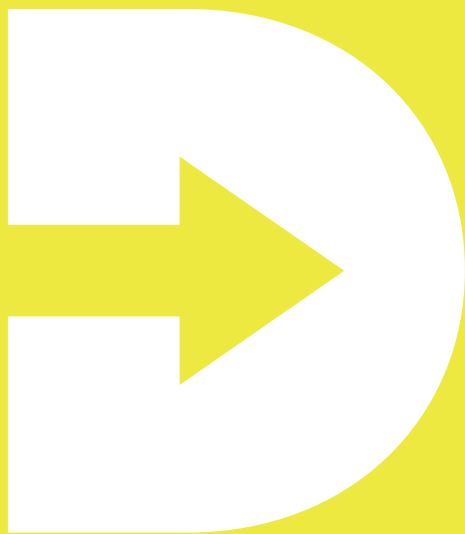


DIRECTIONS



CLINICAL REASONING & COMPETENCY IN A FAST-PACED WORLD:

CAN WHEELCHAIR PRESCRIPTION BE
EFFECTIVE AND EFFICIENT?

Page 20





INTRODUCING

The NEW e-motion

Lighter.

Faster.

Stronger.

Smarter.



	PREVIOUS (M15)	NEXT GEN* (M25)
Maximum Torque (per wheel)	30 Nm	 40 Nm +33% STRONGER
Maximum User Weight	286 lbs.	 330 lbs. +15% STRONGER
Maximum Speed	3.7 mph	 5.2 mph +41% FASTER
Weight (per wheel) With stainless steel push rim & batteries	23 lbs.	 17 lbs. -35% LIGHTER

*Data comparing the e-motion M15 to the e-motion M25 from Alber Germany.

Contact Your Invacare or Alber Rep Today

888.426.8581 | info@alber-usa.com | alber-usa.com
Alber USA LLC | 1005 International Drive | Oakdale, PA 15071

©2021 Invacare Corporation. All rights reserved. Trademarks are identified by the symbols ™ and ®. All trademarks are owned by or licensed to Invacare Corporation unless otherwise noted. Specifications are subject to change without notification. Form No. 20-246 rev3/20 201238



Congratulations

At Ability Members Group, we're proud to stand with 65 of our Members, and well over 100 other Canadian home medical equipment providers who have registered with NRRTS.

Thank You...

for your desire to be the best you can be as we grow together to increase the independence and freedom of our clients all across Canada.



Ability Members Group is a Canadian network of seasoned Home Medical Equipment providers. We leverage our collective buying power and support members to successfully grow their businesses and provide excellence in client care. The network operates locations across British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Yukon.

Enjoy all the benefits of strength in numbers while you run your business your way. To learn more, visit us at: abilitymembers.com



6 FROM THE NRRTS OFFICE

Summer Already?

8 LIFE ON WHEELS

Just Keep Wheeling

10 NOTES FROM THE FIELD

Davis Finds
Songwriting Therapeutic

14 CRT UPDATE

Stop July Cuts to CRT
Manual Wheelchair Accessories

16 CLINICIAN TASK FORCE

Dollars and Sense

FEATURE

20 CLINICAL PERSPECTIVE CEU ARTICLE

Clinical Reasoning & Competency
in a Fast-Paced World



30 MEDICAL FOCUS

Spina Bifida

36 REHAB CASE STUDY

Problem Solving with Elio

40 CLINICALLY SPEAKING

Sometimes You Find a Career, and
Sometimes a Career Finds You

44 WEESIE'S WORLD

What is a Complex Rehab
Technology Supplier?

46 RESNA

Pay it Forward:
ATP Survey Coming Soon

48 DIRECTIONS CANADA

Qualified Designation

IN EVERY ISSUE

50 | New NRRTS Registrants

53 | New CRTS® and Former Registrants

54 | Renewed NRRTS Registrants

Back Cover | Charter Corporate Friends of NRRTS,
Corporate Friends of NRRTS, Association Friends of NRRTS

ADVERTISERS

ABILITY MEMBERS GROUP	PAGE 3
ALTIMATE (EASYSTAND) ..	INSIDE BACK COVER
AMYLOR.....	PAGE 5
CLINICIAN TASK FORCE	PAGE 48
ETAC.....	PAGE 13
INVACARE	INSIDE FRONT COVER
KI MOBILITY.....	PAGE 47
MK BATTERY	PAGE 19
MOTION CONCEPTS.....	PAGE 45
PACESAVER/LEISURE-LIFT.....	PAGE 7
PRECISION REHAB MANUFACTURING ..	PAGE 11
PRIME ENGINEERING.....	PAGE 53
RIDE DESIGNS	PAGE 12
STEALTH PRODUCTS	PAGE 49
UNITED SPINAL ASSOCIATION	PAGE 17
US REHAB	PAGE 51

THE OFFICIAL PUBLICATION OF The National Registry of Rehabilitation Technology Suppliers VOLUME 2021.3 | \$5.00 USD

The opinions expressed in DIRECTIONS are those of the individual author and do not necessarily represent the opinion of the National Registry of Rehabilitation Technology Suppliers, its staff, board members or officers.

DIRECTIONS reserves the right to limit advertising to the space available. DIRECTIONS accepts only advertising that furthers and fosters the mission of NRRTS.

NRRTS OFFICE

5815 82nd Street, Suite 145, Box 317, Lubbock, TX 79424

P 800.976.7787 | www.nrnts.org

For all advertising inquiries, contact Bill Noelting at bnoelting@nrnts.org

EDITOR-IN-CHIEF

Amy Odom, BS

CLINICAL EDITOR

Michelle Lange, OTR, ABDA, ATP/SMS

EDITORIAL ADVISORY BOARD

Andrea Madsen, ATP, CRTS®

Annette Hodges, MA, BS

Katie Roberts, MS, ATP, CRTS®

Michelle Lange, OTR, ABDA, ATP/SMS

Weesie Walker, ATP/SMS

DESIGN

Amanda Sneed - Hartsfield Design

COVER CONCEPT, DESIGN

Weesie Walker, ATP/SMS

PRINTER

Craftsman Printers, Inc.

**550 LB
WEIGHT
CAPACITY**

ALLTRACK HD³

RIDE WITH CONFIDENCE!

No worries...Our full-suspension,
full-comfort **Alltrack HD3** delivers
the **Ultimate** performance you require in a
Very Heavy-Duty power wheelchair.



Scan for more details

Highlights:

- One-of-a-kind Dual Action Suspension
- Robust and superior performance
- Optimal stability and comfort
- Easy maneuvering over routine obstacles indoors and outdoors
- Extremely short 20.5" turning radius for SUPERB handling in tight spaces
- Seat to Floor Height as low as 17" with Power Tilt & Recline
- Best in class for its base width of 27.5"
- Full range of power seating options
- HCPCS codes: K0852/K0860/K0863



Like and follow us on Social Media

 **AMYLOR**

SUMMER ALREADY?

Written by: **GERRY DICKERSON, ATP, CRTS®**

It is hard to believe it is almost summer. For the most part, it has been 14 months of the pandemic lockdown. As I stated in my last president's message, we inch ever closer to "normalcy."

Each part of North America seems to have a dizzying array of pandemic-related issues. Some areas are still under intense lockdowns, some experiencing increases in infections, and others, like where I live and work, are looking toward full openings by the end of June.

Our colleagues at RESNA are hosting a virtual conference again this year. You can view the conference website here: www.resna.org/Events/Annual-Conference. I attended last year's conference, and it was worth every penny. One of the coolest aspects of the virtual conference was the ability of people from all over the globe to attend for the first time. Conventional, in person conferences, were beyond their available financial resources.

As you have probably heard by now, the International Seating Symposium (ISS), that is held every other year in Vancouver, British Columbia, has lost its financial support mechanism. As of now that conference has

not been scheduled. Our Canadian friends are working hard with U.S. colleagues to see if there can be an alternative solution.

The good news is the US International Seating Symposium will be held Oct. 28-30, with pre-symposium Oct. 27. ISS will have options of, saving any pandemic issues, in-person, online synchronously, and asynchronously after the conference. If I am right, it will be the first time all of us have had an opportunity to be together, in person, in more than a year!!

NRRTS, NCART, Clinician Task Force and various other groups continue to work on Complex Rehab Technology (CRT) issues, stopping the cuts to CRT Manual Wheelchair Accessories, establishing coverage for power seat elevation and power standing, securing permanent remote service and telehealth options for CRT, and the long-standing quest for a Separate Benefit Category for CRT.

Our annual CRT "on the Hill" visit is in the planning stages now, with a virtual meeting tentatively scheduled for a day during the week of Sept. 20. Right now, the target date is Sept. 21, but please be on the lookout for updates from NRRTS.

There is always a tremendous amount of work that goes on, every day, behind the scenes. If volunteer involvement is something you are interested in, please reach out to the NRRTS office.

One of the brightest moments in the past year is the adoption of NRRTS by our friends and colleagues in Canada. New Registrants have been pouring in. On April 14, we held our open meeting. One of the big agenda items was the welcoming of our new Registrants. The attendance was fantastic, including representatives from provincial government! This is really a tremendous moment in the evolution of NRRTS!

This issue's CRT time machine quote — "Congressman Nussle said the HME industry was "the flea on the last hair at the tip of the tail of the dog" when it came to being noticed on Capitol Hill!

Is this quote still valid? I do not know, but it is an interesting thing to think about.

The source of the quote is at the bottom of page.

Hoping you and the ones you love remain safe and healthy,



CONTACT THE AUTHOR

Gerry may be reached at GDCRTS@GMAIL.COM



Gerry Dickerson, ATP, CRTS®, is a 40-plus year veteran of the DME and CRT industries. Dickerson, president of NRRTS, works for National Seating & Mobility in Plainview, New York. Dickerson is the recipient of the NRRTS Simon Margolis fellow award and is also a RESNA fellow. He has presented nationally at the RESNA conference, ISS and National CRT conference and is a past board member of NCART.

THERE IS ALWAYS A TREMENDOUS AMOUNT OF WORK THAT GOES ON, EVERY DAY, BEHIND THE SCENES. IF VOLUNTEER INVOLVEMENT IS SOMETHING YOU ARE INTERESTED IN, PLEASE REACH OUT TO THE NRRTS OFFICE.

PaceSaver[®]

by **Leisure-Lift[®]**

SCOUT BOSS 6 & 675 Power Chairs

***Power Bases - Up to 675-lb. Capacity
in Group 2 or 3 Class HCPC Codes***

Many seat size options:

Seat bases offered in widths from 16" to 38"; depths from 14" to 26"

Flip-up, removable, adjustable arms

Numerous custom options offered:

Special calf pads - Custom-size Footrests - Power ELRs

Power Anti-tips Stomach & Amputee supports - Power or Manual



Boss 675
with optional Admiral
seat & reclining back



Boss 6NS (group 2)
with power pannus support &
separate custom footplates

***Also available with Tilt
600-lb. Capacity***

*PaceSaver Equalizer Bariatric Tilt Systems
are built using reliable Pacesaver Power
Chair bases and adding
high-quality tilt actuators.
System is fully adjustable, providing
a stable 50° weight shift.*



HD Equalizer Tilt on Boss 6 Base
with contour back, extra-deep seat, thigh supports,
separate footrests w/extra footplate, O2 holder, rehab headrest

***Now Offering Power
Articulating Center Column***



Power Articulating ELR's also now available.

Proudly
**Made in
America**
Using mostly US & some imported parts

1800 Merriam Lane, Kansas City, KS 66106

Phone: 800-255-0285

Fax: 800-862-8782

www.Pacesaver.com

Contact us: leisure-lift@leisure-lift.com

NRRTS 032021

JUST KEEP WHEELING

Written by: KARA BISHOP

Codi Mendenhall on the tandem E-trike at Colorado National Monument. In May 2020, she rode over the monument, which was about 23 miles.



When Codi Mendenhall was 5 years old, she steered her power chair up to her classmate who had a difficult time behaving the day before. She handed him a stuffed animal gesturing to him to hang on to this buddy next time he was feeling angry. "Yet, according to the school system, children like Codi who are considered nonverbal

aren't smart nor do they have personalities," Mendenhall's mother, Jennifer, said. One of Jennifer's friends encountered a teacher who was surprised that she wanted her third-grade daughter to learn how to read. Codi's vocal response was simply, "Duh!"

On June 30, 2006, after a traumatic labor and delivery, Jon and Jennifer Mendenhall gave birth to Codi in Palmer, Alaska. She was quickly transferred to Alaska Regional Hospital in Anchorage where she would spend the next 41 days in the neonatal intensive care unit. While there, she would be diagnosed with cerebral palsy, often experiencing intense seizures. "We had interventions from the beginning," Jennifer recalled. Codi's pediatrician was immediately joined by speech, occupational and physical therapists, as well as team members for her gastrostomy tube that was placed shortly after birth.

Cerebral palsy indicates brain injury causing the body to shut down functions it deems unimportant for survival such as walking and speaking. Seizures and cerebral palsy often go hand in hand, and Codi had some severe episodes in her first few days. Sleeping was hard to come by for her, so nurses would walk with Codi all night to comfort her as she seized. The beginning looked bleak, but Codi would soon show her fighting spirit and be discharged from the hospital.

3,000 MILES TO INDEPENDENCE

A baby with a feeding tube and pump was not easy in the rugged and sparse terrain of Alaska, so Codi and her family relocated more than 3,000 miles away to Grand Junction, Colorado, where Jennifer's parents live. Residing in the Western Slope has afforded Codi many opportunities for thrill seeking. With the desert in her backyard and a ski lodge 30 miles away, she never wants for anything to do. At 15, she has been horseback riding, zip lining, skiing, snowboarding and even biked 23 miles over the Colorado National Monument. She also plays baseball and learns computer coding through Code Ninjas, a franchise outreach program whose centers

CODI MENDENHALL DOESN'T LET CEREBRAL PALSY SLOW HER DOWN

train children in basic coding skills. "The Code Ninjas teacher turned off his computer with his toe the other day," Codi added. "It was really funny."

Codi was around a year old when she got her first walker, but it was her power wheelchair provided by Numotion that made the biggest impression. "We put her in that power chair and she just immediately started driving it around — I'll never forget how that felt to watch her be able to do something on her own," Jennifer said. "My mom was worried at first that going the wheelchair route meant surrendering to her disability, but I knew it was the very thing she needed. The chair would allow her to be her own person."

And she has been. Codi does not know limits, nor does she limit others. Both Codi and Jennifer are active in many coalitions involving disabilities — Codi even designed a 100-room hotel where every room is



Codi Mendenhall getting a hit in Challenger Baseball this week! Her team is the Vibes!



Codi Mendenhall loves to get big air on her bi ski and snowboard at Powderhorn Ski resort with Colorado DiscoverAbility.



Codi Mendenhall enjoys cooking and other "chores" at home for allowance.



Codi Mendenhall loves to ride horses! She takes hippotherapy from Grand Valley Equine Assisted Learning Center.



Pretty in purple! Codi Mendenhall's favorite color is purple. She loves to get dressed up and do a fancy photo shoot! (photo by JB Photography)

compliant with the Americans with Disabilities Act. In her Tedx Talk, Codi spoke of this idea among other things to spread awareness of her ability rather than her disability.

The Tedx Talk, "Codi's Life: From Coding to Communication Technology," shows how important technology and communication devices are to the independence of a person with disabilities. Codi uses her cellphone to make TikTok videos and Marco Polo her friends. "That's something that wasn't disability driven that's so cool for Codi, because she can write out what she wants to say," Jennifer said.

Codi also has a USB port on the arm of her wheelchair where she can charge her devices, and her communication device allows her to program in some thoughts ahead of time before she speaks to someone. However, that is not really necessary. She has developed her own sign language and is easy to understand. She has the teenager sigh and, "Mom!" exclamation down, too.

YOU MAY NOT CRY OVER SPILLED MILK, BUT A SPILLED BOLUS FEEDING IS ANOTHER STORY...

you need to add tilt to the chair to take weight off those pressure points and improve circulation," Jennifer said. Things like adding tilt may seem trivial, but it is important for Codi's health and should be covered. And, of course, if Jennifer only gives Codi two bolus feedings a day in combination with her feeding tube, then she is only going to receive four 60-milliliter syringes a month. "You learn to stockpile, and you don't have the luxury of spilling this stuff," she said. "One time I had a feeding bag that was torn up and if I hadn't seen it the food would have spilled everywhere, and there's no replacing it."

I WILL REMEMBER YOU WHEN I SMILE

A new thing that Codi is dealing with this year is loss. Several of her friends and even some family members died. "She will go into her room and make TikTok videos in honor of their memory and just grieves," Jennifer added. "It's been a rough year for loss, and you can see her coming into her own maturity through these experiences."

She is still infectiously joyful, though, and has always been that way. "She's just the happiest most positive person I've ever met in my life even though she's gone through so many difficulties, tests, blood draws, measurements, evaluations, therapists, people coming in and out of her life, and more."

Jennifer's favorite picture of Codi is one where she is sitting in the grass and smiling into the sun. Her wheelchair is in the background as a steady partner in her life. She experiences life to the fullest with that gorgeous smile always on her face.

CONTACT

The Medenhalls may be reached at JJCMENDENHALL@GMAIL.COM



Codi Mendenhall is a consumer advocate who resides in Grand Junction, Colorado.

COVID-19 presented some special challenges for Codi and her family as companies were short-staffed, which meant a nine-month wait for a \$700 battery for her bath chair. Lowering a 15-year-old into the bath and lifting her out is no easy feat for Codi's parents and can be demoralizing for a teenager. Fighting to make sure Codi gets to keep her independence is nothing new to Jennifer, though. "I actually just received a notice in the mail from insurance denying coverage for one of her seizure medications because they said she doesn't meet the requirements for it," Jennifer said, laughing, "What does that even mean?" Since seizures are still a part of Codi's life, Jennifer will go to bat for her daughter to ensure she gets covered — she's done it before. "We spent five years on the waiting list for the Children's Extensive Support Waiver once we moved to Colorado, so we're not new to this."

One of the reasons Jennifer got involved with NRRTS and Unite4CRT was because of the insurance coverage challenges. Insurance will still pay for a wheelchair, but often will not cover tilting the seat. "If you're sitting on your bottom in a chair all day,



DAVIS FINDS SONGWRITING THERAPEUTIC

Written by: JULIE BARNETT

Foster Davis knows how important it is to chill.

Davis is a singer-songwriter in his spare time with an album, "Love," currently on iTunes and YouTube.

"Songwriting is my goal, my therapy," he said.

On his current album, he played all instruments, wrote all the songs, and recorded in his home studio.

His son, Graham, is also a musician living in San Marcos, Texas. His wife, Pam, of 28 years is a yoga instructor. The couple moved from New Braunfels, Texas, to Marietta, Georgia, a suburb of Atlanta, a little over a year ago — about the time things drastically changed around the world.

"We moved when COVID happened," Davis said. "We're just now getting a feel for this community."

Davis, ATP, RRTS®, currently works for National Seating & Mobility Inc. in Atlanta as a pediatric ATP.

"Before that, I was a manufacturer for almost 30 years. I've had several different roles — I started off as a rep, then regional manager then national sales manager," he said. "I moved to California, traveled all over the country and globally to Western Europe, Australia and New Zealand with Freedom Designs Inc. I spent a brief year as a supplier, then Freedom asked me to come back and play different roles. So, I went back to Freedom/Invacare then was a rep for South/Central Texas, helped develop some products and do other things."

His interest in the field started early.

"When I was 12 or 13 years old, my mother worked at the Beaumont State Center for Human Development," he said. "One summer when she worked there, I was going every day, and I got to see disabled kids. This was around 1977, and

people didn't really see much of that. I had become comfortable with that population, and later on, it would really become a part of my career."

He took a musical detour in his 20s.

"Then after college I was in a rock band in Austin, Texas, for 10 years," he said. "Toward the end of that, I met my wife, and it was time to grow up. You can only be a rock star for so long."

His friend had started an independent rep group and reached out to him.

"He asked if I was interested,"

Davis recalled. "I didn't know what that even was. He said medical sales, and I thought, 'I am not a salesperson, I'm an artist or someone who cares.' Despite that initial hesitation, when I saw what it was, I took a shine to it."

When Freedom Designs Inc. was looking for a direct rep, he took a position in Houston where he met one of his greatest mentors.

"There, I was lucky to work with Linda Wilcox, PT, who had been there for 12 years as an ATP, before there was a title," he said. "We saw patients at Texas Children's Hospital, the Valley clinics, near Mexico, so almost every day I was in a clinic with her and a few other (physical and occupational therapists), so it was great access and learning opportunities.

"It's hard for people to understand until you see it, do it, live it," he continued. "We'd take 7-hour drives to get to the Valley to start our week. I'd pick her brain about everything. I loved it. That is what got me into it and to enjoy doing it. I realized I could help people. I always wanted to be in a profession where I was a giver, not a taker. Some professions harm the world, and there are some that help."

He noted that Missy Ball, PT, was also a huge clinical influence on his global understanding of disease entities and seating and propulsion.

"Also, Ginny and Michael Maloco showed me how important it was to support NRRTS and any mechanism that elevated the credibility of our profession. Ginny, who owned FDI, was one of the first FONS (Friends of NRRTS)," he said.



Foster Davis in the square



Foster and Pam Davis

"Finally, Simon Margolis always showed us all how to 'keep the eyes on the prize' of always elevating our ethics and skill level. Anytime we speak of mentors or those who impacted the rehab community, we are all standing on the shoulders of giants — those who blazed the trail before us."

Davis continues to learn from mentors in his new position.

"Today I am enjoying working with and learning from the giants of the Atlanta rehab community from the Texas Children's Hospital therapist to the community therapist, and from the ATPs from my employer and other companies," he said. "We can always learn and always support the greater rehab community for the betterment of the clients."

He enjoys having a positive impact on patients' lives, though sometimes that impact can be difficult to measure.

"Metrics are sometimes hard in our industry. It depends on their capabilities at the start and where they are with new, better equipment," he said. "Sometimes it's hard to measure, but if I make their lives better and help achieve what we're trying to do, or help a family have a better life with a child, that's what I like most — interactions, positive outcomes and solutions."

Some cases naturally stand out in a 30-plus year career.

"I worked with two sets of conjoined twins at Texas Children's Hospital years ago. Being able

CONTINUED ON PAGE 12

EXCELLENCE TAKING SHAPE.

SIGNATURE-FIT CUSTOM MOLDED SEATING



**ALL ORDERS SHIP
WITHIN 7-10
BUSINESS DAYS.**



**INNOVATIVE SENSE™
DIGITIZING
TECHNOLOGY
IMPROVES
ACCURACY
AND SPEED OF
SHAPE CAPTURE.**



THE POWER OF PRECISION

SIGNATURE-FIT™

To learn more or to schedule a demonstration, simply call **866-PRM-REHAB** or visit **PRMrehab.com** today.



**DAVIS FINDS...***(CONTINUED FROM PAGE 11)*

to custom make equipment for someone like that was a real beauty," he said. "Think about how far a leap that is, to understand wheelchair to custom seating, it's pretty unique. Also, people in the Valley were so limited in access to equipment until the right people got involved with them. It is amazing what we sometimes went through with children, to help an underserved population, use a broader stroke.

"Being in a young industry, a lot were OTs (occupational therapists) building their own stuff," he continued. "I was fortunate I got to build and see it come to market. It is unique when you can see something in the field that's needed. That's how product development and progression move forward."

Davis believes industry challenges can also serve as opportunities.

"Funding reimbursement is always a challenge. On some level, it can be an opportunity too," he said. "As an industry, we must educate the government, legislators, people who write policy and coding. It is like a seesaw, technology is on one side going up, with reimbursement challenges falling down on the other side. I understand there is only so much that can be done when looking at funding.

"Overall, the goals of ATPs are a pretty noble cause considering the people we're trying to serve," he continued. "You know it's needed, therapists know it's needed, then it goes to a third party that wasn't at the evaluation. It can be a challenge, but the more we go through NCART, RESNA and NRRTS, we can educate the powers that be. The global world thinks it's just wheelchairs, durable medical equipment, they don't know the difference; it's not their world."

CONTACT

Foster may be reached at
FOSTER.DAVIS@NSM-SEATING.COM



Foster Davis, ATP, RRTS®, is a NRRTS Registrant who works for National Seating & Mobility Inc. in Georgia.

Ultra-breathable 3D Mesh Liner Option for the Ride® Custom Back increases air flow and retains even less moisture than the original. Easier to wash, quicker to dry, plus in-field modifications are a breeze.

Also available: a soft liner insert option.

EASY...

**Faster, Simpler Custom Quotes/Ordering:
 Bundled Pricing options now available!**

Ride Designs®

Toll-Free 866.781.1633

www.ridedesigns.com

©2021, Ride Designs.



R82 Meerkat

Learning through movement

- **Dynamic standing** – A rocker can be easily mounted for supported movement and the development of dynamic postural control.
- **Multiple positions** – The stander can be positioned in anterior or posterior configuration.
- **Adjustable accessories** – The accessories can be clicked quickly and easily on and off the frame to meet a child's changing needs or the variant requirements of multiple children.
- **Three sizes** – This range accommodates children 27" to 70" inches tall.

To learn more about the R82 Meerkat contact us or visit our website:
+1 844-US-MOBILITY (844-876-6245) | www.etac.us.com | sales.us@etac.com



STOP JULY CUTS TO CRT MANUAL WHEELCHAIR ACCESSORIES

Written by: **DON CLAYBACK**, EXECUTIVE DIRECTOR OF NCART

In the second quarter of this year, our top advocacy priority is to stop Medicare cuts to Complex Rehab Technology (CRT) Manual Wheelchair Accessories that may go into effect July 1. These cuts would result from the expiration of a congressional legislated suspension from December 2019 that prohibited the Centers for Medicare and Medicaid Services (CMS) from applying Medicare Competitive Bid Program pricing to these CRT items through June 30, 2021.

Throughout 2020 and into 2021, NCART and other CRT stakeholder organizations have been working on several fronts to secure the CMS policy change needed to stop these cuts. Unfortunately, CMS' pandemic activities last year and the 2021 delays in the confirmations of the new Health and Human Services (HHS) Secretary Xavier Becerra and new CMS Administrator Chiquita Brooks-LaSure (who still has not been confirmed as of this writing) have undermined the decision process.

A position paper detailing the urgent need for a CMS policy decision has been developed and being used in our advocacy. It is available in the federal issues section at www.ncart.us. We are actively working with our congressional champions and our disability advocacy group allies to elevate the discussions with HHS and CMS to secure action to prevent these cuts as soon as possible.

IMPORTANCE OF PUBLIC HEALTH EMERGENCY EXTENSION

The basis for many of the COVID-19 policies that were put in place in 2020 was the declaration of a federal Public Health Emergency (PHE). The COVID-19 PHE was initially declared in early 2020 and has been extended to July 20, 2021. Continuation of the PHE determines how long many of the temporary policies, such as Medicare telehealth flexibilities, will remain in place. This also has state and commercial health plan policy implications.

Extensions are generally issued in 90-day increments and the expectation is that the COVID-19 PHE will stay in place through at least the end of 2021. HHS has indicated it will give a 60-day notice prior to the end of the PHE to allow agencies, organizations and others to take the necessary steps to transition back to historical policies and procedures.

DEVELOPMENTS IN PERMANENT TELEHEALTH AVAILABILITY

One of our 2021 advocacy priorities is to ensure that physical therapists (PTs) and occupational therapists (OTs) retain the option to provide

telehealth services to clients who require CRT after the PHE ends. While there are significant telehealth policy conversations taking place in Congress, our primary objective is to ensure the designation of PTs and OTs as permanent telehealth practitioners is ultimately included in final federal legislation.

The "Expanded Telehealth Access Act" (HR 2168) has been introduced in the U.S. House by Reps. Mikie Sherill, D-N.J., and David McKinley, R-W.Va. This bill contains provisions to expand access to telehealth services after the PHE. Most importantly, the legislation does specifically add PTs and OTs as permanently authorized telehealth practitioners. This language addresses our priority.

A much broader telehealth bill has also been introduced in Congress. The "CONNECT for Health Act of 2021" (S 2741) is being led by Sens. Brian Schatz, D-Hawaii, and Roger Wicker, R-Miss. This is very comprehensive and is based on similar legislation from last year. It has broad bipartisan support and has been endorsed by a significant number of national associations.

Unfortunately, S 2741 does not specifically require the inclusion of PTs and OTs as permanent practitioners, which is an issue for us. Instead it allows CMS to make the decision on what telehealth providers will be made permanent. We are communicating our concerns with the bill sponsors and recognize changes to the language are possible as the bill moves forward.

The CRT Remote Services Consortium continues to meet and monitor activities in this area regarding the impact on the CRT provision process. We also are coordinating our analysis and efforts with the American Physical Therapy Association (APTA) and the American Occupational Therapy Association (AOTA).

Making sure PTs and OTs are included in whatever final telehealth legislation that Congress passes will require national advocacy. We ask all CRT stakeholders to take five minutes and send an email to your Members of

Congress asking for their support of the language in HR 2168. You can use the links at www.protectmymobility.org to send your email and you will also find more information there.

NEXT STEP FOR COVERAGE OF POWER SEAT ELEVATION AND STANDING

We are eagerly awaiting the CMS announcement requesting public comments on the reopening of the National Coverage Determination (NCD) to potentially extend Medicare coverage to include power seat elevation and power standing systems used with power wheelchairs. This comment period is the next step in securing Medicare coverage of these important technologies that will provide significant benefits to people with disabilities.

We continue to work with the ITEM Coalition and will be supplying resources to allow organizations and individuals to submit supporting comments to CMS once the comment period begins.

CALIFORNIA STATE CRT LEGISLATION

We have been able to have state legislation introduced in California to improve regulations and Medi-Cal payments for CRT. Sen. Bill Dodd, D-Napa, has introduced S 717, which is making its way through the Senate committees process. The bill updates California regulations regarding the CRT provision process and provides relief for CRT items from the current 10% Medi-Cal payment reduction.

The legislation is supported by a variety of organizations including CAMPS, Disability Rights California, Association of Regional Center Agencies, Children's Specialty Care Coalition, National Multiple Sclerosis Society, California Children's Hospital Association and the Spinal Network.

OSCAR-NOMINATED DOCUMENTARY "CRIP CAMP"

We were very happy to see the disability rights and inclusivity movements receive some great attention at the April Academy Awards ceremony. It came in the form of the Netflix-produced film "Crip Camp: A Disability Revolution," which had been nominated for an Oscar for Best Documentary Feature.

The documentary centers around the story of Camp Jened, a New York State summer retreat in the Catskill Mountains where many young people with disabilities "first experienced the joys of community" in the 1960s and '70s. It highlights the early work in the disability rights movement and tells how many of its leaders came together through their camp experiences to begin their society-changing advocacy work.

While it did not take home an Oscar that evening, it has been widely hailed as a big win for the disability community. Viewing is highly recommended and will help generate a better awareness of

the disability rights movement, past and present. It can be seen via a Netflix subscription or for free at the Netflix YouTube channel.

UPDATED NCART WEBSITES

The NCART and Access2CRT websites have undergone updates to make them easier to navigate and utilize. The NCART site (www.ncart.us) remains a CRT industry resource center with the latest news, tools for providers and manufacturers, and information on important policy and legislative action impacting CRT.

The Access2CRT site (www.access2crt.org) serves as a non-denominational advocacy "hub" that offers current issues, legislator look-up, tools to share the CRT story, the Protect My Mobility advocacy action center, and other helpful links for those who want to get involved in advocacy for CRT access.

BECOMING AN NCART MEMBER

NCART is the national CRT advocacy association dedicated to protecting CRT access. To continue our work, we are seeking additional members to support our important federal and state activities. Help us, help you.

Our mission is laser focused on CRT issues. If you are a CRT supplier or manufacturer, that translates to protecting and establishing policies and funding to enable people with disabilities to access your products and services. For information on becoming an NCART member, visit the membership area at www.ncart.us.

CONTACT THE AUTHOR

Don may be reached at DCLAYBACK@NCART.US

Don Clayback is executive director of the National Coalition for Assistive and Rehab Technology (NCART). NCART is a national organization of Complex Rehab Technology (CRT) suppliers and manufacturers focused on ensuring individuals with disabilities have appropriate access to these products and services. In this role, he has responsibility for monitoring, analyzing, reporting and influencing legislative and regulatory activities. Clayback has more than 30 years of experience in the CRT and Home Medical Equipment industries as a supplier, consultant and advocate. He is actively involved in industry issues and a frequent speaker at state and national conferences.



DOLLARS AND SENSE

Written by: JENNITH BERNSTEIN, PT, DPT, ATP/SMS AND CATHERINE SWEENEY, PT, ATP/SMS

When completing a seating and mobility evaluation, we must determine the service provision model or construct. The International Classification of Functioning Disability and Health (ICF) guides us to consider how a mobility device will impact body functions and structures, activities, participation, environment, and personal factors (of note: there is not a section about the financial cost of the equipment). As we better understand the ICF model, and move away from a diagnosis driven medical model, we see the direct role Complex Rehab Technology (CRT) plays in elevating quality of life, promoting health, reducing disablement and providing vital technology to reduce risk of medical complications (Andrich, R., 2013). As both clinicians and equipment providers, we are challenged to maintain focus on what is medically and functionally appropriate for the person, while also considering funding requirements and options.

Quality of life looks different for each person. Experiences such as going on walks with the family (see Figure 1), coaching basketball, reaching for an item in a top cabinet, or performing surgery are all valuable scenarios created by CRT. Provision of CRT equipment can restore or provide access to meaningful occupations, socialization and participation in life roles (Woodman et al., 2014). Providing a power wheelchair with power seat elevation can increase function and safety, reduce caregiver assistance, and positively impact confidence and social engagement (Schiappa, V., et al., 2019). These are significant gains achieved through CRT.

PROMOTING HEALTH THROUGH CRT

CRT promotes health by mitigating risk and potentially saving lives when used proactively. Viewing CRT as a vital component of medical management for people with complex needs eliminates the misconception that this is an item of convenience, a luxury, a feature, or just something “nice to have.” For example, combining an optimal manual wheelchair configuration with a power assist device for clients who are not candidates for a power wheelchair or have environmental limitations can meet the best-practice goal of reducing the detrimental impact of shoulder overuse injuries requiring surgical repair, thus saving health care resources (Sawartsky, 2015) (see Figure 2).

CRT can reduce disablement, or “a situation a person may encounter due to the gap between personal limitations and contextual factors” (Lenker, J.A. & Paquet, 2004). Reducing disablement creates opportunity for a person to flow seamlessly into their desired life without limitations from the world around them or their diagnoses. Financial implications of reduced disablement



FIGURE 1 Clive on a nightly family walk.



FIGURE 2

Julie as an active older adult using power assist technology for prevention of upper extremity overuse injuries.

exceed just the individual's personal impact. Health economics is a relatively new way of thinking about equipment in the United States, where many funding sources only consider the one-time purchase price of equipment. This approach can be short-sighted. When taking a “long-game” viewpoint of selecting the most durable, customized and modifiable equipment, we start to realize how CRT can have a positive influence on health economics.

HEALTH ECONOMICS

Health economics is a balance between direct and indirect costs over time. Consider the COVID-19

vaccine. The cost of investing in rapidly available vaccinations in the United States outweighs the long-term financial impact on a country where a virus continues to spread for years. For CRT, consider the direct cost of equipment compared to the indirect financial gain of an individual with a disability in the workforce, requiring less caregiver assistance and placing less demand on the health care system due to fewer hospitalizations. It then seems silly to argue over a \$50 pair of tires when those tires allow someone to negotiate a curb cut independently and reduce upper extremity strain (Sawatsky, B., 2015).

Funding of CRT is often driven by eliminating less costly alternatives. To improve functional outcomes, it is imperative that all stakeholders add health economics and quality of life to the “least costly alternative” equation, not just Manufacturer’s Suggested Retail Price. Prioritizing a wider view of what a “good outcome” is allows the clinical prescription process to include consideration for preventative care and long-term reduction of secondary complications.

Perhaps one of the best examples of the impact of health economics is in our pediatric population. The impact of children using power mobility at the same time as their peers are mobilizing has been proven to have a positive influence on all aspects of physical, emotional, social and cognitive development

(Rosen, et al., 2018; Feldner, Logan, & Galloway, 2016). Many families report that the financial costs of a power mobility device, accessible transportation and home modifications are nothing compared to long-term benefits such as a child learning to vocalize, attending classes with their peers, having fun with their siblings (see Figure 3), setting career goals, and even getting in a bit of trouble (Morgan & Calara, 2018).

Finally, let’s take an example of a pressure injury. According to Regan and colleagues, the U.S. spends about \$1.3 billion annually for pressure injury related medical costs for persons with spinal cord injuries. Prevention would cost about one-tenth of that (Regan, et al., 2009). This cost does not include indirect costs of increased

caregiver hours, secondary lower immunity from prolonged antibiotics, or loss of function and time at work from prolonged bedrest. Both the direct and indirect costs together may exceed \$130,000 over one year for a Stage IV injury, whereas a \$500 skin protection cushion, \$150 padded commode seat and a \$1,500 pressure reducing mattress significantly reduce risk of injury. Even adding a power standing wheelchair, equipment costs remain far below the total cost of treating a pressure injury. If tilt

CONTINUED ON PAGE 18



FIGURE 3 Social media post about sibling interaction.

WE ARE

UNITED

Share the Journey.

It's FREE to join, and member benefits include New Mobility!

JOIN US
 United Spinal Association knows that disability is a shared experience that affects you, your family, friends and communities. Fortunately, we are stronger together, and United Spinal brings decades of expertise to help: information, peer mentoring, advocacy and much more. Become a member today and **Share the Journey.**

800.404.2898 • unitedspinal.org

United Spinal Association

THE IMPACT OF CHILDREN USING POWER MOBILITY AT THE SAME TIME AS THEIR PEERS ARE MOBILIZING HAS BEEN PROVEN TO HAVE A POSITIVE INFLUENCE ON ALL ASPECTS OF PHYSICAL, EMOTIONAL, SOCIAL AND COGNITIVE DEVELOPMENT



FIGURE 4

Ignacio using his power standing wheelchair for pressure management.

DOLLARS AND SENSE

(CONTINUED FROM PAGE 17)

and recline are inadequate in preventing a pressure injury or facilitating healing of an existing wound, it may be appropriate to integrate power standing into the mobility base to vary the way that pressure management is performed. Standing wheelchair technology more effectively reduces pressure from both the seat and back surfaces (Sprigle, Maurer, Sonenblum, 2010). When Ignacio had a power wheelchair with power tilt and recline, his coccygeal pressure injury was not healing. After surgical closure and using a power standing wheelchair, he has not had any further skin impairment (see Figure 4).

Clinicians and providers can continue to fight for what makes the most sense by keeping a wider view of health care economics, with reduced focus on only the dollar amount of the equipment, to broaden the impact of CRT.

CONTACT THE AUTHORS

Jennith may be reached at
JENNITH.BERNSTEIN@PERMOBIL.COM

Catherine may be reached at
CATHERINE.SWEENEY@PERMOBIL.COM

Jennith is a Physical Therapist based in Atlanta, Georgia. She worked for 10 years at The Shepherd Center, focusing her time in the Seating & Wheeled Mobility clinic for 7 years. Bernstein completed her Master's in Physical Therapy at North Georgia College & State University and transitional DPT at University of Texas Medical Branch. Bernstein has served as a volunteer teacher at the Universidad Mariano Galvez in Guatemala, instructing spinal cord injury curriculum as well as seating and mobility.



Bernstein has presented at national and international conferences such as RESNA, ISS, LASS, Expo Ortopedica, and the APTA NEXT conference. Bernstein joined Permobil as the Clinical Education Manager for the Central Region in 2016.

Catherine Sweeney has been a physical therapist for more than 30 years and has worked in multiple clinical settings, from level 1 trauma, acute care, acute rehab, and finally outpatient therapy. She co-founded the Providence wheelchair seating clinic in 2004, specializing in wheelchair seating and positioning interventions for clients with complex rehabilitation technology needs. She served as the primary wheelchair seating specialist within the Providence region in Oregon. Catherine joined Permobil in September of 2019 to pursue her additional passion of improving client access to wheelchair seating interventions through clinical education.



REFERENCES:

- ANDRICH, R. (2013). COST ANALYSIS OF ASSISTIVE TECHNOLOGY. RETRIEVED MARCH, 5.
- SCHIAPPA, PIRIANO, BERNHARDT, SHEA, MAURER, ROSEN, LANGE, SCHMELER, DICIANNO.
- RESNA'S POSITION ON THE APPLICATION OF SEAT ELEVATION DEVICES FOR WHEELCHAIR USERS (UPDATE). ONLINE.
- SPRIGLE, S., MAURER, C., & SORENBLUM, S. E. (2010). LOAD REDISTRIBUTION IN VARIABLE POSITION WHEELCHAIRS IN PEOPLE WITH SPINAL CORD INJURY. THE JOURNAL OF SPINAL CORD MEDICINE, 33(1), 58-64.
- FELDER, H. A., LOGAN, S. W., & GALLOWAY, J. C. (2016). WHY THE TIME IS RIGHT FOR A RADICAL PARADIGM SHIFT IN EARLY POWERED MOBILITY: THE ROLE OF POWERED MOBILITY TECHNOLOGY DEVICES, POLICY, AND STAKEHOLDERS.
- ROSEN, L., PLUMMER, T., SABET, A., LANGE, M. L., & LIVINGSTONE, R. (2018). RESNA POSITION ON THE APPLICATION OF POWER MOBILITY DEVICES FOR PEDIATRIC USERS. ASSISTIVE TECHNOLOGY.
- MORGAN, A. & CALARA, S. EARLY POWERED MOBILITY FROM A HEALTH ECONOMIC PERSPECTIVE. ISS PROCEEDINGS, 2018.
- LENKER, J. A., & PAQUET, V. L. (2004). A NEW CONCEPTUAL MODEL FOR ASSISTIVE TECHNOLOGY OUTCOMES RESEARCH AND PRACTICE. ASSISTIVE TECHNOLOGY, 16(1), 1-10.
- SAWATZKY, B., DIGIOVINE, C., BERNER, T., ROESLER, T., & KATTE, L. (2015). THE NEED FOR UPDATED CLINICAL PRACTICE GUIDELINES FOR PRESERVATION OF UPPER EXTREMITIES IN MANUAL WHEELCHAIR USERS: A POSITION PAPER. AMERICAN JOURNAL OF PHYSICAL MEDICINE & REHABILITATION, 94(4), 313-324.
- REGAN, M. A., R. W. TEASELL, ET AL. (2009). "A SYSTEMATIC REVIEW OF THERAPEUTIC INTERVENTIONS FOR PRESSURE ULCERS AFTER SPINAL CORD INJURY." ARCHIVES OF PHYSICAL MEDICINE AND REHABILITATION 90(2): 213-231.



Proud Sponsor and Official Battery of the United States Power Soccer Association and TEAM USA National Power Soccer Team

Team USA is Definitely Gellin' Are You?



For daily life or in the heat of Power Soccer, reliable power is paramount. Not all battery technologies perform equally – Only MK Genuine Gel technology can deliver the long life that users, therapists, caregivers and rehab suppliers have come to depend on. Beware of imitations...

Demand the Dependable Power of MK Genuine Gel



800-372-9253 • MKBATTERY.COM

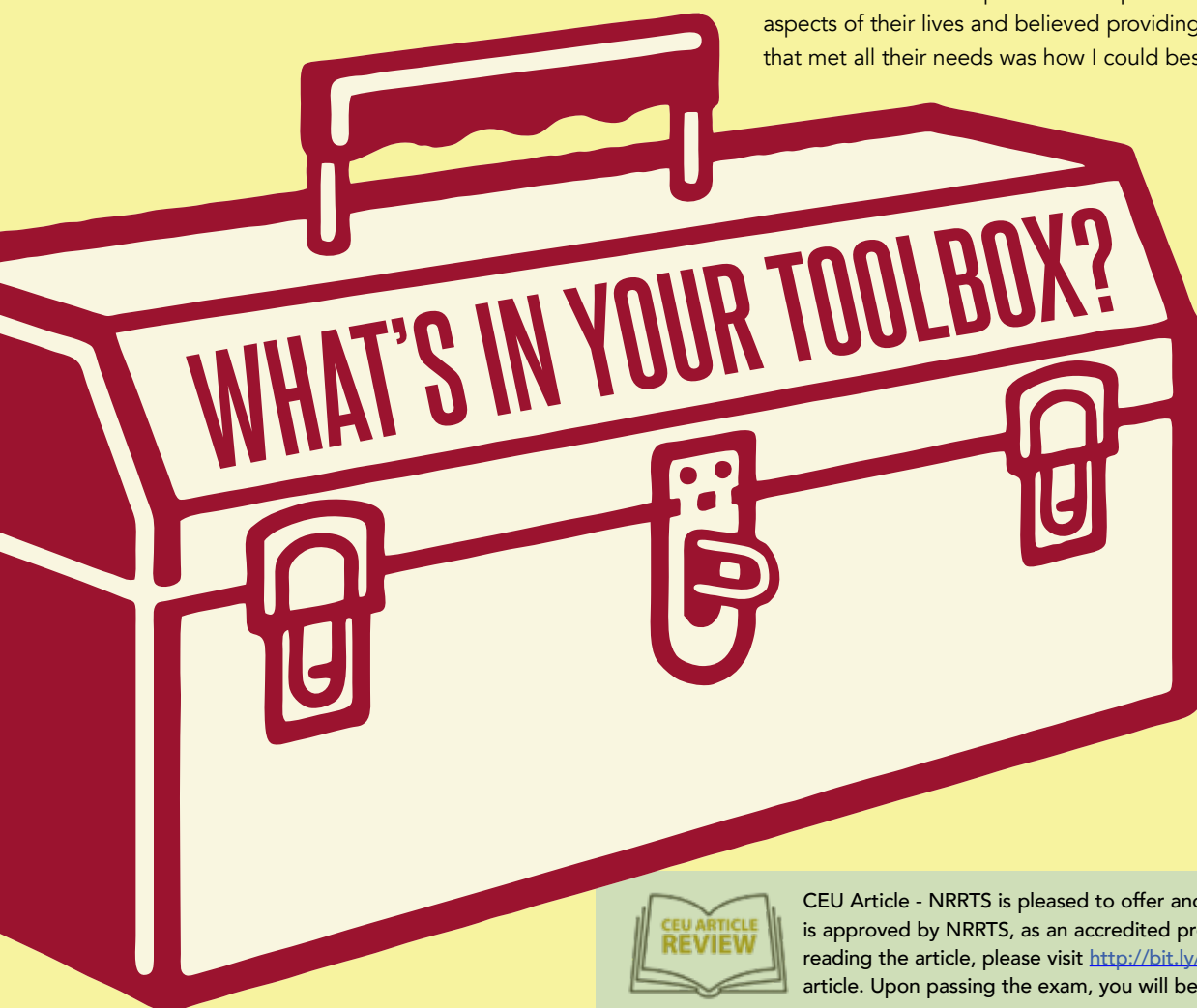
CLINICAL REASONING & COMPETENCY IN A FAST-PACED WORLD:

Can Wheelchair Prescription be Effective and Efficient?

Written by **CHERYL HON, B.A., M. OT**

INTRODUCTION: MY LENS

When I began my practice as an occupational therapist, I knew my dream job would involve the prescription of wheelchair seating and mobility equipment. I came about this decision gradually, but probably early on relative to other colleagues of mine. Growing up, my dad was an electrical engineer and Yeh Yeh (or grandpa) was also mechanically minded and created all sorts of household devices while working in his garage workshop. When I was young, it was never surprising for Yeh Yeh to come up from the shop with a new device like a bread loaf cutting machine or a pulley system to use for upper extremity exercises. My dad taught me about tools early on, and I had my own set of plastic tools in my toy box. I also loved working with people like my mom did. She worked several jobs over the years, including being a payroll clerk, a care-aide and running a day care. When I attended the occupational therapy (OT) program at the University of British Columbia, my classmates were all aware that I was going to work with wheelchairs. Some found it odd that I already knew this was an area of interest and frankly, at times, so did I. I knew that as an occupational therapist I wanted to help people in all aspects of their lives and believed providing them with a wheelchair that met all their needs was how I could best do this.



CEU Article - NRRTS is pleased to offer another CEU article. This article is approved by NRRTS, as an accredited provider, for .2 CEUs. After reading the article, please visit <http://bit.ly/CEUARTICLE> to order the article. Upon passing the exam, you will be sent a CEU certificate.

My true “ah ha” moment arose when I was still in high school, volunteering at a long-term care facility in Burnaby, British Columbia. The OT that I was working with told me one day during our usual rounds, carrying out a walking program for the resident, that “wheelchairs are so important to our residents. It isn’t just a piece of equipment; it helps them in every aspect of their daily living.” At the time, I found this to be a bit of a surprise as I had no experience with wheelchairs and no one in my life used a wheelchair. Her words stuck with me though, and as I began looking for a career that would suit my interests and strengths, I found more and more that the world of wheelchair seating seemed to fit what I was looking for.

About two years into my practice working in community-based paediatrics, I decided to make a change. I began a mentorship at Access Community Therapists where I met therapists who had been specializing for years in complex seating. It was overwhelming, humbling, but also inspiring. Not only did I have an opportunity to observe how experienced clinicians worked with some of the most posturally complex cases in the province, but they also generously shared with me how and why they made decisions during clinical work. In this job, I was also grateful for the opportunity to learn from skilled and dedicated technicians and sales representatives in the industry. I began with a more general rehab caseload and slowly worked into more complex seating cases and consultation type roles. Although I was able to learn so much, very quickly, it really was not until I started working on my own seating caseload that I began to realize the limitations in my knowledge as a new clinician.

I was keen as a new therapist and it was relatively easy for me to learn more about the types of equipment readily available in the industry. Suppliers would often host free education sessions to promote the newest equipment, wheelchairs and seating components. A cold call to a manufacturer or supplier for education on a product would rarely go unanswered as most were eager to proudly share the success stories and the applications of their products. I also pursued more clinically based education and attended conferences and courses, which allowed me to hear case studies and learn some of the newest research being conducted and published.

THE CASE STUDY: MATTHEW

About a year into practicing in wheelchair seating, despite the wealth of education I had received, I began to realize how difficult working in this field was. There was one referral I had taken early on that I will always remember. I began working with a client at a group home in Burnaby who I will call “Matthew.” This client needed a new custom seating system. I would be working with a very experienced local custom seating technician who had also fabricated the system that Matthew was currently using. It had been prescribed by one of my OT mentors, Joanne Yip, who was knowledgeable and well-respected in the field. As a new therapist with a wealth of knowledge from my mentorship, I felt nervous but relatively confident that I could

manage this case. I proceeded with my assessment: first completing my initial interview, then moving to my mat assessment, which included a supine and sitting evaluation and then a specification (spec) appointment with the custom seating technician. I carefully inputted the range of motion data into my templated report document. I listened to all the concerns of the caregivers and family members and made sure to take notes and document all my observations. I documented and described how Matthew was transferred and how he was positioned in his current system, as well as how quickly he seemed to collapse over to his right side. He presented with a C-curve scoliosis, which was the most obvious and significant postural issue, and he was sliding and losing positioning almost immediately. His caregivers reported that he almost never appeared comfortable and required constant repositioning. After completing what I thought at the time was a very thorough assessment, I was ready to do my spec. I made an appointment with the custom seating technician as well as a sales representative from a local supplier to do a spec and get a quote for Matthew’s seating system and wheelchair. I asked the technician for a similar system to what he currently had, which was a custom foam in box (molded seating) system and asked the sales representative for a wheelchair that was nearly identical to his last one. Not fully understanding why I was going with the same system, I thought that likely nothing else would work well for him considering the severity of his postural presentation. I also knew that his current equipment was old and in disrepair, and he was eligible for a new system based on our local government funding parameters.

Once I got funding approved for the seating system, I felt like it was a small but significant victory and booked

NOT ONLY DID I HAVE AN OPPORTUNITY TO OBSERVE HOW EXPERIENCED CLINICIANS WORKED WITH SOME OF THE MOST POSTURALLY COMPLEX CASES IN THE PROVINCE, BUT THEY ALSO GENEROUSLY SHARED WITH ME HOW AND WHY THEY MADE DECISIONS DURING CLINICAL WORK.

CONTINUED ON PAGE 22



CLINICAL REASONING... (CONTINUED FROM PAGE 21)

a home visit with the client, the seating technician and sales rep to fabricate seating and set up the wheelchair for Matthew. During the fabrication process, my goal was to first improve his posture to prevent him from sliding. I did not realize at the time that those two goals did not necessarily facilitate one another. From my mentorship, I knew I needed to start from the pelvis. I wanted to achieve a more neutral pelvis and then provide lateral support to correct his C-curve scoliosis. My intentions to correct his spine came from a place of care, but also, as a new clinician, I wanted my client to appear “better” in his new system than he did in his old set-up. From my sitting assessment, I believed that I could achieve more even shoulder heights if I used a broad lateral on his right side. We took a mold of his body shape with large blue molding bags, which were then casted. The casts were removed, and foam was poured onto the casts to create the insert. The insert was then fitted and mounted onto plywood, lateral hardware was added to make the system rigid, and the whole system was subsequently upholstered. It was a nice looking system. The upholstery material was clean and fresh, and we made sure to trim all the excess material away so that we saw Matthew before any of the components of his seating system. I was overall proud of the system and Matthew appeared less curved. I observed that he was able to sit up in the system for 15-20 minutes without losing his position and assumed he would be able to maintain this.

About a month after we completed the system, I got a call from the group home manager. Matthew had developed persistent redness under his right axilla and was continuing to slide and appear uncomfortable as he was always wriggling, and he exhibited strained facial expressions. I was both a bit surprised and concerned to get this call, as I had been confident that the system looked good when we had completed the fittings. When I went back with the seating technician, we tried adjusting the laterals and softening the angles of the system to reduce the pressure under his axilla, but nothing worked. I decided that it was time to re-assess. I asked the seating technician to bring in a portable plinth (mat table) so that we could re-measure everything. What I found was that Matthew could in fact sit with more level shoulders, but when I was holding him under his axilla where the lateral hardware was causing pressure, his pelvis would not remain level. It required too much force to hold his pelvis in that position. Matthew required a built-in obliquity at least 2 inches higher on the right compared to his left side and this was not built into his new seating system.

Since we had used all the funding to fabricate the last seating system, I had to apply for additional funds. I had to inform the funder that the seating system that I had prescribed was causing pressure that would eventually become a wound if it was not fixed. Thankfully, the modifications were funded. I was grateful but also felt guilty knowing that if I had made a different decision, my client would not have developed skin issues and top up funding would not have been required. We fabricated another seat, incorporating the required pelvic obliquity and were able to use the backrest insert with re-mounting and some adjustments to the contours. This time I made sure to follow up a week later, and again in a month, to be sure that the seating system was working well for him, increasing his comfort, and reducing the need for repositioning without redness.

I was upset after I closed this file. Although I had managed to determine where I had gone wrong, we were able to fund another system, and the new system was now

working well, I was embarrassed that I had made these clinical errors and a bit confused as to how this had happened. What if the system had actually caused a wound? Or worse, a wound that eventually led to an infection or even death? What if my client was unable to take care of their family, children or go to work or school because of my clinical error? Upon reflecting on what I thought I knew and what had happened, I realized that there was a significant gap in my clinical reasoning ability. I knew how to do an interview. I knew how to complete a thorough and sound mat assessment including the supine and sitting portions of the assessment and could write a detailed and clear letter of justification. I had a good grasp of the breadth of possibilities when it came to custom seating fabrication and commercially available seating and mobility equipment. So, what was I missing?

TECHNOLOGICAL ADVANCES IN COMMERCIAL WHEELCHAIR EQUIPMENT: THE BENEFITS AND PITFALLS FOR CLINICAL REASONING

The innovation of commercially available seating equipment and components has helped to greatly improve the lives of many clients living with disabilities. It has also helped to change and shape the process of wheelchair seating and mobility prescription. An impressive array of wheelchair backrests and cushions enables clinicians to trial a multitude of options before prescribing. People who use wheelchairs can (and do) research seating and wheeled mobility product options online and will ask to trial and evaluate specific products. This has improved the efficiency of wheelchair prescription in many ways as clinicians no longer have to make products from scratch and clients can request specific items rather than waiting for something

to be fabricated. With these benefits, there are however, drawbacks. Because of the many options available “off the shelf,” it was easy for me, as a new clinician to trial an array of backrests to find one that fit without really understanding why it did. I could easily learn about the range of cushions available and keep them in either a working Word document that I could reference or simply pull it from my memory. What I found was that practicing in this way allowed me to save time and skip over what I did not fully understand. Was this more efficient and effective? Sometimes it was. In other cases, it was not. When I was working with Matthew, I jumped immediately to what he already had, instead of understanding what he needed. When the equipment did not work, I had to re-do my entire assessment, apply for more funds and replace one product with another to correct my mistake. In Matthew’s case, it took me nearly double the time, and he was the one who had to live with my error until I could fix the issue. It was a costly way of practicing for Mathew, the funder and me — the prescribing OT.

PRIORITIES OF PRACTICE: THE VALUE OF CLINICAL REASONING

The pace of life has increased significantly in recent years. This has also been reflected in the pace of occupational therapy practice and many other health care disciplines. Technological innovations such as computers, email and cell phones have made writing and sending off letters of justification and equipment requests more efficient. GPS systems have made finding client homes quicker. When I first started shadowing OT’s during my fieldwork placements, most therapists used maps to Figure out how to get to a new client’s home. Once I began practice in the community, I used an external GPS to find my way around and could simply type in an address and be on my way. Technology has changed the way we manage our caseloads, our practice, communication and daily tasks. According to a study by Noelle Chesley (2010), “the frequency of computer, email and cell phone use positively influences greater workplace effectiveness, an increased workload, and an accelerated pace of life.” So how were these changes impacting my practice? When I began taking on my own clients, it did not take long to fill my filing cabinet with files. It seemed as if there were more clients needing seating consultation than there were hours in a day. As a new therapist, I did not want to seem like I could not handle the workload, and so I looked for ways to increase my overall efficiency. Being relatively “tech-savvy,” I could direct-enter assessment findings on my laptop and speedily turn these into reports to send to the referring source. I could attend several visits across town by compiling my assessments and charting as I went. Best of all, this meant all my time was logged as client time and was billable. However, this did not leave much time for clinical reflection. The more significant problem, I realized, was that I did not have separate time apart from seeing clients and was not being deliberately told to use my time to clinically reason through my cases. I now realize that this was up to me to figure out on my own.

The process of clinical reasoning is a difficult skill to acquire, teach and measure. Health disciplines such as medicine, physiotherapy and nursing have all contributed to the study of how to facilitate, develop and measure the concept of clinical reasoning (Elvin, 2017; Gonzalez, 2018; Huhn et al., 2018; Lajoie, Zheng & Li, 2018; Brown Tyo & McCurry, 2019; Pelaccia et al. 2019). In the book “Clinical Reasoning in Occupational Therapy,” Higgs and Jones (2010) define clinical reasoning as a “context dependant way of thinking and decision making in professional practice to guide practice action” (p. 5). It requires “core dimensions of,” knowledge, cognition (or reflective inquiry), meta-cognition, mutual decision-making, contextual interaction and task impact (p. 5). Clinical reasoning is described as a

“journey, [that is] an aspiration and a commitment to achieving the best practice one can provide. Rather than being a point of arrival, complacency and lack of questioning by self or others, expertise requires both the capacity to recognize one’s limitations and practice capabilities and the ability to pursue professional development in a spirit of self-critique” (Higgs & Jones, 2010, p. 9).

The barriers to clinical reasoning have also been documented across the same health disciplines (Higgs & Jones, 2010; Gonzalez, 2018; Lajoie, Zheng & Li, 2018; Pelaccia, 2020). This was an area of study that I was particularly interested in since I was realizing my own struggles in this area. Factors such as organizational structures and expectations, clinical experience and personal tendencies such as self-regulation and anxiety have been found to impact the ability for clinicians to clinically reason (Higgs & Jones, 2010; Lajoie, Zheng & Li, 2018).

Organizational Structures Affecting Clinical Reasoning

In addition to the acceleration of our overall pace of life, other aspects of the work environment have had an impact on clinical reasoning (Higgs & Jones, 2010; Lajoie, Zheng & Li, 2018). The amount of human, material and economic resources play a role in influencing how a clinician can manage a caseload and deal with specific client issues (Higgs & Jones, 2010). Limited funding for more OTs for example, can result in larger caseloads. Limited employee numbers relative to the number of clients needing to be seen can also limit mentorship availability as well as the

CONTINUED ON PAGE 24



CLINICAL REASONING...

(CONTINUED FROM PAGE 23)

actual time that can be spent with each client. Wheelchair seating and mobility prescription is not the only issue that an OTs will be given a referral for. A seating referral may arise less frequently than general rehabilitation equipment or wound intervention. Unlike my situation of providing services under a specialized seating contract, most clinicians are not afforded time to practice, develop or reflect on their seating assessment skills. The institutional context in which health professionals are practicing is not always conducive to developing sound decision-making skills. Even though organizational structures and institutions were indeed affecting my clinical practice, I did not feel like I had the ability to change it. The pace of the world could not be slowed. It was not something that I could simply just fix by adjusting my behaviour or responses.

Personal Factors Affecting Clinical Reasoning

After working through my literature review on institutional barriers, I stumbled upon a field of research on personal factors and their effect on clinical reasoning and workplace performance. A study conducted by Lajoie, Zheng & Li (2018) evaluated whether self-regulation and affect had an impact on higher performance clinical reasoning in medical students. Interestingly, they found that higher performers (measured by those who arrived at the correct diagnosis) were more likely to spend time in the reflective phase of the clinical reasoning process. They also found that higher performers also had "marginally more" self-regulating learning behaviours. Low performers in contrast were more goal-oriented and expressed more emotion overall. Another article published in the Journal of Applied Psychology evaluated the effect of anxiety in workplace performance. Cheng and McCarthy (2018) acknowledge the rise of workplace anxiety as a concerning issue and summarize the literature that identifies anxiety as a rising and problematic emotion affecting workplace productivity, satisfaction, quality and performance. They claim, however, that the existing literature on the "dark side of anxiety," is "rather overly simplistic and incomplete" (p. 2). They assert "anxiety is not always detrimental to performance and can have facilitating effects or a bright side" (p.2). They explain that "anxiety can serve as a motivating function as anxious individuals are more sensitive to feedback and thus more vigilant in monitoring their environment and themselves" (p. 2). They argue that because anxiety can have both debilitating and facilitating effects, that teaching employees how to cope with anxiety in the workplace was essential to improving performance rather than striving to eliminate it altogether (Cheng & McCarthy, 2018).

The value of clinical reasoning in health care practice across disciplines is obvious and well studied. It is the foundation for client outcomes, whether prescribing a walking aid, a piece of bathroom equipment, a specific medication or procedure. All these decisions require sound clinical reasoning, which can be facilitated or inhibited by the organizational structures and personal factors exhibited by the health worker/employee. My husband, a practicing psychiatrist, told me

that during one of his clinical rotations, his preceptor imparted feedback that sticks with him to this day. This preceptor explained that the old saying of "don't just sit there, do something" was inherently flawed; sometimes, it is better to "not just do something, but sit there." This resonated with me. Thinking before acting, whether it be prescribing medication or a piece of medical equipment such as a wheelchair backrest, was important and necessary. In a faster-paced world enabled by technological innovation and an increased emphasis on efficiency and effectiveness resulting in perhaps more anxiety and less ability to self-regulate, where was the time we needed to think and clinically reason through a case? There was no billable code for thinking time and there was no drop-down option when completing client time statistics. The time that was needed had to be made by the clinician (Aggarwal, N., personal communication, Feb. 26, 2021).

RE-THINKING THE SEATING ASSESSMENT: EMPHASIZING CLINICAL REASONING WHEN TRANSLATING ASSESSMENT RESULTS INTO PRODUCT PARAMETERS

With all these factors affecting the ability to clinically reason across health disciplines, what could be done to help facilitate knowledge amongst new and even very experienced clinicians? When reflecting upon my own limitations, I began to realize that the most difficult aspect of seating prescription was not the assessment, the letter writing or even the setup or delivery. It was translating clinical data such as interview information and range of motion data from the physical assessment into actual equipment characteristics (also known as product parameters). I could not simply gather a bunch of numbers and understand what to do with them. I had to clinically determine what to do with them; a complex process involving the synthesis of the client's needs and context with their physical presentation and turning that into a device that they could use to access their world. This process would take time and require me to think. To address this gap, I began developing clinical reasoning models to help facilitate my own clinical knowledge as well as to hopefully support other clinicians through this part of the assessment. I recruited an OT colleague of mine, Lindsay Alford, to assist.

The following is a description of two algorithms and a clinical reasoning pathway designed to help translate mat assessment data into product parameters.

DESCRIPTION OF THE SITTING SIMULATION ALGORITHM

An algorithm is “a step-by-step procedure for solving a problem or accomplishing some end” (Merriam-Webster, 2021). The Sitting Simulation Algorithm has been designed based on biomechanical principles and describes the location and direction of the forces that should be applied to control a specific movement at the pelvis and hips. This Sitting Simulation Algorithm has two parts: a pelvis algorithm and a hip algorithm. These two algorithms are meant to be used together.

HOW TO USE THE SITTING SIMULATION ALGORITHM

After gathering range of motion data from the supine mat assessment and determining which deviations are reducible or non-reducible, follow the arrows to the relevant text box to determine where to apply force during sitting simulation to achieve the desired position of the pelvis and or hips. For example, if the pelvis is reducible, follow the arrow down to the text box below to find the strategies to trial during the sitting simulation. During the sitting simulation, use your body

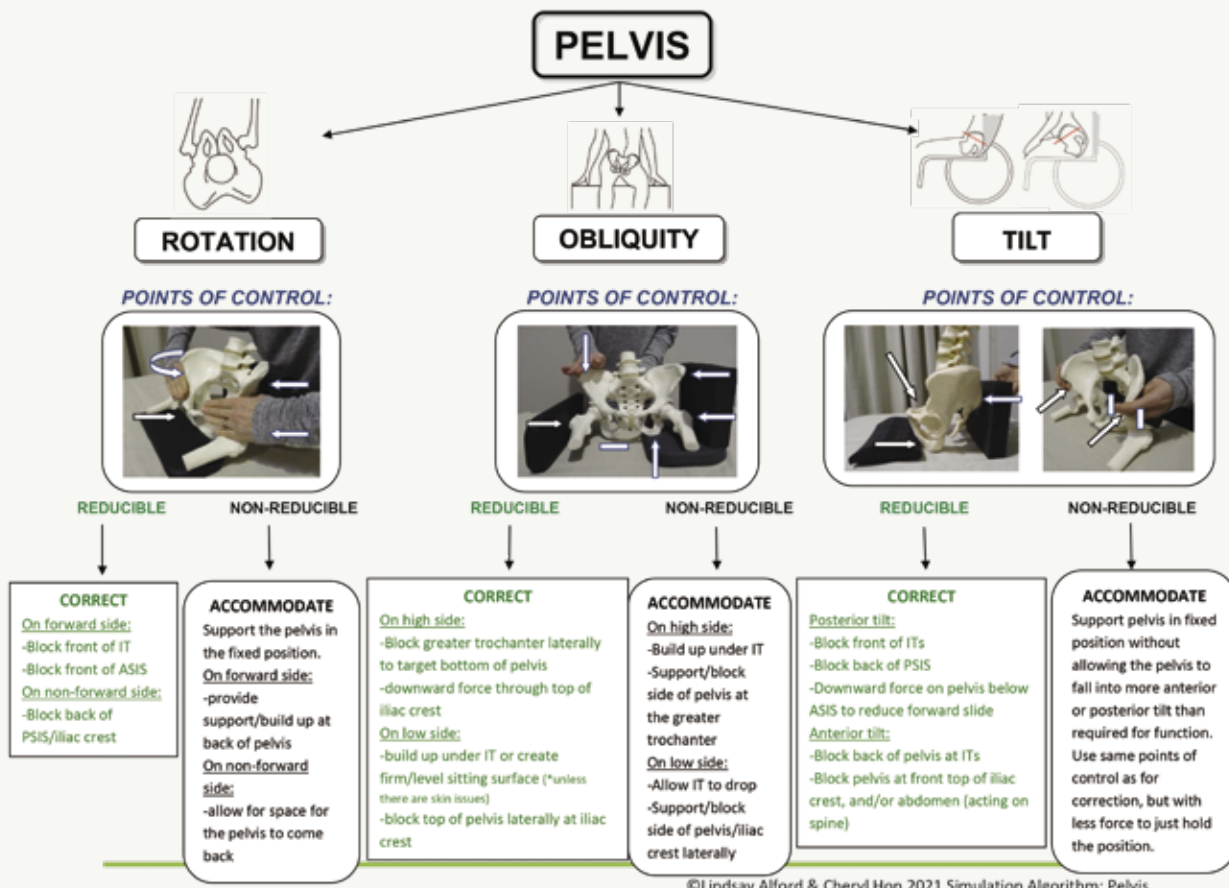
or other items such as pillows or foam, at the locations of control indicated in the text box. Clinicians should begin with the pelvis algorithm and then move on to the hip algorithm. Deviations at the hip joint may require change at the pelvis, and the clinician may be required to reference both algorithms interchangeably.

CONSIDERATIONS WHEN USING THE SITTING SIMULATION ALGORITHM

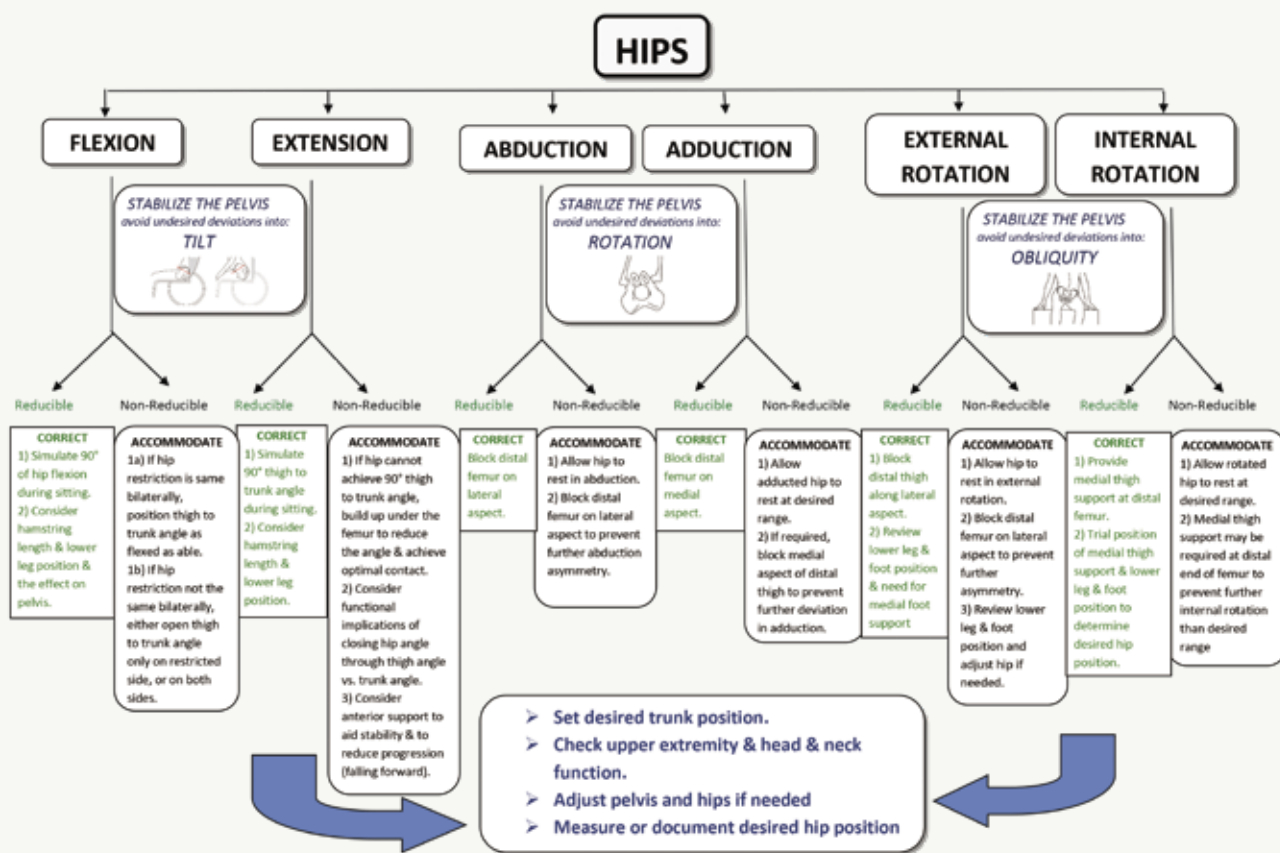
The Sitting Simulation Algorithm is not meant to be used to directly describe the product parameters required for a seating system. Clinicians should use this model to help guide them through the sitting simulation to determine the parameters required for trial or prescription.

Clinicians should also be aware of the following issues that will influence the client's optimal sitting position:

Other parts of the body will affect the client's optimal sitting position: These include hamstrings, feet/ankles, spine, head, neck and shoulders. During the sitting simulation, the clinician should assess how these parts of the body influence the position of the pelvis and hips.



©Lindsay Alford & Cheryl Hon 2021 Simulation Algorithm: Pelvis



©Lindsay Alford & Cheryl Hon 2021 Sitting Simulation Algorithm: Hips

Clinical reasoning during the sitting simulation:

- **Determining degree of force and equipment parameters:** The amount of force that is required and applied to the client's body to prevent a specific deviation is felt by the clinician applying the force and cannot be captured by the algorithm.
- **Tolerance:** Clinicians need to determine what is functionally and posturally realistic. Clinicians need to consider where and how much force they apply. Over-correcting a client's posture by applying too much force could severely impede function or result in pain or skin breakdown. In contrast, under-correction could result in further deterioration of a client's posture and result in other health implications such as skin breakdown, other organ system dysfunction or pain.

Targeted outcomes (specific, measurable, attainable, relevant, time-based or S.M.A.R.T goals) of the client: The goals of the client need to be prioritized. If the forces applied by the seating system impede the functional goals of the client, the system will not be tolerated, which can result in equipment abandonment.

Pain, pressure, skin integrity: This will influence where pads and other postural control components can be placed. For example, if a client has a wound over the ischial tuberosity on the low side of a reducible oblique pelvis, placing a pad under the side with the wound to level the pelvis is not recommended. Instead, other

areas of the pelvis will need to be supported to avoid further skin breakdown.

Power wheelchair vs. manual wheelchair set up:

Postural needs are different depending on the system the client will be using. Whether a client has dynamic seat functions and how a client needs to move to manoeuvre or operate their wheelchair will influence where forces can be applied on the body.

CLINICAL REASONING PATHWAY FOR SEATING INTERVENTION FOR THE TRUNK

This clinical reasoning pathway outlines a sequence of steps that can be used to assess the spine during the sitting simulation. At this stage, the types of spinal asymmetry are already identified, and a full assessment of pelvic mobility and lower extremity range of motion has been completed.

STEP 1: DETERMINE THE LOCATION AND DIRECTION OF FORCE AT THE TRUNK

See Table 1 of some of the points of control that should be considered to correct specific spinal asymmetries:

STEP 2: ASSESS TOLERANCE OF FORCE DURING THE SITTING SIMULATION

An effective way to assess how much force a client will tolerate is to start with applying slightly more force than required to correct the reducible asymmetry and then slowly backing off the points of control to see if this will improve or enable function. As the clinician backs off, the client may be better able to position or move their head and

neck or upper extremity. Some clients may be able to verbalize when they reach their desired posture. Similarly, watching the client for subtle cues such as facial expressions, body language, reduction in tone or ability to use arms can also help indicate when the right amount of force is achieved. Once the appropriate amount of force is identified, translating that into product using biomechanical principles becomes more

Clinical Reasoning Pathway for Seating Intervention for the Trunk

©Lindsay Alford & Cheryl Hon 2021

PHYSICAL ASSESSMENT: SUPINE ASSESSMENT & SITTING ASSESSMENT

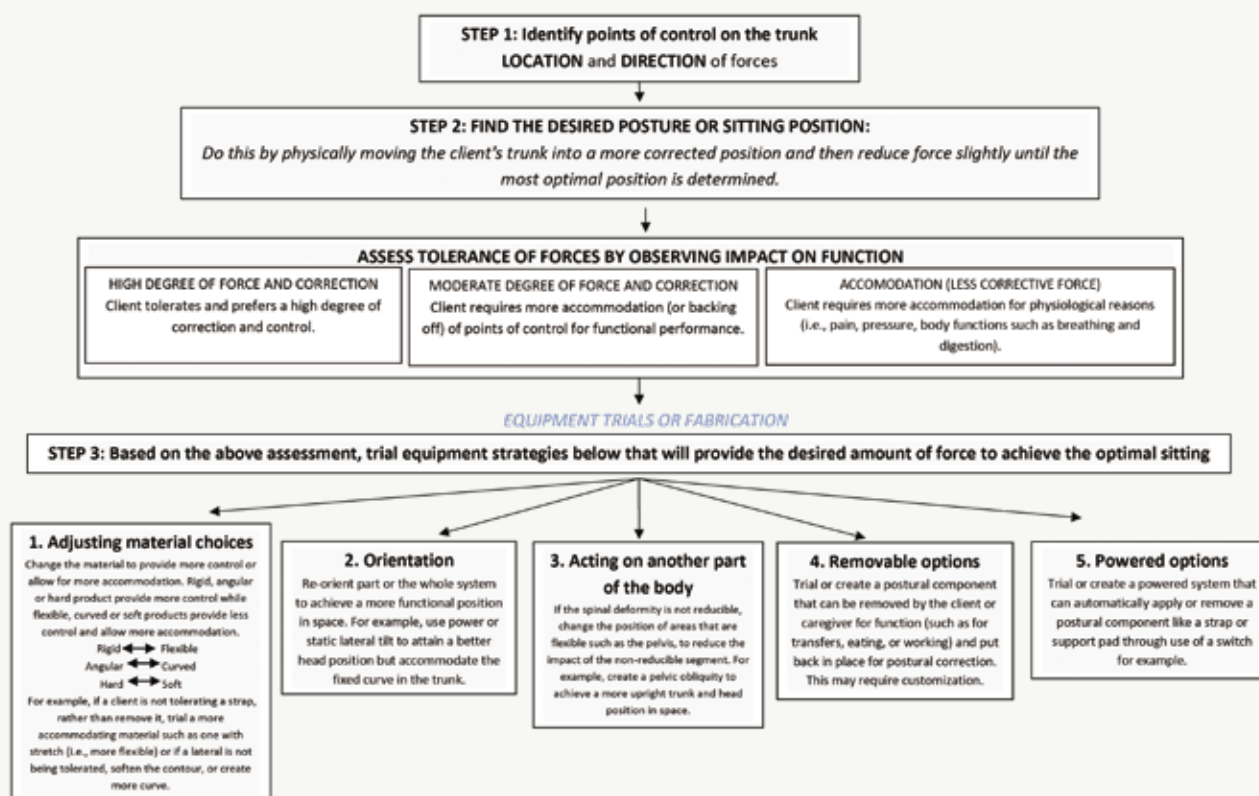


TABLE 1 General Guide for Points of Control for Spinal Asymmetries (Alford, L., 2021)

DEFORMITY	SCOLIOSIS	KYPHOSIS	LORDOSIS	SPINAL ROTATION
Viewed from (body plane)	Frontal	Sagittal	Sagittal	Transverse
Axis of movement	Anterior/Posterior	Medial/Lateral	Medial/Lateral	Superior/Inferior
Points of control for correction or stabilization	Lateral control at (or just below) apex on convex side, and above and below apex on concave side	Anterior control above and below apex, posterior control at/just below apex	Anterior control at apex, posterior control above and below apex	Anterior control on forward side, posterior control on rearward side



The author doing what she loves!

CLINICAL REASONING... (CONTINUED FROM PAGE 27)

evident. It is important to note, however, that it is often easier to start with more correction or support and then back off by adjusting equipment parameters such as softening contours or adding removable components to facilitate function.

STEP 3: TRANSLATING PHYSICAL ASSESSMENT DATA INTO PRODUCT PARAMETERS

Once the location, direction and degree of forces on the torso is identified, the clinician must then translate this information into product parameters. This is best done with consideration of the following biomechanical principles (Chisholm. J-A & Yip, J, n.d., pp. 36-38):

1. Correcting posture using pads — When completing the simulation, the clinician determines where to apply pads to control a particular movement or deviation. Applying the ‘equal and opposite reaction’ at specific points of control to counter gravity and/or the pull of the client’s body controls movement. During your sitting simulation, a clinician’s hands may be pushing actively against the client to correct their posture, not just holding still. Unless you use powered or dynamic components, a seating system will not ‘push back’ or generate force against a client and will just be static pads. As part of your assessment, consider whether the amount and variance of force you are applying is realistic to replicate in a seating system.

2. Material Choice — Materials can be:

- Firm or soft: Firm will offer more effective control compared to soft.
- Rigid or flexible: Flexible will move to accommodate posture, whereas rigid will resist movement.
- Angular or curved: Generally curved pads will allow more movement and require more force to hold position than a perpendicular, angular component. For example, a curved

pelvic belt can allow a client to move into pelvic rotation, while an angular belt will provide more focal pressure or control and can help to prevent deviations into rotation.

3. Lever Length — Creating a longer lever will result in less force requirement to change the position. This usually means moving the pad farther away from the joint we are acting on.

4. Three (or more) Points of Control — Controlling the movement of a joint requires that joint to be held in place on either side, using least three points. Sometimes one of those points can be controlled by gravity or by the client’s active movement, but all need to be controlled for an effective seating system.

5. Distribution of Pressure — Small pads that cover a small surface area will maximize the force delivered at a specific location and will consequently create greater pressure in that location. This can be highly effective if the client can tolerate it. Larger, more contoured pads will result in decreased, more distributed pressure.

Once these biomechanical principles are considered, the clinician can use the model to consider five types of interventions based on the assessment findings: adjusting material choices, using orientation, acting on another part of the body, using removable options and/or using powered options. See the model below for details.

CONCLUSION

Developing my own clinical reasoning in wheelchair seating prescription is a process that took time, reflection and mentorship. I continue to change and evolve the way I practice with every new client and strive to have an open mind to new ideas, an openness and flexibility to change, and to take deliberate action to seek out more information and create new solutions. In a world where time and resources are limited and clinicians are trying to meet their workplace and personal expectations, the process of clinical reasoning must be more efficient. Re-thinking where clinicians allocate their time in the seating assessment is necessary. Clinicians must make a conscious choice to shift how to think about wheelchair and seating prescription. Organizational structures and personal factors have been found to influence the work environment and experience. The shift in technological advances including innovations

I CONTINUE TO CHANGE AND EVOLVE THE WAY I PRACTICE WITH EVERY NEW CLIENT AND STRIVE TO HAVE AN OPEN MIND TO NEW IDEAS, AN OPENNESS AND FLEXIBILITY TO CHANGE, AND TO TAKE DELIBERATE ACTION TO SEEK OUT MORE INFORMATION AND CREATE NEW SOLUTIONS. IN A WORLD WHERE TIME AND RESOURCES ARE LIMITED AND CLINICIANS ARE TRYING TO MEET THEIR WORKPLACE AND PERSONAL EXPECTATIONS, THE PROCESS OF CLINICAL REASONING MUST BE MORE EFFICIENT.

pathways can seem time consuming and overly detailed, clinicians need to consider using tools such as these to save time and costs down the line. The models are not intended to take more time but instead to act as a cue for clinicians to slow down and think. They are meant to facilitate a practice model that is both efficient, effective and ultimately more professionally satisfying.

in medical equipment have forever changed the pace and process of practice. Although efficiency has improved and technology has enabled clinicians to do more with less, there are disadvantages that cannot be ignored. Efficiency is not synonymous with effectiveness in health care practice. The consequences of clinical errors are costly in terms of time and money and take a significant toll on the clients themselves. The clinical reasoning models and pathways shown are meant to help facilitate clinical reasoning in a world where these skills can not be developed as fast as the referrals come in. Although algorithms and clinical

REFERENCES

- ALFORD, A., & HON, C. (2021). SITTING SIMULATION ALGORITHM. ALFORD, A., & HON, C. (2021). WHAT ABOUT THE TRUNK? A REVIEW OF STRATEGIES TO PROVIDE POSTURAL CONTROL FOR THE TRUNK WHILE MAINTAINING FUNCTION.
- BROWN TYO, MIRINDA; MCCURRY, MARY K. AN INTEGRATIVE REVIEW OF CLINICAL REASONING TEACHING STRATEGIES AND OUTCOME EVALUATION IN NURSING EDUCATION, NURSING EDUCATION PERSPECTIVES: 1/2 2019 - VOLUME 40 - ISSUE 1 - P 11-17 DOI: 10.1097/01.NEP.0000000000000375
- CHAPPARO, C., & RANKA, J. (2008). CLINICAL REASONING IN OCCUPATIONAL THERAPY. (CLINICAL REASONING IN THE HEALTH PROFESSIONS, 265-277.)
- CHENG, BONNIE & MCCARTHY, JULIE. (2018). UNDERSTANDING THE DARK AND BRIGHT SIDES OF ANXIETY: A THEORY OF WORKPLACE ANXIETY. JOURNAL OF APPLIED PSYCHOLOGY. 103. 10.1037/APL0000266.
- CHISHOLM, J.-A., & YIP, J. (N.D.). WHEELCHAIR SEATING AND POSITIONING: PRACTICAL APPLICATIONS BINDER.
- GONZALEZ L. TEACHING CLINICAL REASONING PIECE BY PIECE: A CLINICAL REASONING CONCEPT-BASED LEARNING METHOD. J NURS EDUC. 2018 DEC 1;57(12):727-735. DOI: 10.3928/01484834-20181119-05. PMID: 30512109.
- JOY HIGGS, MARK & A JONES, STEPHEN (2008). CLINICAL REASONING IN OCCUPATIONAL THERAPY. (CLINICAL DECISION MAKING AND MULTIPLE PROBLEM SPACES, 1-17.)
- LANGE, M. L., & MINKEL, J. (2018). SEATING AND WHEELED MOBILITY: A CLINICAL RESOURCE GUIDE. THOROFARE, NJ: SLACK INCORPORATED.
- MERRIAM-WEBSTER. (N.D.). IN MERRIAM-WEBSTER.COM DICTIONARY. RETRIEVED MARCH 29, 2021, FROM [HTTPS://WWW.MERRIAM-WEBSTER.COM/Dictionary/SEMANTICS](https://www.merriam-webster.com/dictionary/semantics)
- MORTENSON, W. B., & MILLER, W. C. (2008). THE WHEELCHAIR PROCUREMENT PROCESS: PERSPECTIVES OF CLIENTS AND PRESCRIBERS. CANADIAN JOURNAL OF OCCUPATIONAL THERAPY, 75(3), 167-175.
- PELACCIA, T., PLOTNICK, L. H., AUDÉTAT, M. C., NENDAZ, M., LUBARSKY, S., TORABI, N., THOMAS, A., YOUNG, M., & DORY, V. (2020). A SCOPING REVIEW OF PHYSICIANS' CLINICAL REASONING IN EMERGENCY DEPARTMENTS. ANNALS OF EMERGENCY MEDICINE, 75(2), 206-217. [HTTPS://DOI.ORG/10.1016/J.ANNEMERGEMD.2019.06.023](https://doi.org/10.1016/j.annemergmed.2019.06.023)
- SUSANNE P. LAJOIE, JUAN ZHENG & SHAN LI (2018) EXAMINING THE ROLE OF SELF-REGULATION AND EMOTION IN CLINICAL REASONING: IMPLICATIONS FOR DEVELOPING EXPERTISE, MEDICAL TEACHER, 40:8, 842-844, DOI: 10.1080/0142159X.2018.1484084

CONTACT THE AUTHOR

Cheryl may be reached at
CHERYL@ACCESSTHERAPISTS.COM



The author doing what she loves!

Cheryl Hon, B.A., M. OT, is an occupational therapist who works at Access Community Therapists in Vancouver, British Columbia, Canada. Hon works primarily in complex wheelchair seating and positioning prescription for clients with a range of disabilities in the community. She has presented numerous times on the topic of wheelchair seating and positioning and pressure injury prevention and management with her colleague, Lindsay Alford, and is keen to develop new ways of thinking about wheelchair seating prescription and education. She is a mom of two young children and wife to a supportive and inspiring husband. She credits her mentors



Jo-Anne Chisholm, Joanne Yip and the other therapists at Access Community Therapists for informing her practice and supporting her learning and professional development in this fast-moving and ever-changing clinical world.



SPINA BIFIDA

Written by: **MICHELLE L. LANGE, OTR/L, ABDA, ATP/SMS**

DEFINITION

Spina bifida is a type of neural tube defect, which is congenital. The neural tube forms early on in pregnancy, becoming the brain and spinal cord, and typically closes about a month after conception. In Spina bifida, part of this structure does not close, leading to defects in the spinal cord and the vertebrae in this area. Severity depends on the specific type of defect, size, location and any associated conditions and complications.

ETIOLOGY

While no specific cause has been determined, research has indicated a possible combination of genetic, nutritional and environmental risk factors. This includes a family history of neural tube defects, hot tub use early in pregnancy and folate (vitamin B9) deficiency.

TYPES

- Spina bifida occulta is a small gap in one or more of the vertebrae. A dimple, hair or birthmark may be present over this area. This is the mildest and most common type. No symptoms may be present.
- Myelomeningocele presents with several vertebrae in the lumbar or thoracic area open and the spinal nerves and meninges moved into a sac on the outside of the body. Skin may cover the sac. This can lead to infections and cause paralysis below this level. Bowel and bladder issues are common. This is the most severe type of spina bifida. The sac is reduced surgically.
- Meningocele presents with a sac of fluid at the gap in the vertebrae, however the spinal nerves remain in the spinal canal and only mild symptoms are present. This is the rarest presentation. The sac is reduced surgically.

ASSOCIATED CONDITIONS

- Hydrocephalus is a common co-morbidity where cerebral spinal fluid accumulates in the brain. A shunt is placed to reduce this accumulation, which can lead to brain damage.
- Many children with myelomeningocele also have a brain abnormality called Chiari malformation where the brainstem is elongated and lower than usual. This can cause issues with breathing and swallowing. Surgery is sometimes required.
- The spinal nerves may become entrapped in scar tissue from surgery to reduce the sac, resulting in a tethered cord. This can occur during growth, resulting in further loss of function and sometimes requiring surgery.
- Sleep disorders, including sleep apnea, may be present.
- Learning disorders are more common in people with spina bifida.

PATHOPHYSIOLOGY

Issues seen vary with the size and location of the defect, whether skin covers the sac and which spinal nerves are out of the spinal canal. In general, anything innervated below the level of the defect may be impacted. This can include:

- Walking and mobility issues secondary to paralysis or weakness of the legs
- Orthopedic issues such as spinal curvatures, abnormal growth, poor hip integrity, muscle contractures and changes to bones and joints.
- Bowel and bladder issues

CONTACT THE AUTHOR

Michelle may be reached at MICHELLELANGE1@OUTLOOK.COM

REFERENCES

1. MAYO CLINIC, PATIENT CARE & HEALTH INFORMATION, DISEASES & CONDITIONS, SPINA BIFIDA
[HTTPS://WWW.MAYOCLINIC.ORG/DISEASES-CONDITIONS/SPINA-BIFIDA/SYMPTOMS-CAUSES/SYC-20377860#:~:text=SPINA%20BIFIDA%20IS%20A%20BIRTH,THE%20ISSUES%20THAT%20ENCLOSE%20THEM.](https://www.mayoclinic.org/diseases-conditions/spina-bifida/symptoms-causes/syc-20377860#:~:text=SPINA%20BIFIDA%20IS%20A%20BIRTH,THE%20ISSUES%20THAT%20ENCLOSE%20THEM.)

Michelle Lange is an occupational therapist with more than 30 years of experience and has been in private practice, Access to Independence, for over 10 years. She is a well-respected lecturer, both nationally and internationally, and has authored numerous texts, chapters and articles. She is the co-editor of Seating and Wheeled Mobility: a clinical resource guide; editor of Fundamentals in Assistive Technology, Fourth Edition, NRRTS Continuing Education Curriculum coordinator and clinical editor of DIRECTIONS magazine. Lange is a RESNA Fellow and member of the Clinician Task Force. Lange is a certified ATP, certified SMS and is a senior disability analyst of the ABDA.



NRRTS|CE

CONTINUING EDUCATION WORTH THE INVESTMENT



TUESDAY, JUNE 8, 2021, AT 7 PM ET

Speaker: Mary Forhan, OT Reg (AB), PhD

Addressing Weight Bias and Stigma in Bariatric Care

Medical Terminology, Beginner Level

This interactive course will focus on learning more about weight bias in health care settings and its impact on the client/practitioner relationship and the health and well-being of clients with bariatric care needs. Participants will be provided with the most up-to-date evidence about weight bias constructs and ways in which it is

evidenced in practitioner's thoughts, actions and ultimately the quality of care and service. Participants will be led through activities and challenges with a goal to identify actionable items to reduce weight bias in their practices and settings. This session will be of interest and use to anyone who works with clients who have been diagnosed with obesity or who live in large bodies.

LEARNING OUTCOMES:

- The participant will be able to describe weight bias origins, perpetuation and impact on health and well-being.
- The participant will be able to identify ways in which to reduce weight bias in current practice settings.
- The participant will be able to identify tools and resources to create safe and accessible spaces and places for clients with bariatric care needs.



WEDNESDAY, JUNE 9, 2021, AT 11 AM ET

Evaluation Criteria and Justification for a Mobile Shower Commode Chair

Speaker: Jessica Presperin Pedersen, OTD, MBA, ATP/SMS, FAOTA, RESNA Fellow

Sponsored by RAZ

ATP Prep Content, Seating and Positioning, Beginner Level

The wheelchair is not the only mobility device needed in the home. A mobile shower commode chair provides mobile assist to get from the bedroom to the bathroom and provides postural stability as well as specific

componentry to enhance safe function for the performance of toileting and showering. A clinical evaluation and critical reasoning are highly suggested to make the best match for the person to have an optimally functional mobile commode shower chair. This seminar will demonstrate evaluation considerations for determining the type of commode or shower frame, postural supports and functional components. This webinar will demonstrate the evaluation process as well as describe components that may be medically necessary for safe functional toileting and showering.

LEARNING OUTCOMES:

- The participant will be able to identify three aspects of an evaluation for a determining the type of toileting/bathing equipment to match physical and functional needs.
- The participant will be able to list at least two functional activities performed in a mobile shower commode chair.
- The participant will be able to describe how the bathroom environment can determine specifics related to equipment recommendation.
- The participant will be able to identify the medical justification for a mobile shower commode chair and componentry for postural or functional needs.



WEDNESDAY, JUNE 10, 2021, AT 5 PM ET

How to do More with Your Power Wheelchair — Interfacing with the Outside World

Antoinette Verdone. ATP

Best Business Practice, Seating and Positioning, ATP/SMS Prep Content, Advanced

Many people who use power wheelchairs, particularly those using alternative driving methods, also use other assistive technology devices. Providing separate access methods for each assistive technology device, such as a power wheelchair and a speech generating device, is not always possible. Interfacing connects technologies so that the power wheelchair driving method can also be used to control other devices from assistive technology to commercially available technologies, such as smart phones. This webinar will review Interfacing Components (ECU modules, Input/Output Modules) and review when these are clinically indicated and how to use this technology to help your clients access things in their environment.

LEARNING OUTCOMES:

- The participant will be able to list different terminology used by manufacturers for this kind of equipment.
- The participant will be able to describe the basics of interfacing and setting up this equipment.
- The participant will be able to list two items that can be accessed via ECU/IOM devices.



WEDNESDAY, JULY 21, 2021 AT 11 AM ET

An Overview of ISO and RESNA Standards for Wheelchair Seating

Kara Kopplin, B.Sc.Eng

Sponsored by Permobil

ATP/SMS Prep Content, Medical Terminology, Intermediate Level

For decades, test standards have been developed by the International Organization for Standardization (ISO) to measure and characterize wheelchair seating. These tests measure critical characteristics of wheelchair cushions, revealing properties that might be suitable for meeting client's needs for tissue protection and positioning and to enhance the ability to perform MRADLs.

In this presentation, attendees will learn how standards are created, from the national level up to the ISO global level. An overview of current wheelchair seating standards will be presented in the context of the CPG, demonstrating why the test data can provide insight into cushion selection for the client. Various cushion technologies will be compared using blinded test data from numerous ISO standards to reveal important similarities and differences. Both the benefits and limitations of the test data will be discussed, emphasizing the role of the ISO standards as another set of tools in the clinical reasoning process.

LEARNING OUTCOMES:

- The participant will be able to describe who develops ISO standards and how the process works.
- The participant will be able to match four or more recommendations from the CPG for pressure injury prevention to ISO test standards.
- The participant will be able to analyze blinded test results to consider how the data may be applied to cushion selection.



THURSDAY, JULY 22, 2021 AT 5 PM ET

Battery Technologies

Larry Carter, Regional Sales Manager and HME

Sponsored by MK Battery

Business Practice, Beginner Level

This course will teach the participant how to identify battery chemistry utilized in mobility, determine which chemistry is appropriate for a specific device/application, determine charger type for the application, as well as discuss testing, safety and tools.

LEARNING OUTCOMES:

- The participant will be able to determine which chemistry is utilized in specific applications; i.e., where to utilize GEL and where to utilize AGM.
- The participant will be able to correctly identify which type of charger is to be utilized for each chemistry, i.e., GEL vs. AGM.
- The participant will be able to effectively utilize battery testing tools, identify safety hazards and prevent serious injury while working with batteries.



WEDNESDAY, AUGUST 4, 2021 AT 11 AM ET

When to Start to use Seating, Standers and Gait Trainers

Ginny Paleg, PT, DScPT

Sponsored by Prime Engineering

ATP Prep Content, Seating and Positioning, Beginner Level

We can now identify infants at highest risk for needing mobility devices and postural management at 2 to 6 months. Knowing this allows us to work closely with families to understand how equipment can be used as affordances for participation.

LEARNING OUTCOMES:

- The participant will be able to describe how the GMA and HINE can be used to identify infants at risk for lifelong sensory motor impairment and how this data could be included in the LMN.
- The participant will be able to describe how the GMFCS Levels can be used to predict equipment needs and how to include this information in the LMN.
- The participant will be able to describe focus on function and participation rather than a more traditional therapy model.



TUESDAY, AUGUST 10, 2021 AT 7 PM ET

Person First Terminology: Who, Where, When and How

Jill Sparacio, OTR/L, ATP/SMS, ABDA

ATP Prep Content, Business Practice, Beginner Level

The use of person-first terminology should be a simple concept where consistent rules are applied to all situations. However, it is more complicated with many exceptions and "don'ts." In the current state of political correctness, person first terminology is applied to so many aspects of life, not just those with disabilities. At times, use of person first terminology can be found offensive by the individual being referred to, creating a personal preference for the individual being "labeled." The use of labels can lead to stereotyping that predispose others to certain beliefs and characteristics about that individual. This webinar will provide increased awareness of the importance of person-first terminology and provide some guidelines, both to do and to not do, to insure the correctness of interactions. Although all areas of person-first terminology will be covered, the focus will be on those individuals with disabilities.

LEARNING OUTCOMES:

- The participant will be able to describe the difference between affirmative and negative phrases for describing individuals.
- The participant will be able to identify three commonly recognized exceptions in using person first terminology.
- The participant will be able to list four techniques to help when describing an individual with a disability.



WEDNESDAY, AUGUST 11, 2021 AT 11 AM ET

Good Vibrations: Can Manual Wheelchair Design Principles Mitigate the Adverse Effects of Vibration?

Curt Prewitt, PT, MPT

Sponsored by Ki Mobility

Best Business Practice, Seating & Mobility, Beginner Level

Significant exposure to vibration (whole body vibration - WBV) has been linked to a variety of adverse health conditions in able bodied workers exposed to WBV during occupation. For individuals in wheelchairs, WBV can not only have an adverse effect on comfort, ride quality and energy expenditure, but the WBV these individuals experience in their chairs can contribute to pain, degenerative conditions, interference with ADLs, increased spasticity and others.

Wheelchair manufacturers have attempted to mitigate the detrimental effects of WBV through a variety of approaches in the past. However, much of the technology has been insufficient to meaningfully dampen the WBV a person in a manual wheelchair sustains. This presentation will discuss the issues associated with WBV for the manual wheelchair user, discuss the pros and cons of some of the remedies that have previously been used, and discuss the unique application of design principles and materials that allow for dampening WBV.

LEARNING OUTCOMES:

- List three detrimental effects of WBV on the manual wheelchair user.
- List three locations or components on a manual wheelchair where manufacturers have attempted to reduce the transmission of WBV to the user.
- Describe two benefits of successfully reducing whole body vibration (WBV) transmission to the manual wheelchair user.



THURSDAY, SEPTEMBER 23, 2021 AT 5 PM ET

Palliative Care and CRT

Speaker: Jean Minkel, PT, ATP

ATP Prep Content, Seating & Mobility, Beginner Level

The words palliative care are often linked to, confused with and erroneously used interchangeably with hospice care. While both palliative care and hospice care embrace the concepts of patient-centered care based on the patient's symptoms and goals of care, they differ in the timing of implementation and the need to forego curative treatment. This webinar will review the outcome of the consensus statement developed

by the Consortium of Multiple Sclerosis Centers, on the Comprehensive Palliative Care in multiple sclerosis. By reviewing the statement, participants will learn where Complex Rehab Technology can fill unmet needs being experienced by health care providers and patients who think, "There is nothing more we can do," due to the progression of a disease. As we know, there are TONS of interventions "we" can offer.

LEARNING OUTCOMES:

- Participants will be able to name and discuss the differences between palliative care and hospice care.
- Participants will be able to list the four domains of inquiry when following the principles of palliative care.
- Participants will be able to identify effective communication strategies including the importance of "Ask before Teaching."



In a time of drastic change, it is the learners who inherit the future. We appreciate our learners' willingness to adapt to the ever-changing sphere of Complex Rehab Technology, even before COVID hit our world.

We have over 100 on-demand webinars and CEU articles in our library that cover a variety of topics on seating and positioning, medical terminology, ethics, funding and best business practice.

The education program awarded over 1,356 CEUs from August 2019 to August 2020 — that equals 13,560 hours of education!

The numbers are proof that we are meeting one of our education objectives at NRRTS — to bring you quality education at an affordable price. Registrants receive education at no cost, as a benefit; FONS pay half-price, and others only \$45 per course!

We've made access to education affordable, and NOW, even easier for our learners!

NRRTS is accredited by the International Association for Continuing Education and Training (IACET). NRRTS complies with the ANSI/IACET Standard, which is recognized internationally as a standard of excellence in instructional practices. As a result of this accreditation, NRRTS is authorized to issue the IACET CEU.

IACET CEUs are accepted by NRRTS for the RRTS® and CRTS® credentials and by RESNA for the ATP and SMS certification renewal. The National Board for Certification in Occupational Therapy Inc. (NBCOT) accepts the IACET CEUs as PDUs for the American Occupational Therapy Association (AOTA). State occupational and physical therapy associations also accept IACET CEUs for license renewal.



PROBLEM SOLVING WITH ELIO

Written by: **LINDSAY ALFORD, BSC.OT**

"Mr. X is sliding out of his wheelchair!" "Mrs. X is always leaning to her right!"

Undoubtedly, these are examples of referrals that many of you have received. This is a common initial description of the problems that initiate a new referral. Although a clear problem is present and may also pose a safety issue, this is not enough information on which to base equipment recommendations. All too often, equipment changes are made prior to adequately breaking down the problem. We are quick to put on a pelvic belt or a deeper backrest because, of course, we want to help our clients and are eager to fix the issue. But if we

do not identify why the current equipment set up is not working and determine the actual source of the problem, we frequently end up chasing the problem, rather than solving it.

The first step to solving a problem is identifying why it is happening. Completing a full seating assessment allows us to identify the physical and functional issues and the product parameters needed to overcome these issues.

Most often, when a seating system and/or wheelchair are not working for a user, it is because there is a mismatch between the current parameters of that equipment and the client's physical or functional issues and needs.

To demonstrate this, meet Elio.

Elio is a 48-year-old man with spinocerebellar ataxia (Type 3), a progressive and degenerative genetic disease, who lives in supportive housing. He has

his own suite with daily caregiver support but is alone for periods of time during the day and likes to spend his time watching videos on his tablet. He has bilateral upper extremity spasticity and poor coordination as well as bilateral lower extremity weakness and spasticity. He performs a stand pivot transfer with moderate assistance and propels a non-tilting manual wheelchair with a combination of hands and feet. He used a power wheelchair in the past but recent cognitive deterioration led to safety concerns and so his team and family decided to discontinue use of this base. Elio has impaired speech and is difficult to understand verbally. He can use a letter board and has used an iPad App for communication in the past but was not using this at the time of referral. He is an easygoing guy with a fantastic smile!

PROBLEMS IDENTIFIED IN THE REFERRAL:

- Neck pain, especially when accessing laptop or iPad.
- Sliding forward in wheelchair, frequently to the point of falling out of the wheelchair.
- Leaning to right, causing right upper trunk pressure/pain.
- Skin breakdown on coccyx.
- Swallowing concerns related to neck position.

TARGETED OUTCOMES IDENTIFIED DURING THE ASSESSMENT:

- Reduce pain (neck and right trunk).
- Prevent falls.
- Heal coccyx wound.
- Improve safe swallow.
- Improve independent access to iPad for leisure and communication.
- Maintain independent wheelchair propulsion. Elio identified that it was a priority for him to be able to foot propel.

ASSESSMENT IN WHEELCHAIR:

The photos illustrate Elio's equipment and positioning in his manual wheelchair at the time of our initial assessment. In Figure 1, he is shown attempting to propel using both hands and feet. In Figure 2, he is demonstrating how he accesses his tablet, which at home is placed on his small dining table.



FIGURE 1 Elio attempting to propel using both hands and feet in current wheelchair.



FIGURE 2 Elio demonstrating how he accesses his tablet from the current wheelchair.

ALTHOUGH A CLEAR PROBLEM IS PRESENT AND MAY ALSO POSE A SAFETY ISSUE, THIS IS NOT ENOUGH INFORMATION ON WHICH TO BASE EQUIPMENT RECOMMENDATIONS. ALL TOO OFTEN, EQUIPMENT CHANGES ARE MADE PRIOR TO ADEQUATELY BREAKING DOWN THE PROBLEM.

Elio's initial sitting posture:

- Posterior pelvic tilt, left side low pelvic obliquity, and left forward pelvic rotation.
- Pelvis tended to shift left from midline and slide forward on the cushion.
- Long kyphosis curve through his full thoracic and cervical spine resulting in forward leaning and difficulty lifting his head to see in front of him.
- Upper trunk leans to his right with a scoliosis convex to his left. He tends to lean heavily on his right elbow, which limits use of this arm. He is making poor contact with the backrest and is leaning with pressure against the right trunk lateral.

Elio was seated on a generic contoured foam cushion, a backrest with deep laterals and no kyphosis contour, at approximately 100-degree seat-to-back angle, with a pelvic positioning belt and a head support. At this point in the assessment, having only talked to Elio and his sister and assessed/observed him in his current wheelchair, I was starting to formulate possible theories as to the causes of these problems. I noticed that he is trying to get around his footplates in order to reach the floor with his feet and the seat-to-floor height was too high for efficient foot propulsion. His backrest really did not match the shape of his trunk. He was also collapsing forward to see his computer and leaning on his right elbow. However, this is the point of the evaluation process that I constantly have to tell myself, "Wait!" Note down the theories, but don't jump to solutions or product parameters yet. Even as an experienced clinician, I catch myself trying to skip ahead and need to remember to finish gathering all the information first.

ASSESSMENT IN SUPINE:

Elio's kyphosis is partially reducible in his lower thoracic and lumbar spine. His mid-thoracic through cervical spine is non-reducible. He required two pillows under his head to lie comfortably in supine on the mat. His scoliosis is also only partly reducible, with an apex convex left at his mid-thorax. He has spasms through his right flank that pulls him into right side flexion and pulls the right side of pelvis upward. His pelvis is oblique, low on the left and also non-reducible. Pelvic tilt can be moved to neutral, with a tendency to posterior, and is quite stiff. Overall passive hip range of motion is adequate for a neutral sitting position. Hamstrings are shortened and spasm with a quick stretch.

SITTING SIMULATION ASSESSMENT:

In a supported sitting position on the mat (see Figure 3) with his kyphosis accommodated and his thigh-to-trunk angle opened significantly more than in his own wheelchair, Elio was better able to lift his head and his forward collapse was reduced, though this was still difficult for him to sustain. Because his right side high pelvic obliquity and scoliosis are not fully reducible, we experimented with accommodation in sitting simulation. Adding a wedge under his right pelvis to both accommodate the obliquity and 'tip' him to his left, away from the side his upper trunk tends to fall to, was successful to bring his upper trunk and head

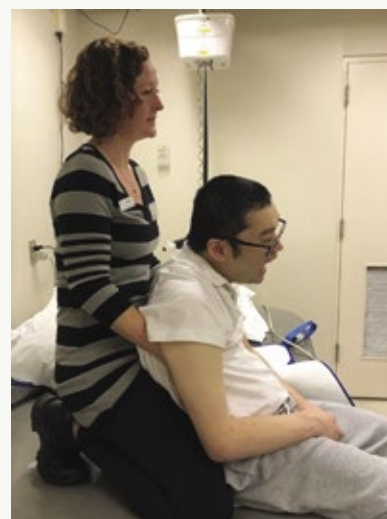


FIGURE 3 Supported sitting on the mat

CONTINUED ON PAGE 38

PROBLEM SOLVING... (CONTINUED FROM PAGE 37)

closer to midline. By reorienting his position this way, it was noted that less force was required laterally at the three points of control (high on his right side under his axilla, mid-trunk on the left side and lateral right pelvis) to prevent the trunk collapse to his right. In addition, allowing his pelvis to be offset or shifted to his right (not directly under his shoulders) brought his shoulders closer to level and head closer to midline.

As a result of the findings above, the postural plan and goals became clearer:

- To support Elio in right side high obliquity (as this was non-reducible) and reorient body position to his left by acting on his pelvis to reduce right lean.
- To partially correct scoliosis (as range allows) and reduce further collapse to his right.
- To orient him posteriorly to reduce forward trunk collapse.
- Overall, the priority goal was to improve Elio's head and upper trunk alignment, and this was prioritized over pelvic and lower trunk alignment. With non-reducible asymmetries and a tendency to fall further into the position of asymmetry, we could not achieve neutral alignment throughout, and so compromises had to be made to achieve the best outcome for function and comfort.

PROBLEM SOLVING:

Armed with the information gathered above, it becomes clear why the current system is not working, and now is finally the time to solve the problem!

SLIDING FORWARD IN WHEELCHAIR

Causes: Elio is trying to reach the floor with his feet to propel (seat depth too long, seat-to-floor height does not match lower leg length); non-reducible kyphosis (Elio slides forward to improve line of sight); weakness through core and trunk.

Solutions/Product Parameters: Shorten seat depth; lower finished seat-to-floor height to allow feet on floor; accommodate kyphosis through backrest contour, maintain contact at low back and posterior pelvis and open seat-to-back angle; add tilt to use gravity to hold pelvis back and assist with bringing upper trunk and head upright; four-point belt mounted low on pelvis with downward angle of pull and cushion with ischial well to reduce forward slide; full tray to support weight of arms and allow access to computer while tilted.

FALLING OVER TO HIS RIGHT SIDE

Causes: Right side trunk increased tone; scoliosis is not accommodated or supported at the points of control causing further collapse to right side.

Solutions/Product Parameters: Lateral wedge under cushion, high on the right, to accommodate pelvic obliquity and orient trunk to his left to better center his upper body and head; deep lateral control high on right ribs, lower on left; allow pelvis to shift to right by positioning cushion and pelvic laterals farther to right of midline on the wheelchair seat pan; lateral head support on right side.



FIGURE 4 Elio in new wheelchair with forward pivot tilt for foot propulsion



FIGURE 5 Elio can achieve level gaze, shoulders are level, and head is more midline

ARMED WITH THE INFORMATION GATHERED ABOVE, IT BECOMES CLEAR WHY THE CURRENT SYSTEM IS NOT WORKING, AND NOW IS FINALLY THE TIME TO SOLVE THE PROBLEM!

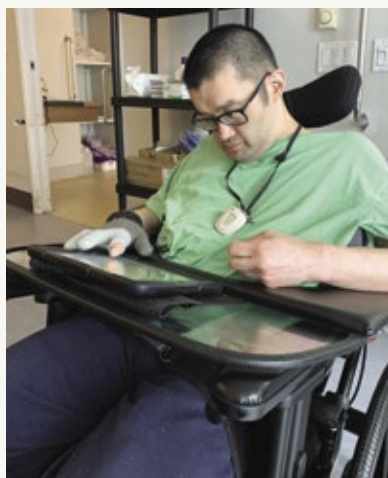


FIGURE 6 Elio can lift his arms without falling over!

AS SHOWN IN THE COMPLETED SET-UP, ELIO IS ABLE TO ACHIEVE A LEVEL GAZE, SHOULDERS ARE CLOSE TO LEVEL AND HIS HEAD IS MUCH MORE MIDLINE. FINALLY, WE CAN SEE HIS SMILE AGAIN!

Once the above parameters were determined, the most difficult problem then became how do we provide this set up in a wheelchair that Elio can still self-propel? We initially tried a manual

tilt wheelchair with a rear-pivot tilt to confirm the benefit of tilt and to observe if Elio could effectively propel with his hands. It quickly became evident that this would not work. Although his initial position was much improved, his impaired arm strength and coordination limited his ability to propel solely with his arms, and he still attempted to reach the floor with his feet, which exacerbated the sliding forward issue.

OUTCOME:

The final solution was a manual wheelchair frame with a forward-pivot tilt so that his feet can stay on the floor with footrests removed (see Figures 4 and 5). The aluminum frame construction makes this wheelchair lighter for Elio to move. Although he is not going far on his own, being able to move short distances within his apartment is still possible. As shown in the completed setup, Elio is able to achieve a level gaze, shoulders are close to level, and his head is much more midline. Finally, we can see his smile again! He is able to lift his arms to use his iPad without falling over (see Figure 6). His coccyx wound has healed, and swallowing is improved. He reports improved comfort and reduced neck and right rib pain.

ONGOING CHALLENGES:

Elio still has a very strong tendency to slide forward and ongoing challenges include ensuring he is positioned all the way back when initially transferred into the wheelchair and then held in place with the pelvic belt tightened sufficiently. He sometimes chooses to undo the pelvic belt. Since his wheelchair is always tilted, he will not fall out of

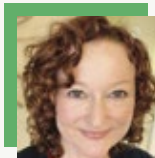
the wheelchair even if he does slide forward. Caregivers check on him hourly and assist him to reposition as needed periodically throughout the day. The priority to maintain independent mobility has resulted in some compromise in postural control, which is understood and accepted by Elio and his team at this time. Elio is continuing to work with specialists to improve access to his iPad and communication software now that his sitting position is improved.

Assisting with Elio's challenges reinforced the value in gathering all relevant information during the assessment process to clearly diagnose the reason the problem is occurring and how that relates to the physical and functional needs of the client, and to avoid jumping to creating solutions too quickly.

CONTACT THE AUTHOR

Lindsay Alford may be reached at LINDSAY@ACCESSTHERAPISTS.COM

Lindsay Alford is an occupational therapist with over 20 years of experience working with individuals with complex seating and mobility needs. She lives in Vancouver, British Columbia, Canada, and works at GF Strong Rehabilitation Centre in the seating service, as well as with Access Community Therapists, which services the local community as well as remote areas of the province. She has presented several times at the International Seating Symposium, provided instruction at the University of British Columbia for occupational therapy master's students and regularly provides workshops for occupational and physical therapists on the topics of seating, mobility and pressure management.



SOMETIMES YOU FIND A CAREER, AND SOMETIMES A CAREER FINDS YOU

FOR LINDA NORTON, IT WAS THE LATTER; AND IT CAUGHT HER BY SURPRISE.

Written by: **DANETTE BAKER**

In the Canadian seating and mobility industry, Linda Norton, M.Sc. CH, Ph.D., OT Reg.(ONT), is synonymous with best practices for treating and preventing pressure injuries in seating and mobility clients. She is an educator in academia and industry, having challenged Ontario's recommended treatment approach for pressure injuries in the late 1990s.

Norton can easily trace back to the moment — she was driving a back road in Ontario, multitasking on a conference call between lectures — when she realized she was the author of the paper being discussed by the meeting participants. For a brief moment, Norton was back at the Canadian Association of Wound Care conference battling unprecedented presentation nerves as she waited to present her paper. "I knew that sharing my findings was going to rock people's world."

Norton's entrance into the seating and mobility industry began a couple of years after earning her bachelor's degree in occupational

therapy. The clinic she managed for individuals with complex needs often received referrals for people with spinal cord injuries who had pressure injuries. They sought a seating system that would allow them to use their wheelchairs instead of adhering to the accepted practice for pressure injury therapy, which required 23 hours a day of bed rest. One of the consulting physicians Norton worked with seemed to have a different outlook on wound prevention and treatment. She later learned the physician was Dr. R. Gary Sibbald, professor of medicine and public health at the University of Toronto, and renowned wound care educator, clinical researcher and key opinion leader. Sibbald is also the



Linda Norton presenting at a conference.

co-founder and course director of the International Interprofessional Wound Care Course (IIWCC). Norton enrolled in the IIWCC as a student at his invitation, where she delved into the current best-practice model of bed rest as an effective treatment for pressure injuries. Her research later led to the Registered Nurses Association of Ontario adopting new best-practice guidelines for treating pressure injuries that no longer included extended bed rest.

"I remember thinking as I listened to the discussion on that conference call that day, 'Wow, if it changed somebody's practice, that's amazing, and that's what I want to do. A patient got different care because of something that I wrote or something that I said, and it helped the clinician challenge their current practices.' That was exciting and something I wanted to continue to do."



Linda Norton working on a wheelchair for a client.

THOSE WHO CAN, TEACH

- Manager of learning and development for Motion, a leading mobility and accessibility solutions provider for clients of all ages, serving Ontario, Alberta, British Columbia and Saskatchewan, Canada.
- Faculty member and co-course coordinator of the University of Toronto accredited International Interprofessional Wound Care Course, a comprehensive educational experience for health care professionals.
- Faculty member Advanced Health Care Practice — Wound Healing program at Western University.

Juggling a full-time role and appointments at two universities can prove challenging, but fortunately, they complement one another and Norton's knowledge of wound care as a clinician, educator, manager and researcher.

At Motion, Norton leads a team that educates its employees as well as therapists, suppliers and clinicians on the company's product lines and related clinical topics. "It's about getting people up, getting them mobile, and getting appropriate seating and mobility," Norton said. "And it's really been a nice tie-in to my occupational therapy and the pressure injury worlds for sure; bringing the rehab perspective into the wound care world and talking about surfaces and seating and some of the things to think about."

LEAN INTO LEARNING

- Undergraduate degree in Occupational Therapy, University of Toronto.
- Master of Science in Community Health, University of Toronto: Thesis — pressure injury prevention and support surface selection.
- Ph.D. in Occupational Science, Western University, Ontario: Dissertation — "How do Health Care Providers Identify and Address Lifestyle Factors with Community Dwelling Adults with Chronic Wounds."

CONTINUED ON PAGE 42



Brian and Linda Norton with their youngest son, Kyle



Linda Norton and her father volunteer together each year at the Edenvale Classic Aircraft Foundation's "Gathering of the Classics" event. [photo credit Larry O'Grady Photography]



Linda Norton presenting at a conference.

"IT'S ABOUT GETTING PEOPLE UP, GETTING THEM MOBILE, AND GETTING APPROPRIATE SEATING AND MOBILITY."



Linda Norton and her husband, Brian, after her PhD graduation ceremony — walking into the future together [photo credit Larry O'Grady Photography]

“WHEN I’M TEACHING, I’M REALLY TRYING TO EQUIP PEOPLE FOR PRACTICING IN THE SWAMP BY SHARING THE BEST-PRACTICES RESEARCH BUT HELPING THEM UNDERSTAND THAT THEY NEED TO APPLY IT TO THE SITUATION THAT THEY’RE IN WITH THAT PARTICULAR CLIENT.”



SOMETIMES YOU FIND A CAREER...
(CONTINUED FROM PAGE 41)

Following her experience at IIWCC, Norton discovered a niche for formal learning, which “came as a total surprise,” she said. Notably, in her master’s work, Norton gained knowledge in three key areas: wound care, public health and health policy. The latter, she said, taught her how to think politically, better understand the systems governing the rehabilitation and health industries, and how to foster change.

CLINICAL PRACTICE HAPPENS ‘IN THE SWAMP’

The work by Donald Schoen, who was an education philosopher, heavily influences Norton’s teaching philosophy.

Schoen compares the academic textbook knowledge to the reality of a clinical practice “in the swamp” — pitting the learned research theories and the controlled environments of research against external factors that you may or may not have control over.

“When I’m teaching, I’m really trying to equip people for practicing in the swamp by sharing the best-practices research but helping them understand that they need to apply it to the situation that they’re in with that particular client.”

ONLY 24 HOURS IN THE DAY

Norton gives new meaning to “all in a day’s work.” She completed her Ph.D. while working full time and teaching at the university, “so I’m not sure I’m the best person to talk about a work-life balance,” Norton quips. In addition to her full-time position with Motion and her teaching appointments at IIWCC and the University of Toronto, Norton also is the essential caregiver for her father. How does she manage to do it all and do it well? “For me, the important thing is to focus 100% on what it is that I’m doing at that moment. And then trying to be smart about the way I work.”

“If I’m reading an article, you’ll often find it in a lecture, or it might appear later in a reference with our Motion team. I try to spread my learnings and expertise around different areas to use one thing in more than one way.”

Her other advice on work-life balance, Norton credits to the airline industry: “Put on your oxygen mask first.”

GUILTY PLEASURES AND GROWING PAINS

- Music, movies, golf, books and podcasts
- Reflecting on and challenging one’s thinking

Norton’s love of music led her to the prized Vantage guitar she purchased at Steve’s Music on Queen Street in Toronto. “I bought it before I learned to play, so I made the guy play a whole host of different guitars and selected mine because of the mellow, rich, warm tones it produced.”

Norton also enjoys an evening watching movies with her husband, and she joined a book club and is currently reading "Educated" by Tara Westover. "I like reading things that cause me to think differently. She tells a really good story that's provided me with a lot of reflection points."

Norton also finds challenges in Brené Brown's "Unlocking Us" podcast. A recent episode featuring Sonya Renee Taylor, author of "The Body is Not an Apology," was particularly poignant, Norton said.

IF I WON THE LOTTERY:

"I would still be here doing what I do because I believe in bringing knowledge to people in a way that they can use it. At Motion, through teaching our staff and clinicians or through the work I do at the university, it's about being able to spark people's interest and ignite their enthusiasm and passion around doing the right things for their patients.

"That's what brings me joy."

CONTACT

Contact Linda at
LINDA.NORTON@MOTIONCARES.CA.

Linda Norton, M.Sc.CH, Ph.D., OT Reg.(ONT) is the manager of learning and development for Motion, a leading mobility and accessibility solutions provider serving clients of all ages in Ontario, Alberta, British Columbia and Saskatchewan, Canada. Additionally, she is on faculty at the International Interprofessional Wound Care Course and Western University's Advanced Health Care Practice-Wound Healing program. She also serves on the board for

NRRTS Canada and the Canadian Pressure Injury Advisory Panel, an interprofessional representation of sectors of the health care community to address the issue of pressure injuries in the Canadian population.



MEET YOUR BOARD AND STAFF

NRRTS BOARD MEMBERS

PRESIDENT - Gerry Dickerson, ATP, CRTS®
PAST-PRESIDENT - Elaine Stewart, ATP, CRTS®
VICE PRESIDENT - Carey Britton, ATP/SMS, CRTS®
SECRETARY - Tom Simon, ATP, CRTS®
TREASURER - Mike Osborn, ATP, CRTS®
REVIEW CHAIR, DMAC A - Mike Harris, ATP, CRTS®
REVIEW CHAIR, DMAC B - Doug Crana, ATP, CRTS®
REVIEW CHAIR, DMAC C - Mike Seidel, ATP, CRTS®
REVIEW CHAIR, DMAC D - Andrea Madsen, ATP, CRTS®
AT LARGE DIRECTOR - Tim Robinson, ATP/SMS, CRTS®
AT LARGE DIRECTOR - Jason Kelln, ATP, CRTS®
AT LARGE DIRECTOR - David Nix, ATP, CRTS®
AT LARGE DIRECTOR - Robert Harry, ATP/SMS, CRTS®
AT LARGE DIRECTOR - Toby Bergantino, ATP, CRTS®

ADVISORY COMMITTEE

MICHELE GUNN, ATP, CRTS® - Past President
JOHN ZONA, ATP, CRTS® - Past President
DENISE HARMON, ATP, CRTS® - Past President
MIKE BARNER, ATP, CRTS® - Past President

CANADIAN ADVISORY COMMITTEE

SHEILA BUCK, B.SC.(OT), REG. (ONT.)
STEVE CRANNA
MICHELLE HARVEY, BSC HONS OT
MIKE LONGO
LINDA NORTON, M.SC.CH, PHD, OT REG. (ONT.)
JASON KELLN, ATP, CRTS®

NRRTS STAFF MEMBERS

EXECUTIVE DIRECTOR – Weesie Walker, ATP/SMS
DIRECTOR OF OPERATIONS – Amy Odom, BS
DIRECTOR OF EDUCATION – Annette Hodges, MA, BS
DIRECTOR OF MARKETING – Bill Noelting
CONTINUING EDUCATION CURRICULUM COORDINATOR –
Michelle L. Lange, OTR/L, ABDA, ATP/SMS
CONSUMER RELATIONS & ADVOCACY – Andrew Davis



WHAT IS A COMPLEX REHAB TECHNOLOGY SUPPLIER?

Written by: WEESIE WALKER, ATP/SMS, EXECUTIVE DIRECTOR OF NRRTS

Have you ever tried to answer the question, "What do you do for a living?" in a single sentence reply?

"I sell medical equipment." That is a true statement, but it does not convey at all the breadth of service involved in Complex Rehab Technology (CRT).

"I provide custom seating and mobility." Okay, that covers it better, but only if the person knows what that means.

"I work with people with disabilities who rely on assistive technology to meet their medical and functional needs." Again, most people are not familiar with the term "assistive technology."

"I provide custom wheelchairs and positioning systems." Most will not have a clue what that means.

You are getting my drift.

There is no easy way to describe the CRT supplier role. At a NRRTS Board retreat several years ago, the task was to create an elevator spiel that would clearly

explain this fascinating occupation. It was not possible. You just can't describe in one sentence.

You can describe CRT: Individually configured mobility and positioning system that is determined by clinical physical assessment with input from the client.

Describing the role of the supplier requires more than one sentence. The CRT supplier is an integral part of the evaluating team who offers technology recommendations and solutions. Once all the decisions have been reached, the supplier must oversee submitting documentation to secure funding. When funding is approved, the supplier must oversee ordering of all components; oversee assembly of the mobility and positioning system; and last, but not least, provide fitting and training on proper use of this system.

But wait, there is more! The supplier provides follow-up to address changes, growth, issues and modification to the system. This is a very important aspect of the supplier role. Follow-up is key to the best outcome for the client.

Here is the point, you just can't describe it in one sentence. The supplier's role is multifaceted and requires not only knowledge but also a tremendous amount of skill to provide a comfortable and functional system.

Next time someone asks you what you do for a living, send them to www.nrnts.org.

CONTACT THE AUTHOR

Weesie may be reached at WWALKER@NRRTS.ORG

DESCRIBING THE ROLE OF THE SUPPLIER REQUIRES MORE THAN ONE SENTENCE. THE CRT SUPPLIER IS AN INTEGRAL PART OF THE EVALUATING TEAM WHO OFFERS TECHNOLOGY RECOMMENDATIONS AND SOLUTIONS.



Weesie Walker, ATP/SMS, is the executive director of NRRTS. She has more than 25 years of experience as a CRT supplier. She has served on the board of directors for NRRTS and GAMES and RESNA's professional standards board. Throughout her career, Walker has worked to advocate for professional suppliers and the consumers they serve. She has presented at the Canadian Seating Symposium, RESNA Conference, AOTA Conference, Medtrade, ISS and the NSM Symposium. Walker is a NRRTS Fellow.

Performance

worthy of a standing ovation

Group 3

POWER WHEELCHAIR

The new **Invacare® AVIVA™ FX - MPS Maxx Multi-Position Power Standing System** is **NOW available through Motion Concepts!**

This innovative, highly adjustable system incorporates power standing and a full range of power positioning features in a package that offers a unique combination of independence, functionality and accessibility.

- ▶ 45° CG Tilt
- ▶ 170° of Recline/ESR
- ▶ 7" Seat Elevation
- ▶ 178° Open Angle Standing Function
- ▶ Matrx® Seating Solutions
- ▶ Invacare® G-Trac® Technology
- ▶ Invacare® 4Sure™ Suspension



Call to order

888.433.6818

motionconcepts.com





PAY IT FORWARD: ATP SURVEY COMING SOON

Written by: JULIE PIRIANO, PT, ATP/SMS AND CHAIR, PROFESSIONAL STANDARDS BOARD

How often can you say you helped define a profession? I get to say I have done it twice and enjoyed it immensely! The Professional Standards Board (PSB) of RESNA conducts a regular job task analysis to identify the core competencies of assistive technology (AT) professionals and assess the knowledge, skills and abilities required to perform those tasks. RESNA's Job Task Analysis (JTA) is the largest research project worldwide related to the body of knowledge for assistive technology. The results of this study are used to verify and update the content to the Assistive technology professional (ATP) certification examination blueprint, the pre-requisites to sit for it and the continuing education requirements to maintain it.

The JTA research process incorporates a multimethod approach that involves numerous subject matter experts, an analysis of trends in our profession, a review of current literature and a large-scale survey of AT professionals across all practice settings, service delivery models and AT solutions. The full process takes the PSB about a year to complete and defines current practice and emerging trends in AT.

I served as a member of JTA Taskforce panel in 2014. Back then we spent two days locked in a room debating the future of our profession; where we saw emerging trends; how we thought technology would enhance the lives of our clients and the scope of knowledge and skills of the professionals involved. Now it is 2021 and I could not have imagined that we would be engaging in this important work with an entirely virtual JTA panel or that this group of individuals spread across the country could rally as a community to have the thoughtful conversation once again about the future of our profession. Our industry has come so far in the past six years,

and I am already inspired by the deliberative discussion the PSB and JTA Taskforce have had to build a body of knowledge that will hold its relevancy for years to come.

OUR INDUSTRY HAS COME SO FAR IN THE PAST SIX YEARS, AND I AM ALREADY INSPIRED BY THE DELIBERATIVE DISCUSSION THE PSB AND JTA TASKFORCE HAVE HAD TO BUILD A BODY OF KNOWLEDGE THAT WILL HOLD ITS RELEVANCY FOR YEARS TO COME.

CALL TO ACTION

But we need your help. We are launching the survey component of the JTA later this fall. If you work in AT, we want your input! The purpose of the large-scale survey is to review the work of the JTA Taskforce, to identify tasks and knowledge that accurately reflect the role of assistive technology professionals and to develop the specifications of the ATP certification program.

During the past year, our industry has had to rapidly adapt like so many others to the day-to-day shifts in our personal lives and professional practices due to COVID-19. We have gained tremendous resilience and practical experience that may differ from what we have always done that are critical to capture, so now is the perfect time for our industry to step back, reflect and map out our future.

Remember to keep an eye out for the survey later this fall and tell RESNA about your role in AT. The survey will be widely promoted. Help us prepare and advance the next generation of ATPs.

CONTACT THE AUTHOR

Julie may be reached at
JPIRIANO@QUANTUMREHAB.COM

Julie Piriano, PT, ATP/SMS is vice president of Clinical Education, Rehab Industry Affairs and a compliance officer at Pride Mobility Products. Piriano has been a member of RESNA for over 20 years and is an active participant in the Wheeled Mobility and Seating SIG and the PT PSG, as well as chairwoman of the Professional Standards Board. She is a Friend of NRRTS, a member of the AAHomecare Complex Rehab and Mobility Council, serves on the NCART Medicaid Committee and the User's First Alliance Advisory Board. Piriano is a highly proactive industry resource on legislative and regulatory



issues that impact the complex rehab industry and is actively involved with the coverage, coding and standards work groups as part of the Complex Rehab Separate Benefit Initiative.

Little Wave "Arc"



AHEAD OF THE Curve

Center of Gravity is translated for easier tilting

As the child grows, so does the Little Wave Arc

Lightest folding Tilt-In-Space Pediatric wheelchair



1.800.981.1540

www.kimobility.com



QUALIFIED DESIGNATION

Written by: **RANDALL KEITH, RRTS®**

The Canadian delivery system at present does not use or require persons to have a qualified designation such as RRTS®. Funding agencies require funding justifications from usually occupational therapists, physical therapists or physicians to secure the release of funds, but that does not say the individual has specific training in rehab technology. The supplier of such technology or vendor, while having all good intentions of giving assistance, may not have specific education, training or general knowledge to provide the best device and set up for functional use.

Vendors use terms such as rehab consultant or mobility specialist, but these do not relate the actual qualifications of the individual. RRTS® set a baseline for standards and adds reassurance to the client and funding source. Obtaining the RRTS® designation through NRRTS represents a higher commitment as a supplier. The RRTS® designation through NRRTS shows you are a proud a member of this industry, that you have that baseline of knowledge and excellence

and adhere to a set of ethics and standards set by this international organization. It also shows you continue taking continuing education needed for renewal to raise your knowledge and skills, so you may continue to serve your clients in a professional and ethical manner.

If you are interested in contributing a short article or have a question you would like answered in DIRECTIONS Canada, please email Amy Odom at aodom@nrts.org.

CONTACT THE AUTHOR:

Randall may be reached at
RANDALLKEITH@ROGERS.COM

Randall Keith is a professional sales representative with over 40 years of experience specializing in wheelchairs, seating and related durable medical devices. Joining the industry in 1974 with Everest & Jennings CDN Ltd., he has worked with various Canadian and U.S. manufacturers in the development of new and innovative products to help better the lives of people with specific physical needs.

In 1988, he co-founded the Ontario Seating & Mobility Conference in Toronto, which later became the Canadian Seating & Mobility Conference and served on their board for 14 years. Keith moved from manufacturing to vendor sales in 1999, specializing in power mobility and clients with high intensity needs. Keith recently attained his RRTS® designation with NRRTS and is also a certified member of the Canadian Professional Sales Association.

Keith has presented at national conferences in Canada and has received various sales recognition awards. He continues today working



daily, giving mentorship to others, and working with his clients, giving patience and empathy all while working in a team approach to help his clients maintain their independence.

Unbiased
Therapist
Passionate
Experienced
Consumer First
Respected
Best Practice
Advocacy
Seating and
Mobility
Specialist
Serve
Engaged
Educate
Assistive
Technology



Learn more at
www.ClinicianTaskForce.us



Customize The Solution.

Scan to explore Custom Seating Solutions



stealthproducts.com
+1(800) 965 9229



Stealth Products
Solutions For Life

NEW NRRTS REGISTRANTS

Congratulations to the newest NRRTS Registrants. NAMES INCLUDED ARE FROM MARCH 13 THROUGH MAY 7, 2021

Alayna Kollman, RRTS®

Superior Home Health Care
56 Churchill Dr Unit 1-3
Barrie, Ontario L9S0H4
Telephone: 705-722-3376
Registration Date: 04/12/2021

Alicia Lawrence, RRTS®

Lawtons Home Healthcare
90 Main St
Dartmouth, Nova Scotia B2X1R5
Telephone: 902-480-3590
Registration Date: 04/08/2021

Amanda Couper, RRTS®

Motion
1362 Victoria St
Kitchener, Ontario N2B3E2
Telephone: 226-755-3116
Registration Date: 04/12/2021

Andrea Oliphant, ATP, RRTS®

Majors Medical Service
2601 W Mockingbird Ln, Ste 101
Dallas, TX 75235-5630
Telephone: 214-951-9710
Registration Date: 05/05/2021

Blair Gallant, RRTS®

Lawtons Home Healthcare
161 St. Peter's Rd
Charlottetown, Prince Edward Island
C1A5P7
Telephone: 902-566-1043
Registration Date: 03/23/2021

Bradley Dutkowski, RRTS®

Motion
5923 Tecumseh Rd E
Windsor, Ontario N8T1E4
Telephone: 519-996-2715
Registration Date: 03/25/2021

Brian Griffiths, RRTS®

Motion
921 Leathorne St
London, Ontario N5Z3M7
Telephone: 519-685-0400
Registration Date: 03/29/2021

Brian Coady, RRTS®

Embracor Medical
467 Adelaird Savoid Blvd
Dieppe, New Brunswick E1A7E7
Telephone: 506-378-0386
Registration Date: 05/05/2021

Bryce DeBoer, RRTS®

Motion
1346 39 St, North
Lethbridge, Alberta T1H5L8
Telephone: (403) 332-1816
Registration Date: 03/31/2021

Cacee Reuben, RRTS®

National Seating & Mobility, Inc.
3401 N May Ave Ste C
Oklahoma City, OK 73112
Telephone: 405-435-0712
Registration Date: 05/04/2021

Charles Ackerman, ATP, RRTS®

Medequipped
20 Sutin Pl
Spring Valley, NY 10977
Telephone: 845-653-9099
Registration Date: 04/15/2021

Chris Billedeau, RRTS®

Motion
1154 Roland St
Thunder Bay, Ontario P7B5M4
Telephone: 807-622-1877
Registration Date: 03/26/2021

Christopher Kaplar, RRTS®

NSM-Canada
101-8620 Glenlyon Pkwy
Burnaby, British Columbia V5J0B6
Telephone: 250-299-6466
Registration Date: 04/30/2021

Christopher Kelly, RRTS®

Motion
72 Carnforth
Toronto, Ontario M4A2K7
Telephone: 416-741-0400
Registration Date: 03/29/2021

Cory Gladman, RRTS®

Motion
747 Notre Dame Ave
Sudbury, Ontario P3A2T2
Telephone: 705-522-0025
Registration Date: 04/15/2021

Craig Glennie, RRTS®

Island Mediquip
Unit B 2258 Dorman Rd
Nanaimo, British Columbia V9S5G2
Telephone: 250-216-7467
Registration Date: 04/09/2021

Craig MacMillan, RRTS®

Motion
3-211 Pritchard Rd
Hamilton, Ontario L8J0G5
Telephone: 905-529-4838
Registration Date: 04/09/2021

David Farr, RRTS®

Xperience Home Health Care
139 Adelaide St S
London, Ontario N5Z3K7
Telephone: 519-681-2153
Registration Date: 05/06/2021

David Deighton, RRTS®

True North Home Health
465 McNaughton Ave W
Chatham, Ontario N7L4K3
Telephone: (519) 365-9617
Registration Date: 03/24/2021

David Lorenz, RRTS®

NSM-Canada
48 East 6th Ave
Vancouver, British Columbia V5T1J4
Telephone: 604-872-5800
Registration Date: 03/30/2021

David Regnier, RRTS®

Lawtons Home Healthcare
124 Pitt St
Sydney, Nova Scotia B1P5X9
Telephone: 902-578-6415
Registration Date: 04/15/2021

David Manuel, RRTS®

HME Mobility & Accessibility
2657 Wilfert Rd #101
Victoria, British Columbia V9B5Z3
Telephone: 250-580-2464
Registration Date: 04/15/2021

Dearl Scott, RRTS®

Hometown Healthcare
107 E Washington St
Houston, MS 38851
Telephone: 662-456-4630
Registration Date: 04/01/2021

Dimitrios Mallios, RRTS®

Motion
72 Carnforth
Toronto, Ontario M4A2K7
Telephone: (416) 988-2727
Registration Date: 03/25/2021

Dino Padula, RRTS®

NSM-Canada
4-1495 Dilworth Dr
Kelowna, British Columbia V1Y9N5
Telephone: 250-860-9920
Registration Date: 04/27/2021

Edward Lai, RRTS®

NSM-Canada
48 East 6th Ave
Vancouver, British Columbia V5T1J4
Telephone: 604-872-5800
Registration Date: 03/22/2021

Emmanuel Galang, RRTS®

Access Abilities
154 Norseman St
Etobicoke, Ontario L9T7B3
Telephone: 416-237-9654
Registration Date: 04/27/2021

Erin Scott, RRTS®

Motion
921 Leathorne St
London, Ontario N5Z3M7
Telephone: 519-670-9833
Registration Date: 03/25/2021

Garret Ebernicle, ATP, RRTS®

Care Medical of Athens
1242 Prince Ave
Athens, GA 30606
Telephone: 706-286-8565
Registration Date: 04/12/2021

Graham Plant, RRTS®

HME Mobility & Accessibility
2657 Wilfert Rd #101
Victoria, British Columbia V9B5Z3
Telephone: 250-580-2464
Registration Date: 04/12/2021

Greg Thompson, RRTS®

Dura Med Mobility Products Inc.
207 Adelaide St S
London, Ontario N5Z3K7
Telephone: (519) 686-3888
Registration Date: 04/06/2021

Hani Nash, RRTS®

Calgary Coop Home Health Care
9309 Macleod Trail SW
Calgary, Alberta T2J0P6
Telephone: 403-252-2266
Registration Date: 03/23/2021

Ira Wall, RRTS®

Motion
9503 49 Street NW
Edmonton, Alberta T6B2L8
Telephone: 780-468-4002
Registration Date: 04/09/2021

James Larkner, RRTS®

National Seating & Mobility, Inc.
5444 East Ave Unit A
Countryside, IL 60525-3671
Telephone: 630-546-7565
Registration Date: 04/14/2021

James Brett, RRTS®

NSM-Canada
2227 Wilgress Rd Unit 4
Nanaimo, British Columbia V9S4N3
Telephone: 250-751-3735
Registration Date: 04/15/2021

Janice Lewis, RRTS®

Canada Care Medical Inc.
1644 Bank St
Ottawa, Ontario K1V7Y6
Telephone: 613-234-1222
Registration Date: 04/14/2021

Jason Farr, RRTS®
Xperience Home Health Care
139 Adelaide St S
London, Ontario N5Z3K7
Telephone: 519-681-2153
Registration Date: 05/06/2021

Jason Prodan, RRTS®
Amherstburg Home Health
433 Sandwich St South
Amherstburg, ON N9V3K8
Telephone: 519-736-0972
Registration Date: 03/22/2021

Jason Clarke, RRTS®
NSM-Canada
30583 Iron Mills Ct, Unit 150
Abbotsford, British Columbia V2T6J8
Telephone: 604-852-3191
Registration Date: 05/07/2021

Jason Victoria, RRTS®
HME Mobility & Accessibility
4011 Viking Way #130
Richmond, British Columbia V6V2K9
Telephone: 604-374-1666
Registration Date: 04/08/2021

Jean Lefebvre, RRTS®
Motion
3020 Hawthorne Rd #200A
Ottawa, Ontario K1G3J6
Telephone: 613-858-5672
Registration Date: 05/07/2021

Jeff Richards, RRTS®
NSM-Canada
1967 Trans Canada Hwy, Unit 25A
Kamloops, British Columbia V2C4A4
Telephone: 236-425-1235
Registration Date: 04/06/2021

Jeffrey Lang, RRTS®
HME Mobility & Accessibility
4011 Viking Way #130
Richmond, British Columbia V6V2K9
Telephone: 604-821-0075
Registration Date: 04/15/2021

Jeffrey Hansen, RRTS®
NSM-Canada
1495 Dilworth Dr, Unit 4
Kelowna, British Columbia V1Y9N5
Telephone: 250-860-9920
Registration Date: 04/09/2021

Jeffrey Kempel, RRTS®
Motion
1362 Victoria St
Kitchener, Ontario N2B3E2
Telephone: 519-885-3160
Registration Date: 04/13/2021

Jill Arrowsmith, RRTS®
Access Abilities
549 Bronte Rd
Oakville, Ontario L6L6S3
Telephone: 905-825-5335
Registration Date: 04/27/2021

Jody Mair, ATP, RRTS®
Motion
101-8255 North Fraser Way
Burnaby, British Columbia V3N0B9
Telephone: 604-209-4841
Registration Date: 05/07/2021

Joshua Jean, RRTS®
Motion
1154 Roland St
Thunder Bay, Ontario P7B5M4
Telephone: 807-622-1877
Registration Date: 04/12/2021

Joyce Miodownik, PT, ATP, RRTS®
National Seating & Mobility, Inc.
5146 West Hurley Pond Rd
Wall Township, NJ 07727
Telephone: 917-656-7405
Registration Date: 03/25/2021

Juan Carlos Torres, RRTS®
SG Homecare
365 Iowa St
Redlands, CA 92373
Telephone: 909-435-2345
Registration Date: 03/26/2021

Julie Harkness, RRTS®
Motion
3-211 Pritchard Rd
Hamilton, Ontario L8J0G5
Telephone: 905-334-9401
Registration Date: 04/05/2021

Kori McLean, RRTS®
Motion
671 A Great Northern Rd, Unit 2
Sault Ste. Marie, Ontario P6C5X2
Telephone: 705-254-1462
Registration Date: 03/25/2021

Kyle Cruickshank, RRTS®
Island Mediquip
101-750 Enterprise Crescent
Victoria, British Columbia V8Z6R4
Telephone: 250-391-0388
Registration Date: 04/12/2021

Lino Da Silva, RRTS®
True North Home Health
369 Gran Ave West
Chatham, Ontario N7L1C4
Telephone: 519-397-9322
Registration Date: 03/24/2021

Mark Malone, RRTS®
Motion
479 Dundas St W
Belleville, Ontario K8P1B6
Telephone: 613-966-6300
Registration Date: 04/12/2021

Matthew Miller, ATP, CRTS®
Patients Choice LLC
3519 Church St Unit D
Clarkston, GA 30021
Telephone: 478-238-3248
Registration Date: 03/22/2021

Kacey Newman, ATP, RRTS®
SPC Home Medical Equipment
1670 Hwy 51
Ponchatoula, LA 70454-6375
Telephone: 985-386-0102
Registration Date: 04/12/2021

Kate Spurr, RRTS®
Harding Medical
163 Susie Lake Crescent
Halifax, Nova Scotia B3S1C3
Telephone: 902-266-7787
Registration Date: 04/06/2021

Kerry Hart, RRTS®
NSM-Canada
4-1495 Dilworth Dr
Kelowna, British Columbia V1Y9N5
Telephone: 250-860-9920
Registration Date: 05/04/2021

Kevin Percival, RRTS®
Motion
921 Leathorne St
London, Ontario N5Z3M7
Telephone: 519-280-7156
Registration Date: 04/15/2021

Menno Hamm, RRTS®
Motion
1154 Roland St
Thunder Bay, Ontario P7B5M4
Telephone: 807-464-2547
Registration Date: 04/13/2021

Michael Lopezgamez, ATP, RRTS®
National Seating & Mobility, Inc.
8550 N 91st Ave Ste 79
Peoria, AZ 85345-8368
Telephone: 623-486-3588
Registration Date: 04/30/2021

Michele Bechard, RRTS®
Motion
463 St. Clair St
Chatham, Ontario N7I3K6
Telephone: (519) 359-7096
Registration Date: 03/26/2021

Michelle Salt, RRTS®
Calgary Coop Home Health Care
9309 Macleod Trail SW
Calgary, Alberta T2J0P6
Telephone: 403-252-2266
Registration Date: 03/30/2021

Attention All CRT Equipment Providers and Users!

Bills are spreading at the state level that would allow anyone to repair medical equipment. **Say NO!** It is essential that **authorized technicians** perform all equipment repairs—properly.

Non-certified technician tries to replace a wheelchair joystick

Joystick installed improperly, short-circuiting the electronics

Power wheelchair stops working...completely

Wheelchair user is left immobile



If you see this bill, ask your elected officials to remove CRT language.



U.S. ★ REHAB®
A Division of F&G & Associates

NEW NRRTS REGISTRANTS

Mitchell Kraayenbrink, RRTS®

True North Home Health
1139 Confederation St
Sarnia, Ontario N7S3Y5
Telephone: 519-383-9900
Registration Date: 03/24/2021

Morgan Lundquist, RRTS®

Motion
9503 49 Street NW
Edmonton, Alberta T6B2L8
Telephone: 780-886-6655
Registration Date: 04/14/2021

Myles Ferrier, RRTS®

Island Mediquip
#9 204 Island Hwy N
Courtenay, British Columbia V9N3P1
Telephone: 250-871-0366
Registration Date: 04/09/2021

Ness Aguirre, RRTS®

Motion
103-171 Commercial Dr.
Kelowna, British Columbia V1X7W2
Telephone: 250-765-7740
Registration Date: 04/01/2021

Nick Epp-Evans, RRTS®

NSM-Canada
2227 Wilgress Rd Unit 4
Nanaimo, British Columbia V9S4N3
Telephone: 250-751-3735
Registration Date: 04/13/2021

Nicole Thomas, RRTS®

Island Mediquip
1063 Canada Ave
Duncan, British Columbia V9L1V2
Telephone: 250-597-0151
Registration Date: 04/09/2021

Paul Lamothe, RRTS®

Motion
1501 Seymour Street, Unit C
North Bay, Ontario P1B8G2
Telephone: 705-476-6449
Registration Date: 05/07/2021

Paula Branco, RRTS®

Motion
211 Pritchard Rd, Unit 3
Hamilton, Ontario L8J0G5
Telephone: 905-529-4838
Registration Date: 04/13/2021

Phil Hochhausen, RRTS®

Advantage Home Health Solutions
1687 32 Ave NE
Calgary, Alberta T2E7Z5
Telephone: 403-460-5438
Registration Date: 04/12/2021

Raymond Filiatrault, RRTS®

Motion
122 Commerce Park Rd, Unit L
Barrie, Ontario L4N8W8
Telephone: 705-818-1009
Registration Date: 03/30/2021

Richard Demers, RRTS®

Motion
77 Waterloo Rd
Timmins, Ontario P4N8M4
Telephone: 705-360-1941
Registration Date: 04/13/2021

Robert Proracki, RRTS®

Island Mediquip
2258 Dorman Rd
Nanaimo, British Columbia V9S5G2
Telephone: 778-584-4271
Registration Date: 04/15/2021

Roger Grant, RRTS®

Embracor Medical
467 Adelaird Savoid Blvd
Dieppe, New Brunswick E1A7E7
Telephone: 506-377-8223
Registration Date: 04/30/2021

Ryan Warkentin, RRTS®

Motion
2815A Cleveland Ave
Saskatoon, Saskatchewan S7K8G1
Telephone: (306) 242-2804
Registration Date: 03/23/2021

Sarah TenBruggencate, RRTS®

Yurek Pharmacy & Home Healthcare
31 Laing Blvd
St. Thomas, Ontario N5P3Z4
Telephone: 519-637-3003
Registration Date: 03/15/2021

Sarah Stelter-Stirrett, RRTS®

Motion
3110 14th Ave NE, Unit #1-4
Calgary, Alberta T2A6J4
Telephone: 403-390-5560
Registration Date: 04/01/2021

Sean Jones, ATP, CRTS®

Alliance Rehab & Medical Equipment
1763 Larkin Williams Rd
Fenton, MO 63026
Telephone: 314-942-7590
Registration Date: 05/05/2021

Shawn Leger, RRTS®

Tango Medical
355 Elmwood Dr
Moncton, New Brunswick E1A1X6
Telephone: 506-855-8842
Registration Date: 04/05/2021

Shawn Harquail, RRTS®

Restair LTD
110 Plaza Blvd, Suite 5
Dalhousie, New Brunswick E8C2E2
Telephone: (506) 684-2051
Registration Date: 04/01/2021

Sherwin Saylon, RRTS®

Access Abilities
549 Bronte Rd
Oakville, Ontario L6L6S3
Telephone: 905-825-5335
Registration Date: 04/13/2021

Stacey Burnett, RRTS®

Motion
72 Carnforth Rd
Toronto, Ontario M4A2K7
Telephone: 416-436-3661
Registration Date: 03/30/2021

Stefanie Laurence, RRTS®

Motion
202 Sparks Ave
Toronto, Ontario M2H2S4
Telephone: 416-659-6464
Registration Date: 05/06/2021

Stephanie Souilliere, RRTS®

Assist Health Supplies
627 Manitou Rd SE
Manitoba, Alberta T2G4C2
Telephone: (403) 852-4484
Registration Date: 04/14/2021

Steve Hubley, RRTS®

Embracor Medical
121 Ilsley Ave, Unit 101-102
Dartmouth, Nova Scotia B3B1S4
Telephone: 902-482-2300
Registration Date: 03/25/2021

Steven Banh, RRTS®

HME Mobility & Accessibility
2657 Wilfert Rd #101
Victoria, British Columbia V9B5Z3
Telephone: 250-386-0075
Registration Date: 03/25/2021

Stuart Edge, RRTS®

Motion
329 McDonnell St
Peterborough, Ontario K9H2W9
Telephone: 705-742-6185
Registration Date: 04/12/2021

Teresa Pyren, RRTS®

Motion
1362 Victoria St
Kitchener, Ontario N2B3E2
Telephone: 519-885-3160
Registration Date: 04/06/2021

Tina Madigan, RRTS®

Motion
122 Commerce Park Rd, Unit L
Barrie, Ontario L4N8W8
Telephone: 705-727-1009
Registration Date: 04/20/2021

Trevor Gould, RRTS®

Embracor Medical
467 Adelard-Savoie Blvd
Dieppe, New Brunswick E1A7E7
Telephone: 506-382-5780
Registration Date: 04/16/2021

Trish Couch, ATP, CRTS®

National Seating & Mobility, Inc.
3302 Cedardale RD Ste A300
Mt. Vernon, WA 98274-8609
Telephone: 877-339-1234
Registration Date: 05/01/2021

Vanda Obratov, RRTS®

Motion
2130 Dundas St E
Mississauga, Ontario L4X1L9
Telephone: 416-795-2400
Registration Date: 03/26/2021

Victoria Mitchell, RRTS®

Motion
72 Carnforth
Toronto, Ontario M4A2K7
Telephone: 416-459-4133
Registration Date: 03/15/2021

Wesley Greenaway, RRTS®

Motion
211 Pritchard Rd, Unit 3
Hamilton, Ontario L8J0G5
Telephone: 905-529-4838
Registration Date: 04/27/2021

Wesley Dykstra, RRTS®

NSM-Canada
17675 66th Ave #4
Surrey, British Columbia V3S7X1
Telephone: 604-574-5801
Registration Date: 05/07/2021

William Marlatt, RRTS®

Yurek Pharmacy & Home Healthcare
31 Laing Blvd
St. Thomas, Ontario N5P3Z4
Telephone: 519-637-3003
Registration Date: 03/24/2021

William Alex Borthwick, RRTS®

NSM-Canada
2227 Wilgress Rd Unit 4
Nanaimo, British Columbia V9S4N3
Telephone: 250-751-3735
Registration Date: 03/16/2021

William Darcy Bennett, RRTS®

Harding Medical
175 Caledonia Rd Unit 2
Moncton, New Brunswick E1H2E5
Telephone: 506-850-3247
Registration Date: 04/01/2021

Zachary Bennett, RRTS®

Motion
72 Carnforth
Toronto, Ontario M4A2K7
Telephone: 416-751-0400
Registration Date: 03/30/2021

CRTS®

Congratulations to NRRTS Registrants recently awarded the CRTS® credential. A CRTS® receives a lapel pin signifying CRTS® or Certified Rehabilitation Technology Supplier® status and guidelines about the correct use of the credential. NAMES LISTED ARE FROM MARCH 13, 2021 THROUGH MAY 7, 2021.

Doug Ambrusko, ATP, CRTS®

People First Mobility
Buffalo, NY

Justin Harris, ATP, CRTS®

Numotion
Chattanooga, TN

Sean Jones, ATP, CRTS®

Alliance Rehab & Medical Equipment
Fenton, MO

James Wiese, ATP, CRTS®

National Seating & Mobility, Inc.
Longwood, FL

Matthew Miller, ATP, CRTS®

Patients Choice LLC
Clarkston, GA

FORMER NRRTS REGISTRANTS

The NRRTS Board determined RRTS® and CRTS® should know who has maintained his/her registration in NRRTS, and who has not.

NAMES INCLUDED ARE FROM MARCH 13 THROUGH MAY 7, 2021. FOR AN UP-TO-DATE VERIFICATION ON REGISTRANTS, VISIT WWW.NRRTS.ORG, UPDATED DAILY.

George Blaine Singleton, ATP
Asheville, NC

Shad Lofgreen
Alexandria, VA

Charles Mitchell
Dunbar, WV

Orenthal Brown
Sioux Falls, SD

Brian Spiller
Henrico, VA

Brian McGrath
Pittsburgh, PA



KidWalk® connections

Like nothing before it – KidWalk encourages key steps through independent hands-free exploration...supporting vital childhood development.

With KidWalk hands free means holding hands...

See where KidWalk can take your child

PRIME **KidWalk™**
Dynamic Mobility System

ph. 1.800.827.8263 | fax 1.800.800.3355
www.primeengineering.com | info@primeengineering.com

Visit YouTube and type in KidWalk to see our kids developing, learning, and going places.

RENEWED NRRTS REGISTRANTS

The following individuals renewed their registry with NRRTS between March 13 and May 7, 2021.

PLEASE NOTE IF YOU RENEWED AFTER MAY 7, 2021, YOUR NAME WILL APPEAR IN A FUTURE ISSUE OF DIRECTIONS.

IF YOU RENEWED PRIOR TO MARCH 13, YOUR NAME IS IN A PREVIOUS ISSUE OF DIRECTIONS.

FOR AN UP-TO-DATE VERIFICATION ON REGISTRANTS, PLEASE VISIT WWW.NRRTS.ORG, WHICH IS UPDATED DAILY.

Amy Askelson, ATP, CRTS®	Jason Smith, ATP, CRTS®	Pat Soffredine, ATP, CRTS®
Andrew Foster, OTR, ATP, CRTS®	Jason Ray Miller, ATP, CRTS®	Prak Kim, RRTS®
Anne L. Kieschnik, ATP, CRTS®	Jeffrey M. LaRosa, ATP, CRTS®	Randy Schmitt, ATP, CRTS®
Benjamin Paull, RRTS®	Jenifer Johnson, PTA, ATP, RRTS®	Raoul K. Harlan, ATP, CRTS®
Blaine Hunt, ATP/SMS, CRTS®	Jeremy Adkins, BS, ATP, CRTS®	Reggio Blackwell, RRTS®
Bobbi Mackedanz, ATP/SMS, CRTS®	Jerry N. Newman, ATP, CRTS®	Richard Samay, ATP, CRTS®
Brent P. Fadler, ATP, CRTS®	Jerry T. Mitchell, ATP, CRTS®	Richard Walls, ATP, CRTS®
Brian McGuire, ATP, CRTS®	Joe C. Hill, III, ATP, CRTS®	Richard J. Wilwohl, ATP, CRTS®
Brian Littlefield, ATP, CRTS®	John Lanier, ATP, CRTS®	Richard L. Liley, ATP, CRTS®
Chris Thompson, ATP, CRTS®	Jon Starich, ATP, CRTS®	Robert Lees, RRTS®
Christopher Ford, ATP, CRTS®	Joseph Uccello, ATP, CRTS®	Robert Lyles, ATP, CRTS®
Christopher E. Bridgeman, ATP, CRTS®	Justin Horn, ATP, CRTS®	Robert Macko, ATP, CRTS®
Corey Hileman, ATP, CRTS®	Justin Harris, ATP, CRTS®	Ronald Whiting, ATP, CRTS®
Daniel Pino, OTR, ATP, CRTS®	Kalin Omo, ATP, CRTS®	Russell Roggenkamp, ATP, CRTS®
Daniel L. Stephens IV, RRTS®	Katherleen Fallon, ATP, CRTS®	Rustom E. Hallett, ATP, CRTS®
Daniel P. Swain, ATP, CRTS®	Kendall Richards, ATP, CRTS®	Ryan Read, ATP, CRTS®
David Bechtel, RRTS®	Kenneth A. McCallum, ATP, CRTS®	Ryan A. Martin, ATP, CRTS®
David D. Russell, ATP, CRTS®	Kevin Moser, RRTS®	Sabrina Saenz, ATP, CRTS®
Debbie Morgan, ATP, CRTS®	Kevin Jones, MS, ATP, CRTS®	Sara E. Warren, ATP, CRTS®
Denise Wilson, RRTS®	Lance C. Guest, ATP, CRTS®	Sarah Anderson, ATP, CRTS®
Doug Ambrusko, ATP, CRTS®	M. Will Olstad, ATP, CRTS®	Scott Lopez, OTR/L, ATP, CRTS®
Douglas Praytor, ATP, CRTS®	Marc Bailey, RRTS®	Shannon L. Summers, ATP, CRTS®
E. Scott Filion, ATP, CRTS®	Matthew A. Gonzalez, ATP, CRTS®	Sochetra Kong, ATP, RRTS®
Edward B. Homan, ATP, CRTS®	Matthew C. Traynor, ATP/SMS, CRTS®	Stephen A. Frangione, ATP, CRTS®
George A. Turturiello, ATP, CRTS®	Michael Bavaro, ATP, CRTS®	Thomas O. Henley, ATP, CRTS®
Heather Pringle, RRTS®	Michael Hohler, ATP, CRTS®	Valerie A. Pagan, ATP, CRTS®
J. Gregg Blanchard, ATP, CRTS®	Michael Bissonnette, RRTS®	Wayne Gould, ATP, CRTS®
James Hutchinson, ATP, CRTS®	Michael F. Peterlin, ATP, CRTS®	Wayne Van Brocklin, ATP/SMS, CRTS®
James Parnell, ATP, CRTS®	Michele A. Gunn, ATP, CRTS®	Wayne Iba, ATP, CRTS®
James Wiese, ATP, CRTS®	Olga Fomina, ATP, CRTS®	
Jason LaTray, ATP, CRTS®	Pamela Crutchfield, ATP, CRTS®	



BE SURE TO FOLLOW NRRTS ON SOCIAL MEDIA!



YOU NEED TO STAND BEFORE YOU WALK

The FDA has indicated the ability to use a standing device, such as an EasyStand stander, is a prerequisite to use of an exoskeleton walking device.

STANDING CAN:

- Prepare a person for a walking program
- Maintain/improve range of motion
- Maintain/improve bone integrity
- Strengthen cardiovascular system/build endurance
- Ensure the body is able to withstand stresses of standing, and therefore, likely walking

Request an inservice today at easystand.com!

EasyStand
an **AltimateMedical** brand

800.342.8968
easystand.com





5815 82nd Street, Suite 145, Box 317
Lubbock, TX 79424
P > 800.976.7787

PRESORT
MARKETING
STANDARD
US POSTAGE
PAID
LUBBOCK TX
PERMIT #49

FRIENDS OF NRRTS [FONS]

As Corporate Friends of NRRTS, these companies recognize the value of working with NRRTS Registrants and support NRRTS' Mission Statement, Code of Ethics and Standards of Practice.

CHARTER CFONS



CFONS



AFONS

