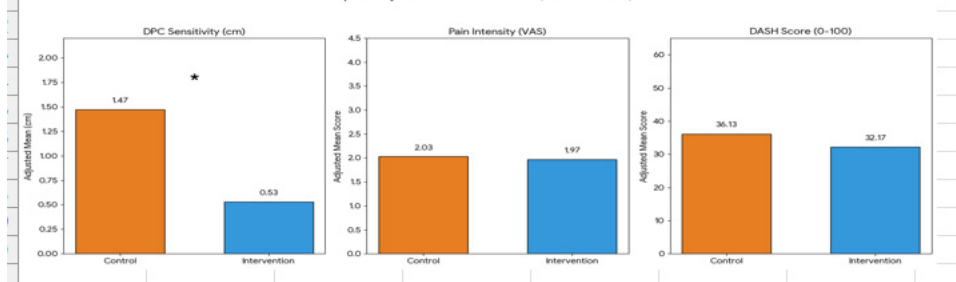
*Bold indicates statistical significance at $p < 0.05$. Note: For DPC, DASH, and Pain, positive differences indicate the intervention group achieved lower (improved) scores than the control group.

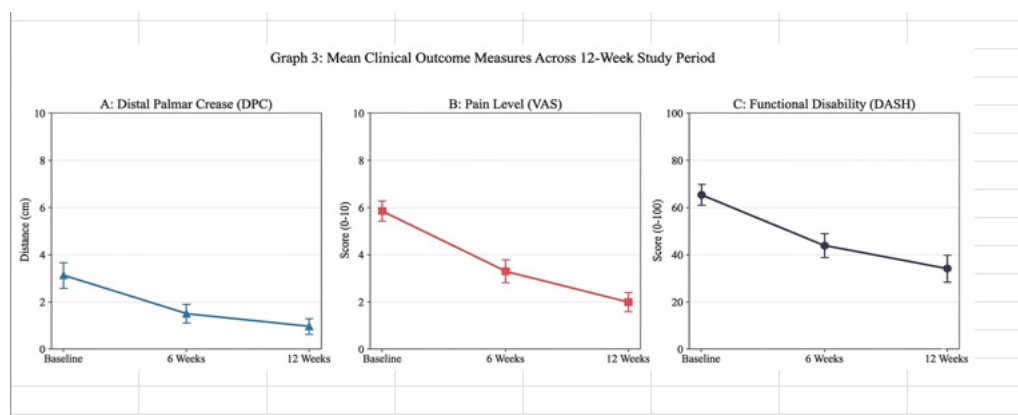
Figures of outcomes

Graph 1: Histogram of AGE by Group



Graph 2: Adjusted Clinical Outcomes (Isolated Scales)





Submission ID#2421787

BASELINE RESILIENCE AS A PREDICTOR OF PSYCHOSOCIAL DISTRESS POST-PHYSICAL TRAUMA

Author(s) Elizabeth Williams, Northern Illinois University, Loyola University Medical Center; Shondra Clay, Northern Illinois University; Nahal Salimi, Northern Illinois University; Bryan Dallas, Northern Illinois University

PURPOSE

The purpose of this study is to examine the relationship between individuals' self-reported resilience within one month of injury and their psychosocial well-being at a 3-month follow-up. This research suggests that initial psychosocial distress is common following injury and tends to decrease gradually over time. Using established patient-reported outcome measures for resilience (the Connor-Davidson Resilience Scale-10) and a physical trauma-specific psychosocial distress scale (the Psychosocial Screening Instrument for Physical Trauma), this study examines how individuals' self-rated resilience shortly after injury relates to their later self-reported psychosocial distress.

METHODS

Inclusion Criteria: All participants in this study were at least 18 years old. Proficiency in both verbal and written English was required. **Exclusion Criteria:** Individuals were excluded from the study who have intentional (i.e., self-inflicted or violent) injuries as this research is focused on individuals with unexpected, unintentional trauma. Participants with non-traumatic injuries (e.g., repetitive use) were also excluded. **Recruitment:** This study was a prospective observational cohort study design. After obtaining IRB approval, participants were recruited through the social media site LinkedIn and through connections with therapy clinics via a posted flyer. **Study Design:** Participants completed a survey containing a demographic questionnaire and the two validated questionnaires: The Connor-Davidson Resilience Scale - 10 (CD-RISC-10) and the Psychosocial Screening Instrument for Physical Trauma (PSIT). Repeat assessment occurred three months post initial intake of data. **Data Analysis:** Descriptive analyses were conducted for all resilience and psychosocial distress variables at baseline and followup. Summary statistics (mean, median, and standard deviation [SD]) were computed to evaluate distributional assumptions along with Shapiro-Wilk test for normality. Additional analyses included paired-sample t tests from initial to 3-month follow-up for all respective assessments. Bivariate associations between resilience and psychosocial distress were examined using Pearson correlation coefficient. Three simple linear models were conducted to evaluate crosssectional and prospective associations between resilience and psychosocial functioning within the three subscales.

RESULTS

Results revealed an increase in psychosocial distress diagnoses from baseline (39%) to three months post-injury (87%), with participants reporting barriers to accessing mental health care. Simple linear regression models demonstrated that higher resilience scores were predictors of less psychosocial distress, when assessed concurrently ($p < .05$ for initial CD-RISC as predictor for all initial PSIT subscales, $p < .05$ for follow-up CD-RISC as a predictor for all follow-up PSIT subscales). However, resilience measured at baseline did not significantly predict distress at three months. These findings suggest the CD-RISC-10 and PSIT are useful tools when used simultaneously to assess mental and emotional well-being post-trauma, however its long-term predictive value may be limited.

CONCLUSION

For the guiding research question: "Is there a relationship between individuals' baseline resilience immediately following physical trauma and their subsequent psychosocial distress?", baseline resilience did not have significant relationship with 3-month follow-up psychosocial distress and predictive models were insignificant. This finding corroborates the discrepancies in findings of the study discussed previously. Findings were consistent when CD-RISC-10 and PSIT were measured concurrently but this study is unable to suggest a baseline resilience score is predictive of 3-month psychosocial distress in accidental physical injury. Studies exploring this relationship in emotional trauma rather than physical trauma do find significant relationship in baseline resilience predicting 3-month psychosocial distress (Min et al., 2013; Pietrzak et al., 2010). Further robust research in accidental physical trauma is required to understand this relationship further. The high prevalence of psychosocial distress and the barriers to accessing mental health care observed in this study emphasize the importance of integrating resilience assessment and mental health support into early trauma care. Future research with larger, more diverse samples is needed to further elucidate the relationship between resilience and long-term psychosocial outcomes, and to identify effective strategies for supporting recovery in this vulnerable population.

Submission ID#2426265

EXPLORING PRACTICE PATTERNS IN THE MANAGEMENT OF TRIGGER FINGER: INSIGHTS FROM A STUDY GROUP MEETING

Author(s) Susanne Higgins, Midwestern University; Susan Charnley, Midwestern University

PURPOSE

Trigger finger is a common condition that can significantly impact hand function and occupational performance. This study aimed to explore practice patterns and bridge the gap between what is known from evidence and how clinicians practice every day.

METHODS

This mixed-methods study recruited participants from the membership of a hand therapy study group in the Midwest to explore their management of trigger finger. REDCap was used to administer a survey prior to the study group meeting to collect demographic information and explore participants' treatment choices and clinical rationale. Both open and closed-ended questions were used, and survey results were shared at the study group meeting. Results of a current literature review on trigger finger management were also discussed, and a case study was shared. Participants fabricated their preferred orthosis for the case scenario and then discussed their likely plan of care and rationale within a focus group using a semi-structured interview guide. Quantitative data from the survey was analyzed for descriptive statistics and comparison of means, and data from the focus group and open-ended survey questions were analyzed using qualitative methodology for thematic analysis. Twenty-five surveys were completed. All respondents were employed in outpatient clinics owned by hospital systems, physicians, or therapists. Most respondents (n=22, 88%) were occupational therapists, while 3 (12%) were Certified Occupational Therapy Assistants. Nineteen respondents (76%) reported having 10 or more years of experience in hand therapy. Five (20%) reported having 5-10 years of experience with one reporting having 0-3 years of experience.

RESULTS

Activities of Daily Living (ADLs), Instrumental ADLs, leisure activities, pain, range of motion, edema and a validated patient reported outcome measure, were included in at least 90% of clinician's typical evaluation processes. Only 11 respondents (46%) reported assessing the clinical grade or stage of trigger finger. Most respondents indicated that they use an orthosis (n = 21, 84%) to restrict motion at one joint, with 80% (n=20) indicating the MP joint to be the preferred joint. Elastic taping was reported to be used by 72% (n=18) of the participants. The wearing schedule for the orthosis varied with the most frequent report being "all the time (except for hygiene)" (n=11, 44%). Others indicated the wearing schedule was linked to patient's signs or symptoms. The most frequently reported exercises were pain-free short arc ROM (n=13, 54%), tendon gliding (n=10, 42%) and stretching (n=11, 46%). The most frequently reported activity modification was to avoid or limit forceful gripping (n=16, 64%). Participants also reported using manual therapy techniques (n=14, 56%), heat (n=11, 44%), along with thermal or pulsed ultrasound (n= 16, 64%). Participants reviewed the case scenario and fabricated their preferred custom orthoses. Designs varied with a preference for blocking motion at the MP joint. The primary recommended wearing schedule was 4-6 weeks. The most commonly recommended exercises were short arc range of motion and tendon glides. Participants prioritized patient education regarding activity modifications, such as avoiding activities with forceful gripping. One participant summarized a widely shared perspective: "Every trigger finger is so different! Orthoses will vary as well as taping for joint correction". Following the meeting, participants completed a 4-item program evaluation to rate clinical relevance and overall satisfaction. 100% of participants rated each item as 5/5, describing the meeting as "helpful, fun, and informative with good discussions."

CONCLUSION

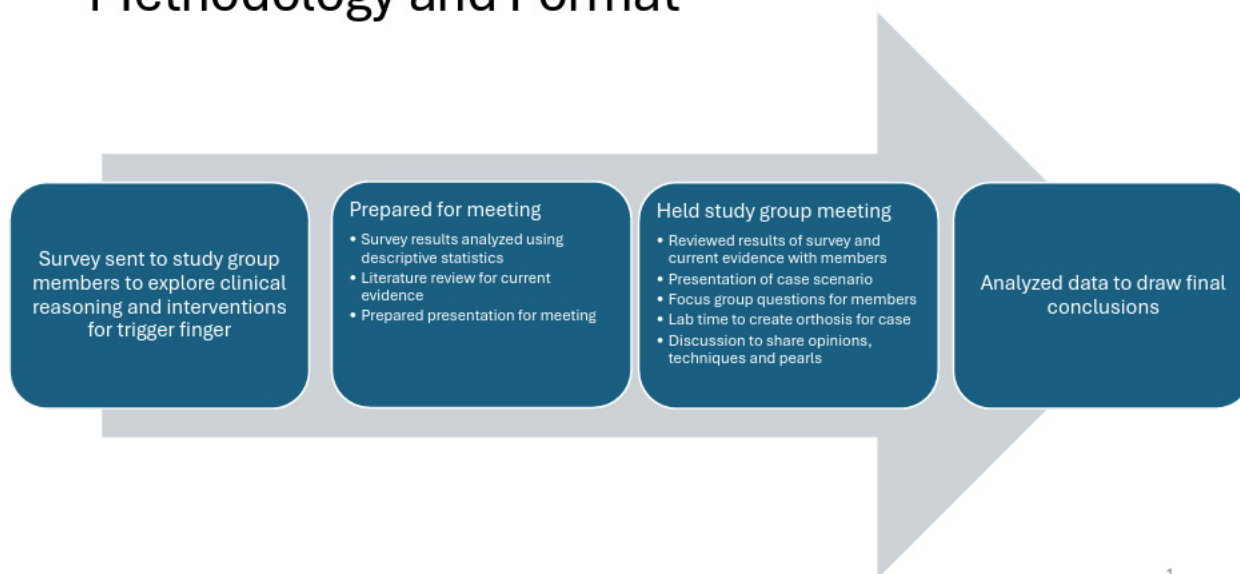
The clinical implication of this study is that shared dialogue and collective problem-solving can directly strengthen the quality of care for individuals with trigger finger by helping therapists refine their reasoning and align treatment choices with current evidence. In practice these plans would likely include: -Determining and documenting the clinical stage of TF using a validated scale such as those by Quinnell or Green can help guide interventions. -Use an orthosis and /or taping to restrict motion at one joint of the affected digit, most commonly the MP. The wearing schedule and duration is often determined by severity of catching and pain. -Interventions include exercises, activity modification, and other modalities. The collaborative environment of a regional study group can be a powerful source of shared clinical wisdom, giving hand therapists access to diverse perspectives on treatment approaches and the reasoning that guides them. It enhances individual practice and also supports the broader profession by sustaining high quality care and amplifying the collective voice of hand therapy.

Uploaded File(s)

Upload Tables & Images

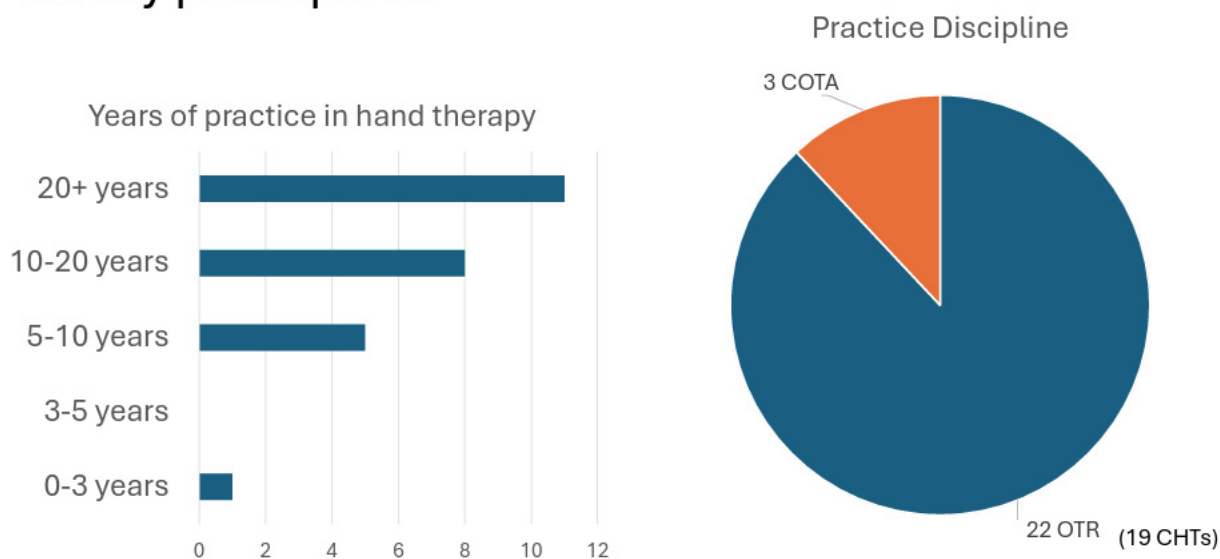
Exploring Practice Patterns in the Management of Trigger Finger: Insights from a Study Group Meeting

Methodology and Format



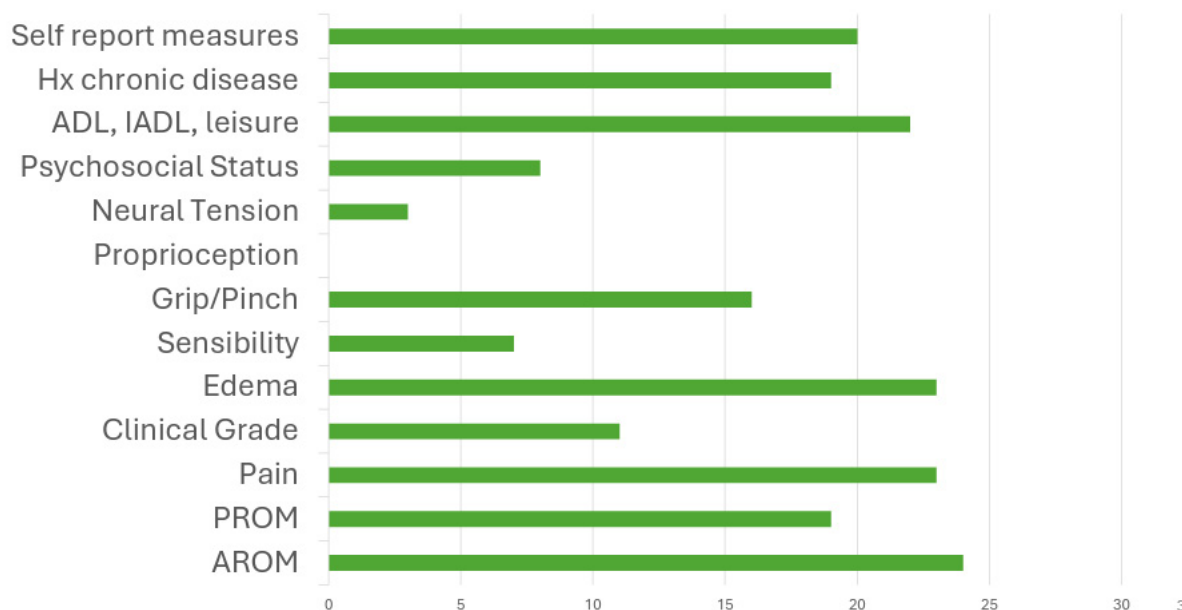
1

Survey participants

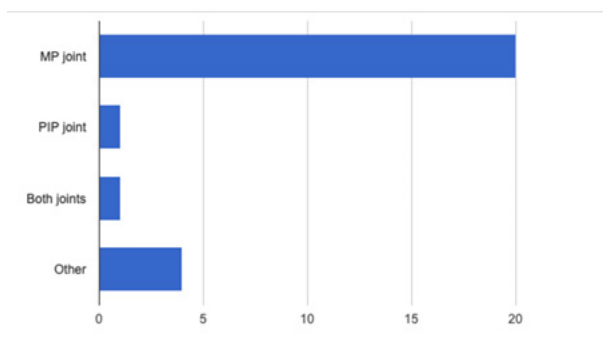


2

Evaluations used for patients with trigger finger

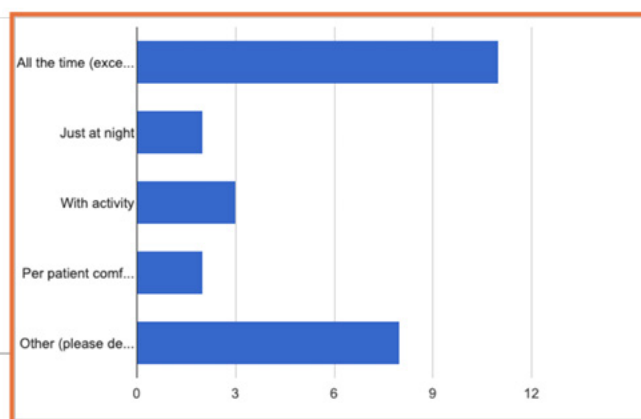


When fitting a patient with a TF orthosis, which joint do you typically block? (n=26)



Other: varies, often issue both MP and PIPJ blocks as 2 different splints– blocks IPJ for thumb

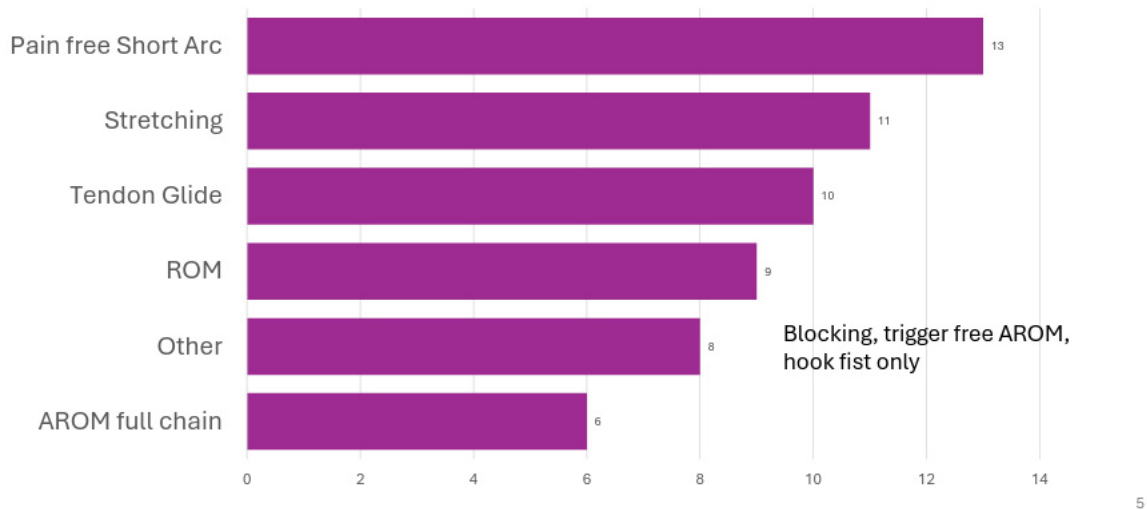
Which of the following best describes your recommendations for orthosis wearing schedule?



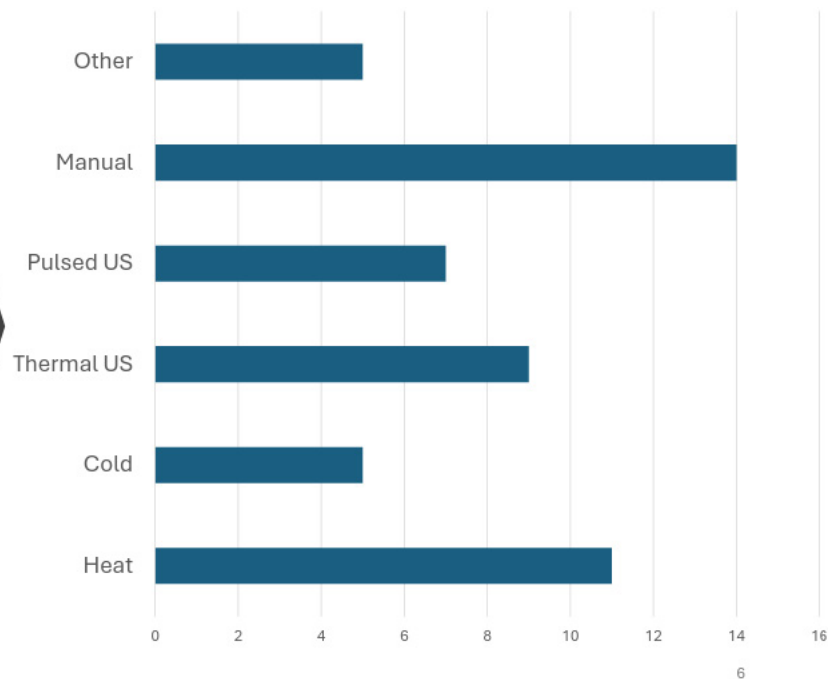
Other: Varies based on when they trigger and pain: If triggering at night, wear to bed, wear during provocative activities, wear more often due to pain
70% of respondents said 1-2 months of wear

4

Exercises recommended for TF



Modalities
used
for trigger
finger
treatment



Other: IASTM, Dry Needling, Hi-Volt Galvanic, Ionto, Skin Glides, Ice massage

Activity modification recommendations

Avoid
tight/repetitive grip:
n= 16

Use
built up/increased
handles: n=5

Avoid straight fist
with tendon glides:
n=1

Limit composite fist
n=3

Limit pinching n=1

Use spring
loaded scissors
n=1

7

Submission ID#2427137

EFFECT OF DIFFERENT THERAPY FREQUENCY LEVELS ON PATIENT OUTCOMES FOLLOWING DISTAL RADIUS FRACTURES: A SYSTEMATIC REVIEW AND META-ANALYSIS.

Author(s) Christos Karagiannopoulos, DeSales University, DPT Program, College of Health Professions; Saurabh P. Mehta, East Tennessee State University, College of Health Sciences

PURPOSE

Distal radius fracture (DRF) is the most common adult upper extremity fracture seen in emergency rooms. While most patients achieve satisfactory recovery, many experience various physical and functional impairments, requiring supervised therapy (SupT) or advice for an independent home exercise program (iHEP). Literature results are inconsistent on whether SupT may lead to better outcomes than iHEP alone, and which subgroups of patients would most benefit from one of these approaches. Reported SupT dosage levels have been very dichotomous, utilizing either typical frequencies (≥ 1 time/week) or very limited frequencies (≤ 1 time biweekly). This study aimed to determine whether SupT produces superior outcomes compared to iHEP and whether typical SupT dosage levels induce superior outcomes compared to limited SupT. Comparisons encompassed short-term (3-7 weeks), mid-term (8-12 weeks), and long-term (6-12 months) outcomes of wrist function, pain, AROM of flexion and extension, and grip strength following DRF operative or non-operative treatments.

METHODS

Multiple databases (PubMed, CINAHL, PEDro, Cochrane) were searched (between 2000 - 2024). Citations were imported into Covidence for systematic screening with specific criteria. Two reviewers independently screened all studies for eligibility and data extraction. The PEDro scale was used to assess risk of bias (RoB). The Comprehensive Meta-Analysis software (V4) was used for the meta-analysis, using the random-effects model and estimating pooled mean effect sizes (ES) for all comparisons (95% CI, $p < 0.05$). The Q-test determined significance ($p < 0.100$) for study heterogeneity. PROSPERO registered and approved this study.

RESULTS

Of the initial 2,312 eligible studies, 17 randomized controlled trials (fair-to-good RoB levels) met inclusion criteria (compared SupT to iHEP). Ten studies used typical SupT while seven studies used limited SupT. At 3-7 weeks, the pooled ES favored SupT on wrist AROM (ES = .383, $p=.045$), and grip strength (ES = .535, $p=.013$) as compared to iHEP. The typical SupT subgroup was found to have significantly better outcomes on pain (ES=.841, $p=.012$), AROM (ES=.921, $p=.000$), and grip strength (ES=.811, $p=.023$) than the limited SupT. At 8-12 weeks, the pooled ES were comparable for both SupT and iHEP groups in all outcomes. The typical SupT was significantly better only on grip strength (ES=.422, $p=.026$) than limited SupT. At 6-12 months, the pooled ES favored SupT only on AROM (ES = .882, $p=.007$). The typical SupT was significantly better only on AROM (ES=.954, $p=.016$). Significant pooled ES were mostly at medium (>0.50) or large (>0.80) levels. Results were limited to a narrow pool of available studies, significant study heterogeneity, and long prediction intervals in most outcomes.

CONCLUSION

SupT may lead to superior short- and long-term outcomes in wrist AROM and short-term grip strength gains compared to iHEP, but the SupT dosage is critical. Typical SupT produces superior short-term benefits on pain, AROM, and strength; mid-term benefits on strength; and long-term benefits in AROM than limited SupT. While limited SupT and iHEP may offer comparable benefits and have a role in managing less complicated DRF patients, typical SupT may be optimal for patients with greater or prolonged post-fracture complications.

Submission ID#2427480

GRADED MOTOR IMAGERY FOLLOWING NON-OPERATIVE DISTAL RADIUS FRACTURES: A PILOT COMPARATIVE EFFECTIVENESS TRIAL

Author(s) Corey McGee, University of Minnesota, Department of Occupational Therapy; Karin Burbach, University of Minnesota, Rehabilitation Science Graduate Program; Jenny Johnson, Fairview Health Services; Ashley Enke, Creighton University, Program of Occupational Therapy; Virginia O'Brien, University of Wisconsin - Madison Health

PURPOSE

Distal radius fractures (DRF) account for ~20% of fractures in older adults and are often treated with closed manual reduction (CRM). Aftereffects include pain, disability and pain syndromes (e.g., CRPS); with women being more at risk for developing pain syndromes. While Graded Motor Imagery (GMI) reduces CRPS symptoms after onset, evidence on early use in DRF is limited. Our aims were to 1) test the feasibility of GMI and a randomized controlled trial (RCT) to test its effect and 2) establish preliminary efficacy of GMI on pain, disability, and CRPS diagnosis relative to standard care (SC) in women who've sustained DRF that were treated by CRM.

METHODS

Design: Pilot Randomized Clinical Trial Participant recruitment and selection: Female participants with DRF treated with CRM were recruited through purposive sampling and were block-randomized to SC or GMI+SC according to initial pain scores. Participants in each group completed four clinic visits plus a daily home program until cast removal (~6 weeks). Data collection and analysis: GMI feasibility was assessed at cast removal; trial feasibility at 18 weeks. Preliminary efficacy was established through assessment of primary outcomes, disability as per the Patient Reported Hand and Wrist Evaluation and pain intensity as per the McGill Pain Scale Short Form 2, at cast removal, and 10 and 18 weeks. Group differences were analyzed using multiple linear regression to adjust for baseline differences and time effects.

RESULTS

Aim 1: Sixteen participants were enrolled (9 GMI, 6 SC); one withdrew in week 1 due to an undiagnosed tendon rupture. Mode score for home program adherence (5-point Likert scale: "not at all" to "as advised") for both groups was "as advised." All participants attended all scheduled therapy visits; one SC participant was lost to follow-up at 10 weeks. Blinding was retained at 18 weeks (40% correct identification), treatment fidelity was 100%, and mode score for interventionist feasibility ratings (5-point Likert scale: "completely disagree" to "completely agree") was "completely agreed." Aim 2: The GMI group demonstrated significantly lower continuous pain at cast removal ($B = -2.32$, $p = .04$) and 18 weeks ($B = -0.48$, $p = .04$) on the McGill-SF2 (Figure 1). Disability (via PRWHE) scores favored GMI but were nonsignificant; however, changes exceeded MCID at cast removal ($B = -15.22$, $p = .12$) and 18 weeks ($B = -11.47$, $p = .18$) (Figure 2). No cases of CRPS occurred.

CONCLUSION

GMI and RCT trial design were feasible for this population. Compared with SC, GMI produced statistically significant immediate and sustained reductions in pain and clinically meaningful immediate and sustained reductions in disability. Early use of GMI following CRM for DRF may improve pain and disability outcomes in women. Larger trials are warranted.

Uploaded File(s)

Upload Tables & Images

Figure 2: PRWHE Total Score

Figure 1: McGill Continuous Pain Score

Submission ID#2427834

ASSESSING CHANGE IN PATIENT OUTCOMES BETWEEN PRE- AND POST-OPERATIVE THUMB CARPOMETACARPAL ARTHROPLASTY: A RETROSPECTIVE STUDY

Author(s) Brooke Bossert, University of Wisconsin Health Hand and Upper Extremity Rehabilitation

PURPOSE

The purpose of this retrospective occupational therapy (OT) study is to compare outcomes between patients who received a structured pre-operative (pre-op) OT education session prior to carpometacarpal (CMC) arthroplasty with those who did not receive pre-op education but completed standard post-operative (post-op) rehabilitation. The study evaluates whether pre-op education influences post-op pain, functional outcomes, and total number of therapy visits. Thumb CMC osteoarthritis (OA) is a prevalent condition—affecting approximately 7% of women and 2% of men over age 50—and is associated with pain, deformity, and functional decline (Haugen et al. 2011, O'Brien et al. 2022, Johnson et al. 2022). CMC arthroplasty is a common surgical intervention for individuals who have not responded to conservative care (Wouters et al. 2018). Although OT plays a central role in post-op rehabilitation, pre-op education is not currently part of our standard care. Pre-op education may improve patient understanding of healing timelines, movement precautions, edema management, and expected functional progression, potentially reducing pain, improving function, and decreasing the number of therapy visits. No prior studies have compared outcomes between patients receiving pre-op OT education and those receiving only post-op care for this surgery, highlighting the need for this investigation.

METHODS

This is a retrospective study of patients who underwent thumb CMC arthroplasty performed by a single surgeon at UW Health Orthopedics. Two groups will be compared: (1) patients who completed both pre-op and post-op OT care, and (2) patients who completed only post-op OT care. Participants in the pre-op group were identified sequentially from medical records between 11/02/2023 and 10/30/2025 and completed pre-op OT education and their full post-op rehabilitation. A matched sample of up to 16 patients who received only post-op OT care is currently being identified (5 records are currently isolated). Inclusion criteria for both groups include a diagnosis of thumb CMC OA and CMC arthroplasty performed by the same surgeon and completion of post-op OT rehabilitation. There are no exclusion criteria. Data were extracted from electronic medical records. Outcomes include functional status, pain levels, and total number of therapy visits. Function is measured using either the QuickDASH or the Patient Specific Functional Scale (PSFS), both validated for this population (Franchignoni et al. 2014, Wright et al. 2017).

RESULTS

Analysis is ongoing. Preliminary comparison of N=16 in the pre-op group to N=5 in the post-op group shows improvement in QuickDASH scores from initial assessment to discharge in both groups, with the pre-op group improving from an average score of 49.2 to 20.9 (p-value 0.001), and the post-op group improving from 50.0 to 22.7 (p-value= 0.033); however no significant difference was seen between groups. Pain scores in the pre-op group improved (p-value=0.004), while the post-op group did not show significant change (p-value=0.423). Individuals in the pre-op group completed an average of 6.3 post surgery OT visits compared to 8.4 in the post-op group. While non-significant (p-value=0.163) this indicates a trend towards 2.1 fewer visits in the pre-op group.

CONCLUSION

The emerging data supports incorporating a structured pre op OT education session into standard care for individuals undergoing CMC arthroplasty. Based on these findings, clinicians should consider implementing pre-op instruction focused on healing timelines, movement precautions, edema management, and expected functional progression. Providing this information prior to surgery may reduce patient anxiety, early pain experiences and improve understanding of the healing process to streamline their post-op rehabilitation process. For hand therapists, these findings highlight the value of early engagement with patients to establish realistic expectations and reinforce self-management strategies. Integrating pre-op education into routine practice may enhance patient confidence, promote adherence to post-op exercise guidelines, and potentially reduce the overall number of therapy visits required. As healthcare systems increasingly emphasize efficiency and patient centered care, pre-op OT education represents a feasible, low cost intervention with the potential to improve both patient and clinical outcomes and resource utilization.

Submission ID#2418621

CRITICALLY APPRAISED PAPER ÖZDEMİR EC, ELHAN AH, KÜÇÜKDEVECİ AA. EFFECTS OF MIRROR THERAPY IN POST-TRAUMATIC COMPLEX REGIONAL PAIN SYNDROME TYPE-1: A RANDOMIZED CONTROLLED STUDY. JOURNAL OF REHABILITATION MEDICINE. 2024;56. DOI:10.2340/JRM.V56.40417

Author(s) Brooklyn R. French, Northern Arizona University; Alexis Granum, Northern Arizona University; Nataly P. Neira, Northern Arizona University; Cynthia Ivy, Northern Arizona University

PURPOSE

CLINICAL BOTTOM LINE Both groups showed meaningful improvement in pain, strength, dexterity, edema, and hand function, confirming that structured outpatient rehabilitation is effective for acute post traumatic CRPS 1. However, improvement patterns were nearly identical, and no between group differences emerged, indicating mirror therapy did not add benefit beyond standard care. Mirror therapy may still be clinically useful for select individuals, but conclusions should be cautious due to the modest sample, single blind design, limited psychometric reporting, and focus on acute trauma related CRPS 1. More research is needed on chronic CRPS, different etiologies, and varied dosing approaches. **RESEARCH OBJECTIVE, DESIGN, & LEVEL OF EVIDENCE** The study examined whether adding mirror therapy to routine PT/OT improves pain, strength, dexterity, edema, hand function, and quality of life in adults with post traumatic CRPS 1. It used a prospective, single blinded randomized controlled trial with block randomization and blinded assessment, meeting Level 1B evidence criteria.

METHODS

PARTICIPANT SELECTION Forty adults (≥ 18) with CRPS 1 diagnosed using the Budapest criteria after trauma (fracture, surgery, or similar events) were recruited from a university hospital hand rehabilitation clinic between 2017 and 2019. Individuals with conditions that could affect hand function or health related quality of life were excluded. **INTERVENTION & CONTROL** The intervention group received routine CRPS rehabilitation plus 30 minutes of mirror therapy per session. Mirror therapy used a vertical mirror with the affected hand hidden and the unaffected hand performing wrist/finger movements, grasping, and bilateral tasks. Sessions occurred five days per week for four weeks, lasting 75–90 minutes. The control group received the same routine rehabilitation- desensitization, ROM, strengthening, stress loading, coordination, dexterity, grasping, and ADL training without mirror therapy, for 45–60 minutes per session. All participants received acetaminophen. Mirror therapy was the only difference between groups.

RESULTS

OUTCOME MEASURES Measures included pain (Numeric Rating Scale), grip and pinch strength (Jamar tools), edema (wrist and MCP circumference), dexterity (Moberg Pick Up Test), hand function (Duruöz Hand Index), and quality of life (Nottingham Health Profile). Assessments occurred at baseline, week 4, and week 8. Although psychometric properties were not reported in the study, all tools have established reliability and validity in the literature. **RESULTS** All 40 participants completed the four week treatment and eight week follow up. Both groups demonstrated significant within group improvements ($p < 0.05$) in pain, strength, edema, dexterity, and hand function at week 4 and week 8. No statistically significant between group differences were found at any time point ($p > 0.05$). The authors concluded that adding mirror therapy to routine rehabilitation did not provide additional benefit for adults with acute trauma induced CRPS 1.

Conclusion

LIMITATIONS The study did not report reliability or validity for its outcome measures, increasing measurement bias. Several tools were self reported, introducing recall and response bias. The single blind design allowed performance bias, as participants knew their group assignment. Mirror therapy procedures and progression were not described in detail, limiting reproducibility. No home program was included, reducing understanding of functional carryover. The modest sample size, short follow up, and focus on acute trauma related CRPS 1 limit generalizability and may reduce power to detect small effects. Treatment fidelity was not addressed. **CONCLUSIONS** The study did not support the hypothesis that mirror therapy adds benefit to routine rehabilitation for acute post traumatic CRPS 1. Both groups improved similarly across all outcomes, suggesting mirror therapy did not enhance results beyond standard care. Findings are limited by design, sample size, and population specificity. Further research should explore whether CRPS stage, etiology, or neurophysiological factors influence responsiveness to mirror therapy.

Submission ID#2418715

CRITICALLY APPRAISED PAPER:THE INFLUENCE OF EARLY EXERCISE(PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION-BASED ACTIVATION) ON FUNCTIONAL PROGNOSIS IN PATIENTS WITH DISTAL RADIUS FRACTURE:A RETROSPECTIVE OBSERVATIONAL STUDY

Author(s) Jamie Erdely, Northern Arizona University; Gretchen Bachman, Northern Arizona University

Role: Author

PURPOSE

A PNF exercise program was implemented with patients dx with distal radius fractures(DRFx) vs standard therapy. Authors reported improved patient outcomes, decreased pain & decreased return-to-work (RTW) times, overall improving functional outcomes for patients; however, limitations may affect conclusions & should be interpreted with caution. While patients completing the PNF program showed slight statistical improvement, there was not clinical significance when compared to the control. Objectives of this study aimed to evaluate the effectiveness of a PNF program compared to standard care in improving functional recovery following DRFx.This is a retrospective comparative cohort study design (Level IIIb).

METHODS

Participants were chosen by surgeons & physiotherapists, if they met the inclusion criteria. Participants were not randomized & were a convenience sample after DRFx fixation. Recruitment took place over 1-year. Inclusion criteria: confirmed DRFx,surgical fixation,>18 years. Exclusion criteria: severe mental illness, multiple fx,nonunion, severe bone loss, conditions affecting healing, pregnant or breastfeeding or inability to commit to 12-wks of rehab. Control Group(n= 56):Received standard care of arm elevation, edema & pain management, mobilization maintenance& gradual PROM for wrist & digits. Provider type, frequency& duration were not reported. Intervention Group(n=58): Received standard care & the PNF program. This included isotonic training, antagonistic muscle reversal, joint mobility traction, rhythmic initiation & resistance training trained physiotherapists delivered tx 3-5x/wk for 20-30 min/session. Criteria to determine frequency within the 3-5 day range was not stated. Both intervention & control group programs were 8-wks with a follow-up at 3-mo.Setting was not provided.

RESULTS

Outcomes collected during follow-up visits, precise timelines are not stated. Outcome measures include: Goniometry: Measured wrist/ forearm ROM.Valid/reliable for UE conditions. PROM was included as an intervention but results did not state if AROM or PROM was measured. Dynamometer: Measured grip strength. The recognized gold standard for reliability/validity. Visual Analog Scale (VAS):Measured pain intensity. Valid/reliable for pain. Disabilities of the Arm Shoulder & Hand (DASH):Self-report measure. Valid/reliable for UE conditions. Radiography: Assessed callus formation & alignment. Appropriate for bone imaging. RTC:Patient-reported The PNF group demonstrated significant improvements in wrist flexion,extension,pronation,supination & grip strength compared to the control group at 6-wk ($p < 0.05$).The PNF group reported significantly lower scores on the VAS during rest & movement ($p < 0.05$),function ($p < 0.05$) & RTW one week earlier (7.37 ± 1.48 wks) than the control(8.32 ± 1.75 wks).Radiographs at 12-wk confirmed healing ($p = 0.002$) in the PNF group compared to the control. While results were significant, the clinical significance of these findings are weak, as they fall lower than the MDC.

CONCLUSION

Methodological Limitations: Selection & Researcher Bias: Use of non-randomized convenience sample at a single site & hand-selected participants, limiting generalizability; Performance Bias: No blinding to therapists or surgeons; the PNF group received specialized attention making it difficult to isolate efficacy; Measurement Bias: Evaluators not blinded to participant groups during ROM or strength testing; Social Desirability Bias: Reliance on self-reported tools may lead participants to over-report improvements to satisfy researchers; Interpretation Bias: Radiographic disagreement was resolved by consensus rather than a 3rd party; Cultural Bias: Varied definitions of RTW & standard of care in China may limit cross-cultural generalizability. Statistical Limitations: Adequate power unknown: Absence of an a priori power or post-hoc analysis; If considered a small sample the risk of Type II error increases; Effect Size: No calculated effect size

ABSTRACTS

(abstracts are listed in numeric order by control ID number)

was provided, making it difficult to determine clinical relevance; Measurement Error: Final reports omit the SEM, meaning results may not be reflective of true clinical change; Confounding Variables: TW data failed to account for gender, occupation, insurance type, payer source & socioeconomic status. Limitations in Result Interpretation: Temporal Constraints: The 8-week duration may be inadequate to capture long-term results, permanent functional recovery or late-stage complications; Reporting Bias: Selection bias regarding which radiographic images were included in the manuscript (n=4) may skew the perceived success of the intervention. Authors conclude that PNF exercise, versus standard care, improves ROM, strength, pain & function for individuals recovering from DRFx fixation. Due to the study design & limitations, results should be interpreted with caution.

Submission ID#2423714

INTERMITTENT VS CONTINUOUS TREATMENT OF FLEXION CONTRACTURES OF THE PROXIMAL INTERPHALANGEAL JOINT

Author(s) Candice James, George Washington University; Sarah Doerrer, George Washington University

PURPOSE

This level 1B randomized controlled trial compared range of motion improvements using either continuous versus intermittent orthotic wear for individuals with proximal interphalangeal (PIP) joint flexion contractures caused by trauma or post-surgical stiffness. Participants in the continuous wear group (20–22 hours/day) demonstrated significantly greater improvements in passive PIP joint extension than those in the intermittent group, supporting the importance of Total End Range Time (TERT) and low-load, prolonged stretch for reducing joint stiffness. From an occupational therapy perspective, therapists should consider early use of static progressive or dynamic orthoses with sustained low-load stretch while promoting adherence through patient education and a client-centered approach that supports daily participation. Limitations included no true no-treatment control group, reliance on self-reported adherence, a small sample size, and recruitment from a single clinical setting. Additionally, the study focused primarily on passive range of motion rather than functional or ADL outcomes, limiting direct OT relevance.

METHODS

A total of 91 participants with PIP joint range of motion limitations were screened, with 53 meeting inclusion criteria and 50 participants (57 affected joints) completing the study. Power analysis required 24 participants per group. Inclusion criteria included chronic PIP flexion contractures greater than 45 degrees caused by trauma or post-surgical complications. Exclusion criteria included acute tendon injuries or fractures, inflammatory joint conditions, PIP joint replacements, treatment for Dupuytren's disease, or lack of active PIP extension. Participants were recruited from a specialized hand therapy clinic between July and December 2022 and were randomly assigned to either a continuous or intermittent treatment group. The study received IRB approval, and participation was voluntary. The continuous treatment group wore an elastic tension orthosis for 20–22 hours/day from the start of the intervention to maximize Total End Range Time (TERT). The intermittent group initially wore the orthosis for 10–14 hours/day during weeks 0–3 before progressing to 20–22 hours/day after week 3. All participants also completed active-assisted flexion exercises for 20 minutes, four times daily. Interventions were monitored by a hand therapist over a 6-month follow-up period.

RESULTS

The primary outcome measure was passive range of motion (PROM) assessed by goniometry to evaluate PIP joint extension. Measurements followed ASHT guidelines, demonstrated high interrater reliability (>0.95), and were collected from baseline, 1 week, 3 weeks, and 6-month follow-up. Secondary outcomes included patient-reported discomfort using a 5-point Likert scale and treatment compliance measured through self-reported orthosis wear logbooks, both of which were subject to recall and reporting bias. Baseline characteristics of subjects included a mean age of 46.6 with 68% of subjects being male. Most contractures (47%) were moderate (31° – 45°). Results showed that continuous orthotic wear (20–22 hours/day) led to significantly greater improvements in PROM than intermittent treatment. At week 1, the continuous group demonstrated greater gains in PIP extension (18.6° vs. 12.6° , $p < .001$), with superior outcomes continuing throughout follow-up. Participants in the continuous group also reported less discomfort and achieved more good-to-excellent outcomes overall, suggesting that early continuous orthotic wear provides better short- and long-term joint mobility improvements.

CONCLUSION

The study had several limitations affecting reliability and generalizability, self-reported compliance and discomfort measures, lack of evaluator blinding, and no true no-treatment control group. Unequal dosing between groups may have influenced outcomes, as the continuous group immediately received the optimal 20–22 hour/day protocol while the intermittent group experienced delayed high-dose treatment. Additional limitations included a small sample size ($n = 50$), varied causes of contractures, a single specialized clinic setting, inconsistent follow-up durations, and a focus on PROM without assessing AROM, functional performance, or ADL participation. Despite these limitations, results showed that early continuous high-dose orthotic wear produced significantly greater improvements in passive PIP extension than intermittent treatment. Findings supported the importance of Total End Range Time (TERT), suggesting prolonged end-range positioning reduces joint stiffness and improves mobility. Participants who began with intermittent treatment did not achieve comparable outcomes after progressing to continuous wear, indicating delayed treatment may reduce recovery potential. Further research is needed to examine functional outcomes and strengthen relevance to client-centered OT practice.

Submission ID#2349328

BRIDGING PROFESSIONS: EXPLORING THE ROLE OF OCCUPATIONAL THERAPY IN INTERDISCIPLINARY UPPER LIMB PROSTHETIC REHABILITATION

Author(s) Krystal Brewington, SUNY Downstate Health Sciences University; Jessica Huang, SUNY Downstate Health Sciences University; Emily Kogan, SUNY Downstate Health Sciences University; Lee Cantor, SUNY Downstate Health Sciences University; Tziporah Weiss, SUNY Downstate Health Sciences University

PURPOSE

In the US approximately 2.3 million individuals live with limb loss, with 9.2% representing UE amputations (Ziegler-Graham et al., 2024). This is projected to increase by 145% by 2060, highlighting the growing need for specialized prosthetic rehab and interdisciplinary support services. UE prosthetic rehab is a complex involving evaluation, fabrication, fitting, and functional training (Conyers et al., 2009). Successful outcomes depend not only on prosthetic technology, but also on rehab supporting functional independence, psychosocial adjustment, & occupational participation. This research aligns with OTs role in promoting occupational performance and adaptation following physical impairment. Exploring OT involvement in UE prosthetic rehab supports the AOTF priority of novel practice areas and may encourage greater incorporation of prosthetic rehab and AT training within OT education & clinical practice. In adults with UE amputations, how does OT involvement within interdisciplinary prosthetic rehab impact functional performance, prosthesis utilization, psychosocial adjustment, and quality of life outcomes compared to rehab without OT involvement?

METHODS

PubMed, CINAHL, Google Scholar, and ProQuest databases were used for the literature review. Search terms: occupational therapy, UE amputation, prosthetic rehab, CHT, prosthesis abandonment, mental health, quality of life & interdisciplinary collaboration. Inclusion criteria: peer reviewed articles published within last 10 yrs involving adults with UE amputation and studies addressing OT, prosthetic rehab, psychosocial outcomes, functional performance, ADLs, or prosthesis use. Exclusion criteria: studies focused solely on LE prosthetics, articles without rehab outcomes, opinion pieces, editorials, conference abstracts, non-English publications & studies published more than 10 years prior to the search. Data extracted included study design, participant characteristics, interventions, outcome measures, major findings, and clinical implications related to OT, interdisciplinary rehab, mental health barriers, & prosthesis abandonment.

RESULTS

The literature identified OT as an essential component of interdisciplinary UE prosthetic rehab. OTs contributed to prosthetic training, adaptive equipment integration, ADL retraining, psychosocial support, and community reintegration. Multiple studies emphasized that successful rehab depends not only on prosthetic technology, but also on patient centered interdisciplinary care and functional training. Butkus et al. (2014) reported that OTs play a critical role in prosthetic control training, environmental adaptation, and occupational reintegration, while identifying limited prosthetic specific training and lack of standardized outcome measures among clinicians. Resnik et al. (2012) found that advances in prosthetic technology have exceeded clinician preparedness, contributing to inconsistent rehabilitation practices. Cohen-Tanugi et al. (2024) reported elevated rates of PTSD and depression among adults with traumatic UE amputations, while Armstrong et al. (2019) found that over 1/3 of participants experienced clinically significant psychological distress. Biddiss et al. (2011) and Resnik et al. (2024) reported that funding limitations & repair costs contributed to prosthesis abandonment. Zhang et al. (2023) found that improved prosthetic fit & patient education increased prosthetic satisfaction & functional outcomes. Most studies utilized qualitative, observational, or case study designs with small sample sizes & self-reported data, limiting generalizability. Despite these limitations, findings consistently supported the importance of interdisciplinary rehab, psychosocial support, & OT involvement in UE prosthetic care. Limited evidence-based OT frameworks and standardized clinical guidelines remain within the literature.

CONCLUSION

The literature was limited by small sample sizes, qualitative and observational study designs, and reliance on self-reported data, reducing generalizability. Variability in prosthetic devices, rehab approaches, and outcome measures limited comparison across studies. Few studies specifically examined OT interventions during prosthetic fabrication & fitting, highlighting a gap in the current evidence base. Current evidence supports the importance of OT within interdisciplinary UE prosthetic rehab. Barriers included limited clinician training, mental health concerns, funding challenges, & prosthesis abandonment continue to negatively impact outcomes and quality of life. OTs and CHTs should be integrated throughout the prosthetic rehab process to support ADL performance, prosthetic training, and community reintegration. Future research should focus on standardized rehab guidelines, evidence-based outcome measures, and improved psychosocial and educational interventions for individuals with UE amputations.

Submission ID#2400775

DOES PROXIMAL STABILITY FACILITATE DISTAL ABILITY?

Author(s) April Bryant, UCHHealth; Lydia Delkamiller, University of Nebraska Medical Center

PURPOSE

Physical and Occupational therapist frequently prescribe proximal exercises secondary to distal complaints. In adult patients with upper extremity injuries, will improving core and periscapular strength facilitate improved function of the distal upper extremity?

METHODS

-Search Terms Proximal stability AND distal function OR distal ability Core strength AND distal function OR distal ability Proximal strength AND distal function OR distal ability Core stability AND upper extremity OR upper limb OR hand OR arm -Databases/Sites Searched EBSO Cochrane CINAHL Pub Med -Limits Used English Articles published in or after 2013 Adult population

RESULTS

Results: Five Studies were included in the CAT to examine the relationship between core stability, shoulder stability, and upper extremity function. 1. A randomized controlled trial with a pre and post-test design examining whether core strengthening exercises improved upper extremity motor performance in 40 healthy individuals. Participants completed the PPT before and after the intervention. The intervention group performed core stabilization exercises including curl-ups, side bridges, and bird dogs, while the control group did not perform the exercises. Pre-test results showed no significant difference between groups. Following the intervention, the exercise group demonstrated significantly greater improvements in skilled motor performance on the PPT. These findings suggest that core stabilization training may enhance trunk stability, which in turn can improve upper extremity motor performance. 2. Cross-sectional study investigated the relationship between grip strength and scapular muscle endurance in a sample of healthy young adults. Grip strength was measured using a dynamometer, and scapular endurance was assessed using a scapular muscle endurance test. Results demonstrated a positive correlation between grip strength and scapular endurance. The findings suggest that scapular muscular endurance may contribute to improved upper extremity function and could have therapeutic implications for rehabilitation programs. 3. Cross-sectional study involving 104 young adults examined the relationship between trunk muscle endurance and upper extremity strength and performance. Participants completed multiple outcome measures including the side bridge test, Sorensen test, trunk flexor endurance test, shoulder muscle strength testing, Purdue Pegboard Test, and reaction time assessments. Results indicated positive correlations between trunk endurance measures and shoulder flexion and abduction strength. Additionally, trunk endurance measured by the Sorensen test was positively correlated with Purdue Pegboard performance. These findings suggest that improvements in core strength and stabilization may contribute to enhanced upper extremity performance. 4. Cross-sectional study involving 139 healthy adults aged 18-59 explored the association between trunk muscle endurance and upper extremity performance. Participants completed the McGill Trunk Muscle Endurance Test along with several upper extremity performance measures. The study found a positive correlation between trunk muscle endurance and upper extremity performance outcomes. Specifically, upper extremity rotation and stability scores increased as trunk endurance improved. These findings support the concept that trunk stability and endurance play an important role in upper extremity stability and functional performance. 5. A randomized controlled trial investigated the effectiveness of core stabilization training in individuals with elbow and wrist disorders receiving outpatient rehabilitation. Twenty-six participants aged 25-45 were randomly assigned to receive either traditional therapy alone or traditional therapy combined with core stabilization training. Both groups received treatment three times per week for six weeks. Outcome measures included pain, strength, endurance, and functional performance of the upper extremity before and after the intervention. Results demonstrated a statistically significant reduction in compensatory movement patterns in the group receiving core stabilization exercises. These findings suggest that incorporating core stabilization into rehabilitation programs may improve movement quality and reduce the risk of further injury.

CONCLUSION

Limitations of our CAT include the lack of available higher level of evidence studies and lack of studies involving individuals with upper extremity injuries/dysfunction. Despite these limitations, all of our studies did find that core and periscapular strength/stability are correlated with improved distal upper extremity function, with one study finding that core stabilization can reduce compensatory movement in individuals with upper extremity injuries. Clinicians should consider incorporating periscapular strength and core stabilization exercises into their clinical practice.

Submission ID#2415972

"TO PRESERVE OR REPLACE: NEURECTOMY VS. ARTHROPLASTY FOR THUMB BASAL JOINT ARTHRITIS — A CRITICALLY APPRAISED TOPIC"

Author(s) Savannah J. Olsen, Mayo Clinic- Florida Campus

PURPOSE

Clinical Scenario: A hand therapist treating patients with thumb carpometacarpal (CMC) osteoarthritis seeks to determine whether selective denervation (neurectomy) or arthroplasty (trapeziectomy ± LRTI) offers superior outcomes, to better counsel patients and communicate with referring hand surgeons. PICO Question: In adults with symptomatic thumb CMC osteoarthritis (P), does selective joint denervation (I) compared with trapeziectomy/arthroplasty (C) result in equivalent or superior pain relief, functional outcomes, and patient satisfaction, with acceptable reoperation rates and faster return to activity (O)?

METHODS

Search Strategy: PubMed/MEDLINE and clinical evidence databases were searched using: ("thumb carpometacarpal" OR "CMC" OR "basal joint") AND ("denervation" OR "neurectomy") AND ("arthroplasty" OR "trapeziectomy" OR "LRTI"). Filters: English, human subjects, 2019–2026. Inclusion Criteria: Adults ≥18 years with symptomatic thumb CMC OA; intervention = denervation; comparator = trapeziectomy ± LRTI or suspension arthroplasty; outcomes = pain (VAS), function (MHQ/DASH), quality of life (EQ-5D), strength, reoperation rate, or satisfaction. Prospective comparative studies, cohort studies, and systematic reviews were included. Case reports and expert opinion were excluded. Five articles were selected: three prospective comparative studies, one multicenter cohort, and one systematic review. 1. 53 patients (33 denervation vs. 20 T+LRTI); Eaton 2–4; 2-year follow-up. Equivalent bMHQ, strength, pain. Faster recovery (3 wks vs. 3 mo); 9% conversion rate. 2. 45 patients (35 vs. 10); up to 5-year follow-up. Equivalent VAS, MHQ, EQ-5D. 26% conversion rate within 6–12 months. 3. 48 patients (34 vs. 14); short-term follow-up. Equal VAS, MHQ, EQ-5D. Return to function: 3.3 weeks vs. 4.5 months. 4. 69 patients (76 thumbs), denervation only; median 30-month follow-up. 72% no reoperation; 28% reoperation rate. STT involvement (p=0.042) and AIN/PIN denervation (p=0.001) predicted worse outcomes. 5. Systematic review, 9 studies, 184 procedures. All reported pain improvement. Complication rate 11.4% (all minor). No RCTs identified.

RESULTS

Main Findings: All three comparative studies demonstrated equivalent pain relief and functional outcomes between denervation and arthroplasty at all follow-up points. The key differences were: (1) denervation provided dramatically faster return to function (3 weeks vs. 3–4.5 months) with shorter operative times; (2) denervation carried a 9–28% reoperation/conversion rate vs. near-zero for arthroplasty. The systematic review confirmed pain improvement across all denervation studies with only minor complications (11.4%). Prognostic analysis identified STT joint involvement and additional wrist denervation as predictors of denervation failure, while early-stage disease (Eaton I–II) predicted better denervation outcomes. Critical Appraisal: Evidence levels ranged from II to IV (OCEBM). No RCTs exist. All comparative studies were non-randomized with potential selection bias (denervation patients tended to be younger). Sample sizes were small, particularly arthroplasty arms (10–20 patients). Eaton staging was heterogeneous across studies. Follow-up ranged from short-term to 5 years. Despite these limitations, the consistency of findings across three independent comparative studies strengthens confidence in the equivalence of short-term outcomes.

CONCLUSION

Limitations: No RCTs; small non-randomized samples; potential selection bias; limited long-term data (>5 years); heterogeneous disease staging across studies. Clinical Bottom Line: Denervation and arthroplasty produce equivalent short-to-medium-term pain and functional outcomes (Grade B recommendation). Denervation offers faster recovery (~3 weeks vs. ~3–4.5 months) but carries a 9–28% reoperation rate. Denervation failure does not compromise subsequent arthroplasty. Clinical Implications and Recommendations: Early-stage disease (Eaton I–II): Denervation is a reasonable first-line joint-sparing option for patients prioritizing rapid return to activity, with the understanding that ~1 in 4 may need secondary surgery. Advanced disease (Eaton III–IV), CMC subluxation, or STT involvement: Arthroplasty remains the standard despite longer recovery. Denervation can be framed as a "bridge" procedure — success yields faster recovery and joint preservation; failure leaves arthroplasty fully available as salvage. A multicenter RCT is needed to definitively establish comparative effectiveness and optimal patient selection criteria.

Submission ID#2421295

EXTRACORPOREAL SHOCKWAVE THERAPY FOR THE ELBOW, WRIST, AND HAND: THERAPISTS' PERSPECTIVE ON CURRENT GUIDANCE

Author(s) Sabby Wade, Mayo Clinic; Nikki Branstiter, Mayo Clinic; Gretchen Carney, Mayo Clinic

PURPOSE

Extracorporeal shockwave therapy appears to be trending in outpatient clinics in several settings outside and within traditional hand therapy. This has also become an accessible treatment option for different types of patients. As a reimbursed service, the utility of shockwave regarding varied diagnoses and settings prompted these therapists to explore current evidence supporting its use. These therapists aimed to explore how shockwave therapy can be used in diagnoses of the upper extremity, specifically diagnoses affecting the elbow, wrist, or hand tissues. Our question is, what specific guidance does current evidence support for treatment frequency and parameters when using extracorporeal shockwave therapy on conditions of the elbow, wrist, and hand?

METHODS

The search strategy was completed utilizing Mayo Clinic Library resources for Pubmed and CINAHL. The reference list is available in table format in additional materials. The search terms used were "shockwave therapy" and "upper extremity conditions or diagnoses." We searched for studies that were published in the last 5-10 years as well as those which were either in English or available in English. We aimed to extract information from evidence on study components, comparison treatments, results, and parameters used for shockwave therapy.

RESULTS

The main findings of each study can be viewed in brief summary in the table provided in additional documents. Overall, the evidence suggests that shockwave therapy can be helpful in reducing pain in lateral epicondylitis and carpal tunnel syndrome. There is poor long-term follow up overall in the studies, so long-term benefits are hard to determine based on the evidence we found. There was also one study that showed short-term improvement in nerve conduction after shockwave treatment for mild carpal tunnel syndrome. The studies overall showed functional improvements in patients with lateral epicondylitis.

CONCLUSION

Limitations include the evidence base we were able to explore as it may be limited in nature, we sought only newer articles so some articles that were older than 10 years may have had more specific parameters but were not included in this review, and some articles did not highlight their specific parameters used for shockwave or their comparable treatment parameters. Our conclusion so far is that shockwave can be an excellent treatment option to reduce pain and improve function for lateral epicondylitis with a minimum of 3 treatments approximately 1 week apart. Shockwave could be a potential treatment option for short term relief for moderate carpal tunnel syndrome if using the focused shockwave therapy unit.

