

- If you are viewing this course as a recorded course after the live webinar, you can use the scroll bar at the bottom of the player window to pause and navigate the course.
- This handout is for reference only. Non-essential images have been removed for your convenience. Any links included in the handout are current at the time of the live webinar, but are subject to change and may not be current at a later date.

No part of the materials available through the continued.com site may be copied, photocopied, reproduced, translated or reduced to any electronic medium or machine-readable form, in whole or in part, without prior written consent of continued.com, LLC. Any other reproduction in any form without such written permission is prohibited. All materials contained on this site are protected by United States copyright law and may not be reproduced, distributed, transmitted, displayed, published or broadcast without the prior written permission of continued.com, LLC. Users must not access or use for any commercial purposes any part of the site or any services or materials available through the site.

Technical issues with the Recording?

- Clear browser cache using [these instructions](#)
- Switch to another browser
- Use a hardwired Internet connection
- Restart your computer/device

Still having issues?

- Call 866-782-9924 (M-F, 8 AM-8 PM ET)
- Email customerservice@OccupationalTherapy.com

continued



Current Topics in Upper Limb Loss and Difference Virtual Conference

Guest Editor: Debra Latour, OTD,
MEd, OTR/L

continued

Current Topics in Upper Limb Loss and Difference: *Unlimb*ed Wellness and Secondary Conditions

Debra Latour, OTD, M.ED., OTR/L

continued

Learning Outcomes

- As a result of this course, participants will be able to:
 - list 3 factors that contribute to health behavior change
 - describe the benefits and challenges of using telehealth as a health care delivery platform
 - describe the issues that are important to the population and that impact care
 - list and describe 3 secondary conditions related to each category (physical and psycho-social) and strategies to mitigate and/or prevent these problems

3

Disclosures



- 63+:Congenital UL difference
- 62+:Lifelong prosthesis user
- 41+:Occupational Therapist
- Full-time faculty at Western New England University
- Owner of Single-Handed Solutions, LLC
- All materials in this presentation copyrighted, owned by Single-Handed Solutions, LLC



4

Background

- 2,000,000 Americans *
- +28,000,000 Americans *
- 1:4 ULL : LLL
- ~2,000 Americans at, proximal to wrist**
- 0 Information!!!



“Those with limb loss in America have been forgotten in the health care system... because there is no active medical surveillance”

Sheehan and Gondo, 2014

5

Review of the Literature: Evidence and Themes

- Need for Collaborative Care
- Secondary Conditions
- Including Psychosocial Impact
- Need for Prosthetic Training
- Access to Care and Telehealth (TH)



6

Needs Assessment 1

- QuickDASH
- McGann Client Feedback Form
- Focus Group Questions

Focus Group Questions

Please consider the following topics and questions in preparation for our focus group discussion activity on April 22, 2017 at 9 AM.

1. How do you perceive your prosthesis? Some examples for discussion include:
 - a. As a tool that you use purely for function
 - b. As a tool that you use for social purposes
 - c. As an extension or a part of your body or self-identity
 - d. As a combination of any, all or other purposes
2. Do you ever feel that the prosthesis is an extension or a part of your body or self-identity? Please be prepared to explain.
3. If you could design your perfect prosthesis, what would it look like?
4. What is your actual prosthesis wear schedule and use?
5. What are your perceptions about the prosthetic training that you received? Some examples for discussion include:
 - a. Was it enough?
 - b. Was it too much?
 - c. Was it relevant to your lifestyle, goals, and/or values?
6. Please share with us your experiences of pain in your opposite arm, neck or back, if any.
7. Please be prepared to tell us, if at all, how you became informed of the likelihood of developing overuse syndrome.
8. Please share with us your experiences, if any, with seeing others with upper limb differences in your community.
9. What experiences do you have of isolation because of your congenital difference?
10. What experiences do you have of participation in peer support group activities?
11. How do you manage stress?
12. What is your access to specialized care relevant to your congenital limb difference, or prosthesis?
13. Can you describe some awkward social experiences related to your congenital limb difference and/or your prosthesis and how you handled them? Some examples for discussion include:
 - a. Describe what happens when you meet someone for the first time or must shake hands.
 - b. Describe how you feel when you drop items in public, such as to manage currency at a cash register.
 - c. Describe how you feel when strangers offer to help you.
14. Please share with us what strategies you use, if any, to prevent others from seeing your residual limb or prosthesis when in public.
15. What factors do you think help you to "feel good about yourself"?

7

Needs Assessment 1 Results

Emerging Themes

- Overuse, trauma to 'sound' limbs, other anatomy
- Lack of prior information
- Difficulty to obtain specialized services
- Social isolation
- Past experiences of being bullied, excluded
- Concern for others

Changes in Scores

Individual Participant Data

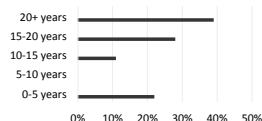
Client	Age	Sex	Side	Prosthesis	Pre-FG Q-DASH GDI	Post-FG Q-DASH GDI	Pre-FG MCFF-M	Post-FG MCFF-M
1	70.9	M	L	Passive Aesthetic	29.5	25	70.8%	78.3%
2	64.6	F	R	Passive Aesthetic Activity-specific	18.18	15.15	66.67%	75.2%
3	62.5	M	L	External-power Activity-specific	13.64	11.4	76.9%	85%
4	59.8	M	L	External-power	38.63	38.63	64.2%	70.6%
5	52.1	M	R	External-power	56.8	45.1	65.38%	83.2%

If nominal beneficial change can be detected following one strategic interaction, then how much greater might be the impact of several planned interactions?

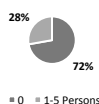
8

Needs Assessment 2

OT Experience



Number of ULL/D Persons Treated in Past Year



Practitioner Survey Results

Please rate the following statements:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I have basic knowledge about treatment strategies for individuals with ULL/D.	27.8%	44%	16.7%	11.1%	
I feel competent treating the individual with unilateral ULL/D.	16.7%	33.3%	27.8%	16.7%	5.6%
I feel competent training an individual to use a body-powered prosthesis toward functional independence.	5.6%	11.1%	16.7%	44.4%	22.2%
I feel competent training an individual to use an externally-powered prosthesis toward functional independence.		16.7%	16.7%	38.9%	27.8%
I have basic knowledge about telehealth as it pertains to OT intervention.		38.9%	50%	11.1%	
I would consider consultations via telehealth if they were available.	50%	44.4%	5.6%		

9

Gaps

Healthy People 2020

- Multi-faceted Challenges
- Access to Specialized Care
- Specialized training, consults for practitioner

National Prevention Strategy

- Create healthy environments
- Promote physical, mental health
- Prevent further disparity
- Priority areas:
 - Active living
 - Injury and violence-free living
 - Mental, emotional well-being
- Affects all population levels:
 - Individuals with ULL/D
 - Community Practitioners
 - Administrative, Funding and Policy-makers

10

Program Goals

Overarching Goal:

to use TH to improve understanding of secondary conditions,
learn strategies for self-advocacy, and access peer support.

- Specific objectives for Participants to:
 - Identify 3 strategies to prevent/protect from further physical disparities
 - Successfully use teleconferencing to access peer support
 - Identify 3 strategies to manage awkward social situations
 - Identify 3 strategies to self-advocate in medical and social situations

11

Program Description

- Pre-program interview
- 10 sessions/12 weeks
- Peer-Interactive, Participatory
- 3 distinct modules
 - Physical Conditions, Strategies
 - Health Care Visits
 - Psycho-Social Conditions, Strategies
- Post Program Interview

Session	Leader	Topic	Activities
1	Program Manager	What is overuse?	<ul style="list-style-type: none"> ◦ Information Sheet ◦ Pre-program survey ◦ QOL survey ◦ Group Discussion
2	Peer to Peer	What compensation strategies do we use?	<ul style="list-style-type: none"> ◦ Create Tips and Tricks sheet ◦ Group Discussion
3	Program Manager	Other physical disparities	<ul style="list-style-type: none"> ◦ Information Sheet ◦ Group Discussion
4	Peer to Peer	How do we self-advocate to health care providers?	<ul style="list-style-type: none"> ◦ Create Tips and Tricks sheet ◦ Group Discussion
1	Program Manager	Guided group discussion: Visiting the Doctor, An All or Nothing Experience	<ul style="list-style-type: none"> ◦ Survey program satisfaction, TH experience
2	Peer to Peer	Guided group discussion: Experiences Using Tip Sheet and Practitioner Visit Guide at MD Visit	
1	Program Manager	Greetings and Disclosures	<ul style="list-style-type: none"> ◦ How do we greet people? ◦ Do we disclose our limb difference, conceal it, or...? ◦ Group Discussion
2	Peer to Peer	Sharing social stories	<ul style="list-style-type: none"> ◦ Create Tips and Tricks sheet ◦ Group Discussion
3	Program Manager	Help!	<ul style="list-style-type: none"> ◦ How do we feel when strangers stare, or point? ◦ How do we request or refuse help? From family? From strangers? ◦ Group Discussion
4	Peer to Peer	How do we self-advocate?	<ul style="list-style-type: none"> ◦ Create Tips and Tricks sheet ◦ Survey program satisfaction, TH experience, QOL Survey ◦ Group Discussion

12

Program Materials

Module 1: Sessions 1-4

- Introduce participants
- Problems experienced with anatomy other than limb loss/difference
- Interventions
- Prevention
- Talking to Our Providers

Session 1 Tip Sheet: Common Overuse Conditions

	What it is	Cause	Symptoms	Treatments	Prevention
SHOULDER					
Rotator Cuff Tendinitis	Impingement of cuff structures on overlying bone	Prevalent in work-related disorders	Weakness and pain that may radiate down the arm, limited shoulder motion (A&P, ROM)	Rest the shoulder; Avoid overhead activities x3-5 wks; Limit raising arms; Avoid immobilization; Medic: NSAIDs, steroidal injections; Gentle ROM; Surgery	Orient objects and tasks in front of body; Reduce weight of objects; Hold objects close to body; Use step-stools; Ask for help!
ELBOW					
WRIST					
HAND					
NECK					
SPINE					
HIPS					
KNEES					
ANKLES					
FEET					

13

Program Materials

Module 2: Sessions 5-6

- What do our Providers do?
- What do we wish our Providers would do?
- What do we wish our Providers would do?
- What do we our Providers need to know?
- Preparing for a Provider Visit Use

Session 1 Tip Sheet: Common Overuse Conditions

Timing	Situation/Topic	Issue	How I Feel	What I Do	What Else Could I Do?
Preparing for the Visit	Disclosure	Should I prepare practitioner in advance regarding my ULL/D?			
	Explaining Medical History	How much information should I provide?			
	Organizing	Medical information is disorganized			
The Visit	Greetings	Practitioner extends hand to shake my (absent) hand			
	Labels	Practitioner uses any of the following or similar: "Amputee", "Different", "Special", "Disabled", "Handicapped"			
	Disclosures	Should I wait for the practitioner to ask about my absent limb?			
	Explaining Medical History	Repetitive questions about ULL/D			
	Disinterested or Dismissive	Practitioner does not really seem to be interested in my concerns			
	Impromptu "Round"	After practitioner greets me, leaves and returns with colleagues to "meet" me			
	Lack of Holistic Approach	Practitioner focuses on side of ULL/D			
	Incorrect terminology	Practitioner uses terms that are not used currently or used incorrectly			
	Choice	Should I assume provider is familiar with diverse needs of individual with ULL/D? Should I prepare practitioner in advance regarding my ULL/D?			
New Provider	Referral	Should I prepare practitioner in advance regarding my ULL/D?			
	Explaining Medical History	Repetitive questions about ULL/D			

14

Program Materials

Module 3: Sessions 7-10

- Common Awkward Social Situations
- Family, Friends, Strangers
- Home, Community, Work
- How it feels
- What we do
- What we could do instead

Session 1 Tip Sheet: Common Overuse Conditions

Topic and Event	Who is Involved	How I Feel	What I Do	What Could I Do?
Being Different: *Person uses any of the following or similar: "Amputee", "Different", "Special", "Disabled", "Handicapped" Or offensive words	Family			
	Friends			
	Strangers			
	Children			
Stares and/or Points	Family			
	Friends			
	Strangers			
	Children			
Greetings: Side-hug or Person extends hand to shake my (absent) hand; Business situations; Questions that emerge; Fist bump; "Shitty" handshake (limp or attempting to mimic)	Family			
	Friends			
	Strangers			
	Children			
Disclosures: Advance Preparation or Repetitive questions	Family			
	Friends			
	Strangers			
	Children			
Regarding Help: Insists on helping; Minimizes need	Family			
	Friends			
	Strangers			
	Children			

15

Theoretical Frameworks

- **Supporting evidence: Literature Review**
 - Uninformed: secondary conditions likelihood
 - Experienced isolation and social stigma
- **Precaution-Adoption Process Model (PAPM)**
 - Linear, systematic progression of steps toward change
 - Choice of "no change"
 - Dynamic, progressive stages
 - May revert to prior stage; may move forward from decision not to act (Stage 3)
 - Educate; once educated, choice to accept or reject action
 - May maintain new behavior(s)

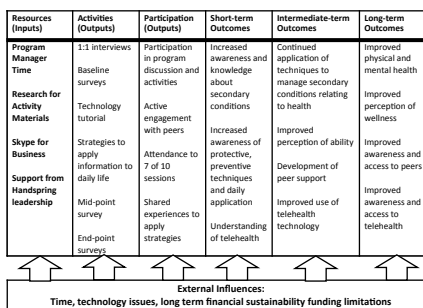
The intrapersonal processes of meeting with peers provides positive impetus for behavior change, social identity, and support.

16

Program And Evaluation Design

Logic Model

- Uses measures
- Offers comparative perceptions
- Pre-/post-group experiences
- Links between participants/ resources/outcomes to identify performance measures
- Sequential “if/then” deduction
- Each step builds upon next
- Accountability to facilitate stakeholder buy-in



17

Program Measures

- Comparative perceptions to pre- and post-group experiences
- On-line customized survey
- Independent MCFF-M completion
- 1:1 interview
 - PHWA
 - Participant Goals
- Post-group interview: telephone or TH interview?

Subject	Pre-Group	Post Group	Comments
A	82.5	91.7	Received first b-p prosthesis wk4
B	NA	NA	No prosthetic technology → interested
C	78.5	93.3	Uses multiple devices

PZZI HEALTH AND WELLNESS ASSESSMENT SCORES					
Health Topic	Pre-Group	Pre-Group Mean	Post-Group	Post-Group Mean	Comments
Social	A:7 B:6 C:10	7.8	A: 8 B: 8 C: 10	8.7	+1 +2 hearing peer input offer =
Physical	A:5 B:6 C:5	5.3	A:7 B:7 C:7	7	+2 +1 started w/personal train +2
Family	A:8 B:8 C:10	8.7	A:10 B:8 C:10	9.3	+2 = =
Occupational	A:9 B: 7 C:10	8.7	A:10 B: 7 C:10	9	+1 = =
Mental/Emotional	A:5 B:8 C:10	8	A:9 B:8 C:10	9	+4 =: Getting ready for baby is =
Spiritual	A:9 B:6 C:10	8.3	A:10 B:8 C:10	9.3	+1 "Felt differently out in p staring; feeling emboldene five someone in public. Thi thought I would always fee +2 "Learning new ts and tl others by sharing ideas. =: "I think I rated myself too than 10 on most of these item, I would."

18

Results

- Promoted health, wellness and well-being
- Education
- Meaningful Occupation
- Social Participation

“Unlimbited Wellness made a difference in my confidence to speak about my limb difference and my prosthesis especially in public with strangers; the program gave backbone.”

- I learned strategies to deal with situations in public.
- I feel much more approachable, comfortable, and confident; less self-conscious.
- Contributing to group projects made me feel like I was doing something important and I was learning by doing.
- I felt invested in this group even though we were far apart from each other. I was not alone and being a part of something with like-peers gave me a different perspective.
- Even things that were uncomfortable became comfortable because of the context of familiarity with anonymity.
- I am less likely to sound angry and I want to make a difference for the next person.

19

Discussion

Would stakeholders perceive value in the Unlimbited Wellness program?

- Program evaluation:
 - dynamic changes in health behavior, perceptions of well-being, and that access to peer interaction and information makes a difference
- Surveys at stages of the group process:
 - behavior changes individually and collectively
- Addressed the challenge initially posed, to address and meet the physical and psychosocial needs of America's forgotten,
 - individuals with diminished disparity empowering to self-advocacy

20

Implications: Population

- Information for prevention and empowerment
- Self-Advocacy
- Improved health, wellness and well-being
- TH as connected health:
 - Delivery of services
 - Access to peers
- Potential policy changes

21

Implications: OT Practitioners

- Access to specialized training, consults, support
- Access to patient/client population
- Population, cultural awareness
- Measures, tools to address QOL, health, well-being
- Interventions to prevent further disparity

22

Next Steps

- New groups forming!
 - Shorter duration, more frequent
 - Expanded, separate groups:
 - Children
 - Parents of children,
 - Individuals with acquired loss
 - Individuals with bilateral loss
 - Professional practitioner group!
- Future study
 - Differences amongst groups relating to secondary conditions and strategies to prevent and/or manage them
 - Effectiveness of groups to determine
 - Impact of participation
 - Extent secondary conditions are mitigated and
 - If a refresher or additional programming would be beneficial

23

References

- American Occupational Therapy Association. (2014). Occupational therapy practice framework: Domain and process (3rded.) *American Journal of Occupational Therapy*, 68, S1-S48. <https://doi.org/10.5014/ajot.2014.682006>
- American Telemedicine Association. (2010). A blueprint for telerehabilitation guidelines Retrieved from <http://hub.americantelemed.org/resources/telemedicine-practice-guidelines>.
- Amputee Coalition. (n.d.). Home page. Retrieved from <http://www.amputee-coalition.org>.
- Atkins, D. (2014). Comparison of the “perception of disability” in bilateral prosthetic wearers bilateral hand transplants and bilateral toe-to-hand transfers. *Myo-Electric Controls Symposium*, (MEC), Fredericton, New Brunswick.
- Bouwsema, H., Van Der Sluis, C.K., & Bongers, R.M. (2014). Changes in performance over time while learning to use a myoelectric prosthesis. *Journal of NeuroEngineering and Rehabilitation*, 11(1), 16. <https://doi.org/10.1186/1743-0003-11-16>

24

References

- Brouwers, M. A. H., Roeling, I. E. M., van Wijk, I., Mooibroek-Tieben, E. P. H., Harmer-Bosgoed, M.W., & Plettenburg, D.H. (2014). Development of a test prosthesis: An important tool in the decision-making process in providing patients with an upper limb prosthesis. *Myo-Electric Controls Symposium (MEC)*, Fredericton New Brunswick, Canada.
- Burger, H., & Vidmar, G. (2015). A survey of overuse problems in patients with acquired or congenital upper limb deficiency. *Prosthetics and Orthotics International*, 40(4), 497-502. <https://doi.org/10.1177/0309364615584658>
- Cary, M. J., Spencer, M. Carroll, A., Hand, D. H., Amis, K., Karan, E., & Hoenig, H. M. (2016). Benefits and challenges of delivering tele-rehabilitation services to rural veterans. *Home Healthcare Now*, 34(8), 440-446. <https://doi.org/10.1097/NHH.0000000000000441>.
- Corathers, C., & Janczewski, M. (2006). The orthotic and prosthetic profession: A workforce demand study. Prepared for the National Commission on Orthotic and Prosthetic Education and the American Orthotic and Prosthetic Association. Retrieved from www.ncope.org/assets/pdf/final-report-publishing_3-07.pdf

25

References

- Egermann, M., Kasten, P., & Thomsen M. (2008) Myoelectric hand prostheses in very young children. *International Orthopaedics*, 33(4), 1101-1105. <https://doi.org/10.1007/s00264-008-0615-y>
- Gambrell, C. R. (2008). Overuse syndrome and the unilateral upper limb amputee: Consequences and prevention. *Journal of Prosthetics and Orthotics*, 20(3), 126-132. <https://doi.org/10.1097/JPO.0b013e31817ecb16>
- Glanz, K., Rimer, B., & Viswanath, K. (eds.). (2008). *Health behavior and health education: Theory, research, and practice* (4th ed.). San Francisco, CA: Jossey-Bass.
- Hill, W., Kyberd P., Hermansson, L. H., Hubbard, S., Stavadahl, O., Swanson, S., & Cooper, M.F. (2009). Upper limb prosthetic outcomes measures (ULPOM): A working group and their findings. *Journal of Prosthetics and Orthotics*, 21(4), 69-82. <https://doi.org/10.1097/JPO.0B013E3181ae970b>
- Huinink, H. B., Bouwsema, H., Plettenburg, D.H., van der Sluis, C.K., & Bongers, R. M. (2016). Learning to use a body-powered prosthesis: Changes in functionality and kinematics. *The Journal of NeuroEngineering and Rehabilitation*, 13, 90-101. <https://doi.org/10.1186/S12984-016-0197-7>

26

References

- Jones, L. E., & Davidson, J. H. (1999). Save that arm: a study of problems in the remaining arm of unilateral upper limb amputees *Prosthetics and Orthotics International*, 23, 55-58. <https://doi.org/10.3109/03093649909071611>
- Latour, D. (2016a). Use of prosthesis simulators to educate occupational therapists as effective team members. *American Occupational Therapy Association (OTA) Annual Conference*, Chicago, IL; April 2016.
- Latour, D. (2016b). Impact of bilateral upper limb prosthesis simulators in pre-prosthetic training: A case study. *American Orthotics and Prosthetics Association (AOPA) Annual Conference*, Boston, MA; September 2016.
- McCawley, P. (2002). The logic model for program planning and evaluation. University of Idaho Extension. Retrieved from <http://www.uiweb.uidaho.edu/extension/LogicModel.pdf>
- Murray, C. D. (2005). The social meanings of prosthesis use. *Journal of Health Psychology*, 10, 425-441. <https://doi.org/10.1177/1359105305051431>

27

References

- Murray, C. D. (2009). Being like everybody else: The personal meanings of being a prosthesis user. *Disability and Rehabilitation*, 31, 573-581. <https://doi.org/10.1080/09638280802240290>
- National Prevention Council. (2011). *National Prevention Strategy*. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General. Retrieved from <http://www.surgeongeneral.gov/priorities/prevention/strategy/report.pdf>
- Ostlie, K., Franklin, R., Skjeldal, O., Skrondal, A., & Magnus, P. (2011). Musculoskeletal pain and overuse syndromes in adult acquired major upper-limb amputees. *Archives of Physical Medicine and Rehabilitation*, 92 (12), 1967-1973. <https://doi.org/10.1016/j.apmr.2011.06.026>
- Pizzi, M. (2009). The Pizzi Holistic Wellness Assessment. *Occupational Therapy in Health Care*. 13; 51-66. http://dx.doi.org/10.1080/J003v13n03_06
- Richmond, T., & Cason, J. (2010). Telerehabilitation position paper. *American Journal of Occupational Therapy*. 64S, S92-S102 <https://doi.org/10.5014/ajot.2010.64s92-64s102>

28

References

- Rimer, B., & Glanz, K. (2005). *Theory at a glance: A guide for health promotion practice*, San Bernardino, CA: National Institutes of Health.
- Rogante, M., Bernabeu, M., Hermens, H. J., Huijgen, B., IJsbroukx, S., Macellari, V., & Giacomozzi, C. (2009). Measurement of physical quantities in upper-limb tele-rehabilitation. *Journal of Telemedicine and Telecare*, 15(3), 153-155. <https://doi.org/10.1258/jtt.2009.003015>
- Rogante, M., Grigonia, M., Cordella, D., & Giacomozzi, C. (2010). Ten years of telerehabilitation: A literature overview of technologies and clinical applications. *NeuroRehabilitation*, 27, 287–304. <https://doi.org/10.3233/NRE-2010-0612>
- Sheehan, T. P., & Gondo, G. C. (2014). Impact of limb loss in the United States. *Physical Medicine and Rehabilitation Clinics of North America*, 25(1), 9-28. <https://doi.org/10.1016/j.pmr.2013.09.007>
- Tousignant, M., Boissy, P., Corriveau, H., Moffet H. (2006). In home telerehabilitation for older adults after discharge from an acute hospital or rehabilitation unit: A proof-of-concept study and costs estimation. *Disability and Rehabilitation. Assistive Technology*, 1(4), 209-16. <http://dx.doi.org/10.1080/17483100600776965>

29

References

- Veras, M., Kairy, D., Rogante, M., & Giacomozzi, C. (2015). Outcome measures in tele-rehabilitation and virtual reality for stroke survivors: Protocol for a scoping review. *Global Journal of Health Science*, 8(1), 79-82. <https://doi.org/10.5539/gjhs.v8n1p79>
- Wijdenes, P. A., Brouwers, M. A. H., & van der Sluis, C. K. (2016). PPP-Arm: the implementation of a national prescription protocol. 2016 *Trent International Prosthetic Symposium (TIPS)*, Glasgow, Scotland.
- World Health Organization. (n.d.). Retrieved from <http://www.emro.who.int/about-who/public-health-functions/health-promotion-disease-prevention.html>
- Wright, V. (2009). Prosthetic outcome measures for use with upper limb amputees: A systematic review of the peer-reviewed literature, 1970 to 2009. *Journal of Prosthetics and Orthotics*, 21, 4S, 3-63. <https://doi.org/10.1097/jpo.0b013e3181ae9637>
- Ziegler-Graham, K., MacKenzie, E.J., Ephraim P.L., Travison, T.G., & Brookmeyer, R. (2008). Estimating the prevalence of limb loss in the United States: 2005 to 2005. *Archives of Physical Medicine and Rehabilitation*, 89, 22-429. <https://doi.org/10.1016/j.apmr.2007.11.005>

30

continued

I am a member of the international

hand  smart

Sharing Resources of Upper Limb Absence Worldwide

31

continued

Questions?

- For more information:
- singlehandedsolutions@gmail.com
- debra.latour@wne.edu



32

continued



Current Topics in Upper Limb Loss and Difference Virtual Conference

- | | |
|-------------|--|
| Mon 11/11 | Unlimbited Wellness and Secondary Conditions
Debra Latour, OTD, MEd, OTR/L |
| Tues 11/12 | Problem Solving Complex Issues with Pediatric
Upper Limb Loss Difference
Vivian Yip, OTD, MA, OTR/L |
| Wed 11/13 | OT for Targeted Muscle Reinnervation and
Pattern Recognition Control
Kristi Turner, DHSc, OTR/L |
| Thurs 11/14 | Bilateral Upper Limb Loss
Shawn Swanson Johnson, OTR/L |
| Fri 11/15 | Electronic Multi-Articulating Hands and Digits,
Toe-to-Hand Transfers, and Hand Transplantations
Diane J. Atkins, OTR/L, FISPO |

33