DIRECTIONS

MULTIJOINT MUSCLE ACTION ON THE PELVIS

IMPACT ON SEATING AND POSITIONING

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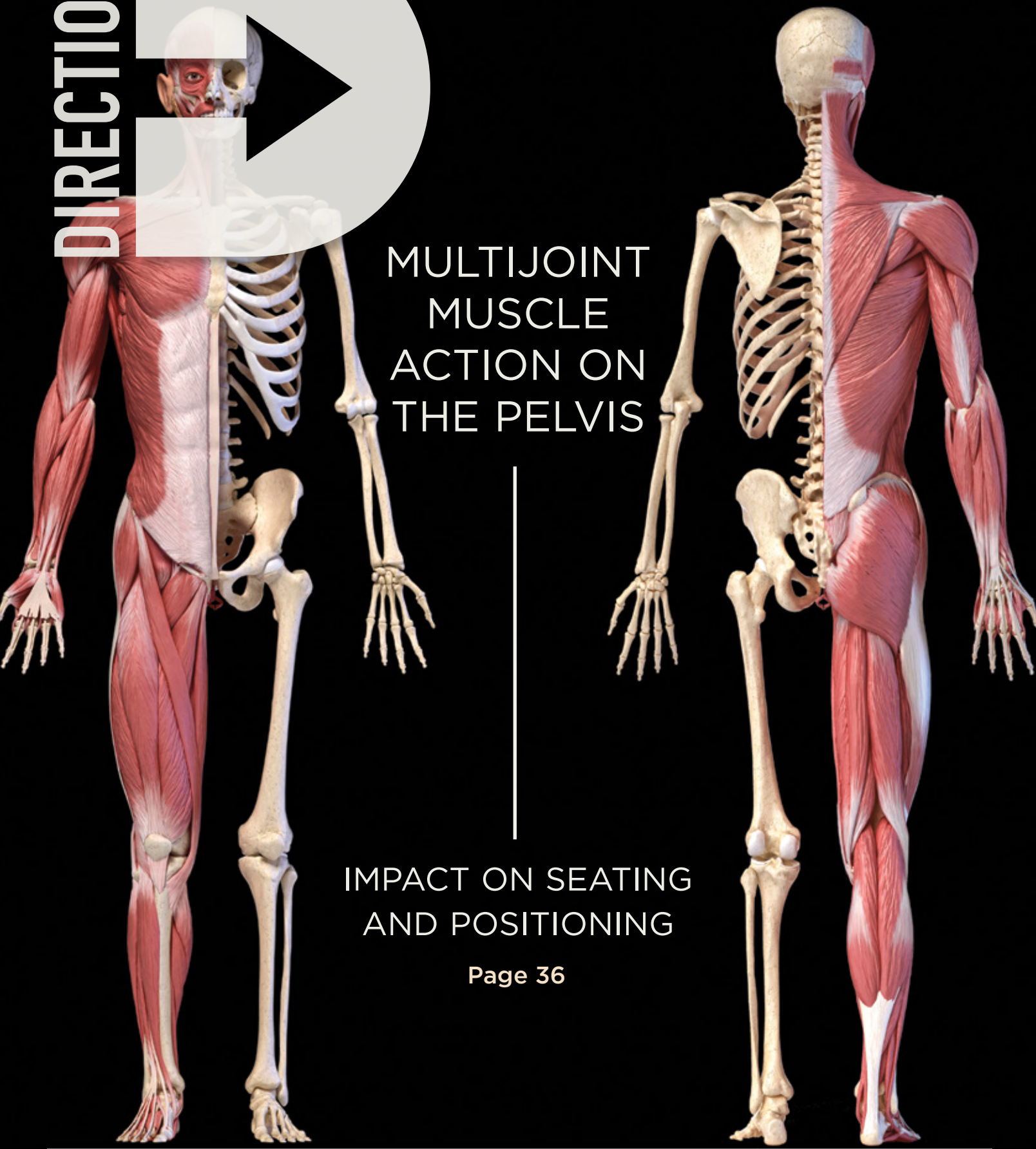

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BRANDON EDMONDSON

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

In the late morning on Saturday, Jan. 11, word began to circulate about a tragedy, that, if true, would impact the Complex Rehab Technology (CRT) community as a whole and would bring profound sadness to Permobil family.

I reached out to my friend, Ginger Walls, to verify that the news was true. As we all know by now it was indeed true. I could feel the heartbreak in Walls' response to me as she confirmed that Brandon Edmondson had died in a motor vehicle accident on Friday, Jan. 10. He was exactly 45 years old; Jan. 10 was his birthday. Edmondson was a loving husband to his wife Tara, a devoted and loving father to their two children, Maddox and Skyler, and a son to his dad William (his mom, Betty, preceded him in death). Edmondson was a man who left countless others heartbroken with his passing.

So, this President's Message is dedicated to Edmondson. We will never understand why such horrible things happen to such good people. It makes you stop and think, if just for a minute, about the things that are important and how very fragile life is.

I reached out to his friends and his family at Permobil and asked them to share their thoughts about him. What follows are those thoughts from the people in the CRT community who cared for him the most:

> "BRANDON WAS A VISIONARY IN OUR INDUSTRY AND WORKED TIRELESSLY TO MAKE US ALL BETTER REHAB PROFESSIONALS. HE WAS HUMBLED TO BE A PART OF AN INDUSTRY THAT MADE A DIFFERENCE FOR THE CONSUMERS WE SERVED

"Brandon was one of the most gifted rehab professionals I have ever met, but you would never know he was the smartest guy in the room. He was so humble, compassionate and always focused on helping people. His handprints are all over the industry, and his impact will be everlasting. Permobil lost a cherished family member, and we will miss him dearly." Todd Walling, senior vice president of sales, Business Region Americas

> "HIS CALMING DEMEANOR PROVIDED PEOPLE WITH A LEVEL OF COMFORT WHEN THEY WERE DEALING WITH SOME OF THE MOST TECHNICALLY ADVANCED EQUIPMENT IN THE INDUSTRY, AND HE WAS ALWAYS LOOKING AT WAYS TO MAKE THAT EQUIPMENT BETTER FOR THE PEOPLE WE ALL SERVE."

"Brandon was a visionary in our industry and worked tirelessly to make us all better rehab professionals. He was humbled to be a part of an industry that made a difference for the consumers we serve. Brandon was a clinician, ATP, educator, husband, father and friend and excelled at them all. Brandon's bright light will always shine in me!" Joe Kelly, regional vice president of sales, Eastern Region

"Brandon truly cared about and supported each of his employees. Cultivating a positive and fun work culture was of paramount importance to Brandon. He understood that the best performance comes from a work team that operates like a family." Eleni Halkiotis, MOT, OTR/L, ATP, regional clinical education manager

"As someone who had a very short time knowing Brandon but long enough to see how much energy and passion he emitted to everyone and everything he was involved in, the only words that come to mind for me when I think of Brandon is, "Supernova." I wish I had more time to learn from him, laugh with him, and hopefully give back to him a fraction of what he gave." Catherine Sweeney, PT, ATP/SMS, regional clinical education manager

"Brandon's easy manner and confidence made even complicated concepts seem simple. He was brilliant and funny, and he was passionate about advancing practice and technology to improve the lives of people with disabilities. He was devoted to his family, beloved by his friends and will be missed by all. His legacy is to call us to his high standards." Ginger Walls, PT, NCS, MS, ATP/SMS, regional clinical education manager

"To state the obvious, Brandon is a special person. He's the kind of guy whose knowledge of the industry and products was amazing, but it was dwarfed by his kindness and personality. His calming demeanor provided people with a level of comfort when they were dealing with some of the most technically advanced equipment in the industry, and he was always looking at ways to make that equipment better for the people we all serve. He had a way of making people feel like they

were as smart and as capable as him. The industry was privileged and better to have him while we did, and he had an impact that will last. We should all hope to leave a mark the way he did." David Pietrzak, ATP, vice president, supply chain and vendor management, National Seating & Mobility

The Permobil Foundation has established a memorial fund in honor of Brandon to support his children's college education. If interested in contributing, please visit https://bit.ly/38zM1Io

Please continue to keep Brandon's family and friends in your thoughts and prayers.

Rest in the sweetest peace, Brandon.

Until the next time,

Gerry

CONTACT THE AUTHOR
Gerry may be reached at GDCRTS@GMAIL.COM

Gerry Dickerson, ATP, CRTS®, is a 40-plus year veteran of the Durable Medical Equipment and Complex Rehab Technology 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 the National CRT Conference and is a past board member of NCART.

LET'S GET UNIVERSAL!

Written by: **ROSA WALSTON LATIMER**

For as long as she can remember, 23-year-old Lauren Taylor has been advocating for others with disabilities. At the age of 3, Taylor participated in a study focusing on young children using power wheelchairs. "It seems all of my life this has been my purpose. Even when I wasn't fully aware of exactly what I was doing, I was an advocate," Taylor said. "I was diagnosed with muscular dystrophy when I was 1 year old. When I was 3, I participated in a national study to support insurance approval for power chairs for young children. A video of me perfectly operating a power chair was used to help document that young children were cognitively able to operate power chairs."

> "I WAS UNHAPPY BECAUSE I COULDN'T ENJOY MUCH OF THE PLAYGROUND. I KNEW THAT I WANTED CHANGES, BUT I DIDN'T KNOW HOW TO HAVE A VOICE IN THE SITUATION. MY PARENTS WERE SUPPORTIVE, LED THE WAY, AND TAUGHT ME HOW TO ADVOCATE FOR MY NEEDS AND THE NEEDS OF OTHERS."

In elementary school, Taylor and her parents were successful in convincing her school to make the playground accessible. "I was unhappy because I couldn't enjoy much of the playground. I knew that I wanted changes, but I didn't know how to have a voice in the situation. My parents were supportive, led the way, and taught me how to advocate for my needs and the needs of others."

Taylor's future very much includes continuing to advocate for those with disabilities and helping them adjust to a world that isn't always easy to navigate. She earned her undergraduate degree in rehabilitation studies from the University of North Texas (UNT) in Denton, Texas, and is now pursuing a master's degree in rehabilitation counseling. "I'll complete my master's in May 2021 and will be a licensed professional counselor and certified rehabilitation counselor," Taylor said. "My career goal is to be a counselor, a talk therapist, working primarily with people with physical disabilities. Very rarely does someone with a physical disability have access to a counselor who also has a physical disability. I also want to develop a career as a public speaker to broaden the influence of my advocacy."

In addition to pursuing her master's degree, Taylor works part time as the youth transition specialist with the REACH (www.reachcils.org) in Denton. "I work with high school kids who have disabilities to transition into life after high school," Taylor said. "This is an important time in the students' lives, and I love having this opportunity to help them move forward and achieve their goals. Navigating adulthood is a challenge, but it is so much more complex as a person with a disability. For example, I work and earn my own money, but if I have over a certain amount as an asset, I lose my Medicaid benefits. Even marriage can be a barrier to people with disabilities because once you combine your income with another's, it is usually over the asset limit as well, resulting in loss of benefits. As I learn how to handle difficult situations, I look forward to sharing my experiences with others. I think of this as a ripple effect continuing to radiate from the many people and events who had a positive impact on my life."

"Visits to a barrier-free camp each summer were a huge part of my self-acceptance and shaped my development as a human being," Taylor said. "At Camp John Marc near Meridian, Texas, I could zip line, fish, learn archery – I could try anything I wanted. At a very young age, I began to realize the many possibilities for my future."

Another experience that helped Taylor gain self-confidence was learning to play wheelchair power hockey when she was in elementary school. "I didn't know how to play hockey, but I met a group of guys who all used power chairs and got together every couple of weeks to play. Even though they were older than me, they were patient and taught me the game. I loved it, and before long, I was just as good as they were!"

Lauren Taylor, keynote speaker at ADA29 Rally, celebrating the 29th anniversary of ADA.

In school, Taylor discovered a passion for singing and participated in choir through middle school and high school. "I loved singing, and the choir members and directors were like a family to me. Singing was something I could do well, and my disability didn't limit me. Choir was my place to go where I felt comfortable. It became my haven." Although Taylor no longer participates in organized choir activities, she continues to enjoy singing and often performs the national anthem before special events.

"The day I found the Department of Rehabilitation and Health Services at the University of North Texas was the pivotal point in my life that set me in the right direction to solidify my life goals," Taylor said. "The department is all disabilities, all the time. My professors are outstanding. This is where I belonged. I learned so much, including universal design."

Universal design is the design of an environment in a way that is usable by people with and without disabilities at the same time. "A ramp works for everyone whether you use your legs or your wheels, but not everyone can climb stairs," Taylor said. "So why not incorporate ramps in a building design rather than stairs? With this approach, you would not have to make accommodations for people with disabilities; the building would be accessible to everyone. I take every opportunity to talk about universal design, hoping to bring more people into the conversation."

Taylor doesn't just talk about universal design; she is actively involved in bringing universal design to the UNT campus. "I was an accessibility consultant with the university to help make all classrooms accessible," Taylor said. "While I was an undergrad, I designed an accessible desk that fits into a track on the floor of a classroom so it cannot be moved. A person who

Lauren Taylor, Ms. Wheelchair Texas 2019, with her service dog, Buchanan.

"THE DAY I FOUND THE DEPARTMENT OF REHABILITATION AND HEALTH SERVICES AT THE UNIVERSITY OF NORTH TEXAS WAS THE PIVOTAL POINT IN MY LIFE THAT SET ME IN THE RIGHT DIRECTION TO SOLIDIFY MY LIFE GOALS," TAYLOR SAID. "THE DEPARTMENT IS ALL DISABILITIES, ALL THE TIME. MY PROFESSORS ARE OUTSTANDING. THIS IS WHERE I BELONGED. I LEARNED SO MUCH, INCLUDING UNIVERSAL DESIGN."

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LET'S GET UNIVERSAL!
(CONTINUED FROM PAGE 9)

doesn't have a disability might not realize the difficulty a student experiences of requesting an accessible desk in a classroom. It feels good to be a part of something that has the potential to impact future UNT students with disabilities in a positive way."

Her service dog is a vital part of Taylor's life. "Buchanan is a 6-year-old Lab/Golden Retriever mix, and he is with me all the time. We do a lot of advocating together," Taylor said. "I was matched with Buchanan through Canine Companions for Independence (www.cci.org/). During team training, Buchanan was the dog I wanted the least. He was sort of goofy looking, not one of the prettiest dogs. However, he was so intuitive with me that he ended up being my perfect match. Buchanan is my very best friend and does things I physically cannot do, such as open and close doors and flip light switches. He even helps with the laundry."

Buchanan and Taylor often represent Canine Companions for Independence by making presentations on subjects such as service dog fraud and service dog etiquette. Taylor also works with Camp Craig Allen, a nonprofit that promotes advocacy and independence for those with physical disabilities and plans to build a universally designed, barrier-free facility. She also volunteers regularly with To Be Like Me, a disabilities awareness group that provides children with interactive experiences focusing on awareness of different abilities.

Certainly, Buchanan was at Taylor's side when she was selected Ms. Wheelchair Texas 2019. "Many friends who are past titleholders encouraged me to run for Ms. Wheelchair Texas, and the year after I received my undergraduate degree, I submitted my application," Taylor said. "This competition is important to me

Lauren Taylor staffs the Ms. Wheelchair Texas booth at the annual Camp Craig Allen BBQ Fundraiser.

Lauren Taylor adding her signature to the "Inclusion for All" banner at Morgan's Wonderland for the 2019 Special Olympics.

> "EVEN THOUGH I HAVE AN OUTGOING PERSONALITY, THE RESPONSIBILITY FOR SETTING UP SPEAKING OPPORTUNITIES AND FOR RAISING FUNDS TO COVER MY EXPENSES PUSHED ME A LITTLE BEYOND MY COMFORT ZONE. HOWEVER, I EXPERIENCED PERSONAL GROWTH THAT WILL HAVE A POSITIVE INFLUENCE IN ALL AREAS OF MY LIFE."

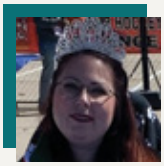
because both the state and national events support an advocacy platform. It is not a beauty pageant, despite the impression made by the sash and a crown. Of course, my advocacy platform is universal design for inclusion."

After being chosen as the Texas representative, Taylor attended the national event in Little Rock, Arkansas. Her tenure as Ms. Wheelchair Texas ended in February 2020; however, the experience will have a lasting impact on Taylor. "It was a great year! The title greatly increased my opportunities to share ideas about universal design and to advocate for people with disabilities," Taylor said. "Even though I have an outgoing personality, the responsibility for setting up speaking opportunities and for raising funds to cover my expenses pushed me a little beyond my comfort zone. However, I experienced personal growth that will have a positive influence in all areas of my life." Taylor recalled some wise words from a previous Ms. Wheelchair titleholder who told her: "If you win, take every single opportunity that comes your way. You never know what door may open for you." Taylor took that advice to heart not only throughout her year as Ms. Wheelchair Texas, but she also continues to apply a receptive attitude to life in general. "The experience of serving as Ms. Wheelchair Texas gave me a stronger presence and reinforced my commitment to advocacy," Taylor said. "I am very thankful that door opened for me."

CONTACT
Taylor may be reached at MWTX2019@GMAIL.COM

Ms. Wheelchair Texas Lauren Taylor speaking at the 2019 National Ms. Wheelchair event.

Lauren Taylor singing the national anthem to open the annual MDA Muscle Walk.



Lauren Taylor is a consumer advocate who resides in Texas.

IT STARTS WITH THE SEAT

Written by: **ROSA WALSTON LATIMER**

When DIRECTIONS spoke with Judy Rowley, vice president of Matrx Seating with Motion Concepts, for this interview, she and her husband, Mike Rowley, had just returned from a vacation in Hawaii. "This was our first trip to Hawaii. We visited the islands of Kauai and Maui," Rowley said. "It was beautiful, and the weather was perfect. We spent a great deal of time hiking and enjoying nature, things we both enjoy."

IT APPEARS IT WAS A GOOD TIME FOR YOU TO ENJOY SOME VACATION TIME AS YOU ARE PREPARING FOR A SIGNIFICANT PRODUCT LAUNCH SOON. WOULD YOU TELL US ABOUT THAT?

I'm not sure the timing of my vacation was the best, but I really enjoyed it! We have been very busy for some time now preparing for a big Matrx Seating product launch. Fifteen years ago, we introduced the Elite series of Matrx backs, and now we are introducing the next generation. We will roll out over 100 new models of Matrx backs at the International Seating Symposium (ISS) in Vancouver (March 2020). We have never done anything quite like this before. Typically, we would put out a few models and then add more over time. This is one big product launch with all new models and features — all at once! It is an exciting project, but it is huge. The new Matrx Elite E2 series backs will have all the features that everyone relies on and expects, but we have added some exciting new features and options that take the backs to a whole new level.

> "I HAD TAKEN A SHORT BREAK FROM THE INDUSTRY WHEN MOTION CONCEPTS ASKED ME IF I WOULD BE INTERESTED IN DEVELOPING A LINE OF CUSHIONS AND BACKS. I SAID, 'YES!' AND I'VE BEEN WITH THEM EVER SINCE.

THAT IS AN EXCITING EVENT IN YOUR CAREER AT MOTION CONCEPTS AND FOR OUR INDUSTRY. HOW LONG HAVE YOU BEEN WITH THE COMPANY, AND WHAT ARE YOUR PRIMARY RESPONSIBILITIES?

I've been with Motion Concepts since 2003, which was the inception of the Matrx Seating line. Motion Concepts originally specialized in power positioning products that interfaced with a wide variety of manufacturers' power bases. They were interested in developing seating to complement their power positioning products. I had taken a short break from the industry when Motion Concepts asked me if I would be interested in developing a line of cushions and backs. I said, 'Yes!' and I've been with them ever since.

One year later, Invacare acquired Motion Concepts. Now, in addition to my responsibilities as the vice president of Matrx Seating, I also have the parallel responsibility as director of global product development for Invacare seating and positioning products.

My daily responsibilities at Motion Concepts include everything relating to the Matrx Seating line: product development, sales, marketing, developing educational materials and market development globally. We are now selling all around the world, including Canada, the United States, Europe, Australia, New Zealand, Latin America, and Africa. It is demanding, but I feel so lucky to have a job that I really, truly love.

I work directly with Clinical Educators in the United States and Canada, and a product manager in Europe. Day-to-day I work with a great Motion Concepts team here in Toronto – engineers, designers, customer service and marketing.

NOW, WOULD YOU TAKE US BACK TO THE BEGINNING OF THIS JOURNEY AND TELL US HOW YOU GOT STARTED IN THIS INDUSTRY?

After I graduated as an occupational therapist in 1982, I worked for a few years as a clinical occupational therapist. Then I accepted a job as a sales representative in the Toronto area for a provider. That's when I began to learn the equipment side of the industry, and immediately I loved working in the field of seating and mobility. I worked as a provider sales rep for about four years. During that

Judy and Mike Rowley hiking in Hawaii.

> "THAT ONE CHOICE I MADE IN THE MID-1980s TO LEAVE THE CLINICAL SETTING AND GO INTO THE WORLD OF EQUIPMENT CHANGED MY ENTIRE CAREER PATH IN A POSITIVE WAY. AS SOON AS I MADE THAT CHANGE, I KNEW I HAD FOUND MY PLACE."

Judy Rowley's children: Jeff, Jaclyn, and Brad Rowley.

time, I began to work more with a Canadian company called Special Health Systems (SHS) that produced a line of seating, cushions and backs. Eventually, they hired me to do education and sales in the Province of Ontario and the Maritimes. I was with SHS for about 10 years and, after Invacare acquired SHS, I was the product manager for seating at Invacare before accepting the job with Motion Concepts.

That one choice I made in the mid-1980s to leave the clinical setting and go into the world of equipment changed my entire career path in a positive way. As soon as I made that change, I knew I had found my place.

HOW HAVE YOU MAINTAINED YOUR ENTHUSIASM FOR YOUR WORK? WHAT IS MOST REWARDING?

I firmly believe that 'it starts with the seat' and putting that belief into action is extremely rewarding. Some consider cushions and backs as accessories and may not realize how important these items are. A high-ticket power chair may seem more exciting and important; however, the seating touches the consumer. Of course, it must provide the skin protection they need; it must position them so they can function; but most importantly, the seating has

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IT STARTS WITH THE SEAT
(CONTINUED FROM PAGE 13)

to allow the patient to be comfortable while they sit all day. An individual can't utilize all those mobility bases successfully unless they are seated appropriately.

The most energizing part of my work is being part of a team that develops products that are very important to someone's daily life. It can be challenging but also highly rewarding to champion this product category and make a huge difference in the lives of our customers.

> "OF COURSE, IT MUST PROVIDE THE SKIN PROTECTION THEY NEED; IT MUST POSITION THEM SO THEY CAN FUNCTION; BUT MOST IMPORTANTLY, THE SEATING HAS TO ALLOW THE PATIENT TO BE COMFORTABLE WHILE THEY SIT ALL DAY."

Most of the team members here at Motion Concepts Toronto – customer service, production, product designers, purchasing, documentation, marketing – have been here as long or longer than me. Every single one gives 110% and honestly makes my job easy and keeps me energized. We also have a fantastic U.S. customer service team at Motion Concepts in Buffalo.

I have had the opportunity to travel all around the world and work with some fantastic people, many who have become good friends. There are too many to list, but a couple that deserve special mention are Stephanie Tanguay, our Matrx Seating clinical educator for the United States, and Ivan Samila our Matrx designer. Steph works tirelessly educating and working with clinicians, our sales force and end consumers, and Ivan just keeps those ideas coming to develop new products and evolve the ones we have.

The Matrx team relies so much on clinicians and providers who work with our customers and are dedicated to finding the best products to meet their needs. It is very rewarding when they communicate with us when a product is a success; however, it is just as important and motivating to hear how we can make something better. This participation by clinicians, providers and consumers is an integral part of our product development

Weesie Walker, executive director of NRRTS, and Judy Rowley, vice president of Matrx Seating with Motion Concepts.

Judy Rowley with Allen McKinley and his service dog, Murphy.

Matrx Team at Motion Concepts.

TELL US ABOUT YOUR FAMILY AND WHAT YOU DO IN YOUR LEISURE TIME. HOW DO YOU MAINTAIN A BALANCE WITH YOUR DEMANDING WORK RESPONSIBILITIES?

Mike and I have a daughter, Jaclyn, 28, and twin boys, Brad and Jeff, 26. Even though the kids are grown and out doing their things, they are local, and we get together whenever we can. When I'm not working, I like to go to the gym and exercise. I love going for walks and enjoy hiking. If I get the chance to go to the slopes, I like to go snowboarding, but that isn't very easy to fit in. The International Seating Symposium is held in Vancouver every other year so we established a tradition that after the conference, one of the kids would fly out and meet me to go snowboarding on Whistler Mountain. That is my favorite place to be!

I also love to cook. My kids encourage this. When I have time on the weekend and can spend a few hours cooking, I enjoy serving a meal for friends and family along with a nice glass of wine.

Finding balance with work isn't as challenging now as when the kids were young. Our daughter had just turned 2 years old when we

"THE INTERNATIONAL SEATING SYMPOSIUM IS HELD IN VANCOUVER EVERY OTHER YEAR SO WE ESTABLISHED A TRADITION THAT AFTER THE CONFERENCE, ONE OF THE KIDS WOULD FLY OUT AND MEET ME TO GO SNOWBOARDING ON WHISTLER MOUNTAIN. THAT IS MY FAVORITE PLACE TO BE!"

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IT STARTS WITH THE SEAT
(CONTINUED FROM PAGE 15)

brought the twins home from the hospital. My jobs usually required lots of travel, and those early days weren't easy. Somehow, we made it through those busy years, and we continue to spend a lot of time together as a family.

I have a reputation among colleagues for a different kind of balance. I am a former gymnast, and I can do a cartwheel while holding a glass of wine and not spill the wine. There are some in our industry who may not remember my name, but they remember my "wine" trick!

Even though I have a super busy career with many responsibilities, I feel very lucky to have my Motion family who supports me and helps keep everything in perspective. I am so fortunate to have made friends and colleagues around the world who have a shared passion for the industry that I love.

"EVEN THOUGH I HAVE A SUPER BUSY CAREER WITH MANY RESPONSIBILITIES, I FEEL VERY LUCKY TO HAVE MY MOTION FAMILY WHO SUPPORTS ME AND HELPS KEEP EVERYTHING IN PERSPECTIVE. I AM SO FORTUNATE TO HAVE MADE FRIENDS AND COLLEAGUES AROUND THE WORLD WHO HAVE A SHARED PASSION FOR THE INDUSTRY THAT I LOVE."

Judy Rowley, left, with Brad Rowley and Taylor Hilts snowboarding on Whistler Mountain near Vancounver.

CONTACT
Judy may be reached at
JROWLEY@MOTIONCONCEPTS.COM

Judy Rowley, OT, is vice president of Matrx Seating with Motion Concepts and director of Global Product Development for Invacare seating and positioning products and lives in Canada.

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FOSTERING INCREASED INDEPENDENCE

Written by: **ROSA WALSTON LATIMER**

A knee injury while playing volleyball first drew young Lorri Bernhardt, PT, MPT, ATP, to a career in physical therapy. "My injury required surgery and subsequent physical therapy," Bernhardt said. "I had a couple of false starts with other careers, but ultimately returned to school as a nontraditional, older student of physical therapy at Chapman University in Orange, California." After an internship at Rancho Los Amigos National Rehabilitation Center in Downey, California, Bernhardt worked 17 years in the Neuro outpatient clinic at that facility. "During the last seven years at Rancho, I transitioned exclusively to seating and mobility and discovered a true passion for this area of practice," Bernhardt said.

In 2017, the Bernhardt family – Lorri, along with her husband of 27 years, George, and their daughters, Irene, 15, and Audrey, 13, – moved from Southern California to Pleasant View, Tennessee, near Nashville. "George and I had always dreamed of having some land with animals, but I never thought it would happen," Bernhardt said. "We finally decided to 'just do it,' and we loaded up the truck and moved to Tennessee. You can insert Beverly Hillbilly's music here!"

The family now lives on 6 ½ acres with three horses, 23 chickens, three ducks, 10 bobwhite quail, and a French bulldog named Jewel. "I love being on our minifarm with my family," Bernhardt said. "Irene and Audrey are avid riders and compete with their horses in "hunter/jumper" shows. I ride, too, but just for pleasure."

> "I HAVE HAD THE OPPORTUNITY TO SEE A YOUNG MAN WITH A TRAUMATIC BRAIN INJURY INDEPENDENTLY DRIVE A POWER WHEELCHAIR FOR THE FIRST TIME AND SMILE WHILE HIS FAMILY TAKES VIDEO AND CRIES TEARS OF JOY ..."

The Bernhardts have homeschooled their daughters for the past four years, providing a situation that allows for an opportunity to enjoy many other activities. "The girls love the outdoor life," Bernhardt said. "They care for our animals, enjoy riding, fishing, camping, 4-H activities, and investigating the nearby forest. Irene has won awards for her horse-riding abilities, and Audrey is a great cook and baker. We are active with and enjoy our church family." George, now retired from being on the road as a professional guitarist with musicians such as Rick Springfield, plays with the worship team at church.

"George and I love fly-fishing, camping and the outdoors," Bernhardt said. "Before we had children, we would backpack into the backcountry of California and not see other people for days. Now we enjoy more of a "glamping" style of camping with our daughters. We're fortunate that we can all share this outdoor lifestyle and cherish this time together as we know it goes by fast."

When the family moved to Tennessee, Bernhardt continued her work as a physical therapist at the Phi Beta Phi Rehab Institute Seating and Mobility Clinic at Vanderbilt University Medical Center in Nashville. "I work in a seating and mobility clinic that continues to ignite my passion for learning, to advocate and teach others about seating and mobility and how it can, and does, change lives for the better," Bernhardt said. "I work with such a great team. It's a blessing to work with a great group of people who strive to provide the best care possible." Bernhardt is often asked whether she gets sad working with people with disabilities all the time. "My answer is 'absolutely not.' Actually, I feel the exact opposite!" Bernhardt said. "I have the distinct pleasure of being a part of the team that provides each individual with those things he or she would need to become as independent as possible and participate in the life they want to lead.

"I have had the opportunity to see a young man with a traumatic brain injury independently drive a power wheelchair for the first time and smile while his family takes video and cries tears of joy," Bernhardt continued. "I have also had the opportunity to see a woman of advanced age after a severe stroke, who, while seated in a basic wheelchair, stared silently into her lap light up with a smile when fitted with supportive, customized seating. Experiences such as these are what I get to do when I go to work."

During her 20-year career as a physical therapist, Bernhardt's experiences has helped her cope with many changes and challenges; however, her dedication and optimism keep her focused on the positive difference she can make in the lives of others.

"Anyone who has worked in this area of care knows the continuing difficulties related to the access of the products we provide," Bernhardt said. "Coding, documentation requirements, appeals, reimbursement, timelines — we live this every day. Because we cannot easily make changes to many of these aspects of our work, I believe we need to engage those we serve in other ways, such as providing education to the users of these products. When appropriate,

Lorri Bernhardt PT, MPT, ATP, on her horse, Rita.

Lorri Bernhardt with Berkeley on the family farm in Pleasant View, Tennessee.

The Bernhardt family (l to r) Audrey, George, Irene, and Lorri.

Representing the Clinician Task Force at United Spinal Association's Roll on Capitol Hill 2019: (top row): Lorri Bernhardt, Rep. John Rose (R) TN, Robert Austin, Alison Bowden. (bottom row) Amy Burnett, Wes Bowden.

Lorrri Bernhardt with husband, George Bernhardt, Cascade Valley, California.

we can help our patients understand the changes in the industry and help them realize the opportunities of advocating for themselves directly."

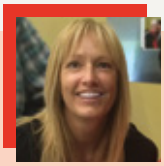
Bernhardt's passion for this area of work continues to grow. She has purposely taken action to expand her participation with organizations that promote increased access and education for mobility devices. "I am on the executive board of the Clinician Task Force and co-chair for the Wheeled Mobility and Seating SIG at RESNA," Bernhardt said. "I also participate as a RESNA liaison to NCART and as a board member of the Tennessee Chapter of the United Spinal Association. I'm also a Friend of NRRTS. These opportunities are important to me and my work as they allow me to grow and learn in so many ways."

Bernhardt's enthusiasm certainly has a positive impact on her patients and colleagues but influences her family as well. "It is such a blessing to see how my small actions in trying to help others have had positive effects on our daughters," Bernhardt said. "The girls have learned what it means to advocate for others. They have watched as I visit with congressional representatives. Through these shared experiences, Irene and Audrey have learned how each person we meet is a special and unique individual – no matter what type of limitation his/her physical body may have."

CONTACT

Lorri may be reached at LORRI.L.BERNHARDT@VUMC.ORG

Lorri Bernhardt, PT, MPT, ATP has 18 years of experience is a physical therapist. She spent 17 years at Rancho Los Amigos Rehabilitation Center in CA where she worked as an outpatient physical therapist. The last seven years at Rancho were dedicated to providing wheelchair and assistive technology assessments in the Seating Center. Bernhardt moved with her family to Nashville, Tenn where she now works in the Seating and Mobility Clinic at the Pi Beta Phi Rehabilitation Institute at Vanderbilt Medical Center. Bernhardt has provided lectures and education to a wide variety of audiences. Bernhardt is the co-chair for the RESNA Wheeled Mobility & Seating SIG, a Friend of NRRTS, a member of the APTA, and a certified ATP.



UPDATED PRESSURE INJURY DEFINITIONS AND STAGING

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

Pressure injury stages are defined and updated by the National Pressure Injury Advisory Panel (NPIAP, formerly National Pressure Ulcer Advisory Panel or NPUAP). The most recent updates occurred during the NPIAP 2016 Staging Consensus Conference in Chicago. These changes updated the previous 2007 NPUAP Staging System. The first staging system was released in 1989.

Pressure injury has replaced terms including pressure wound, pressure ulcer or bed sore. The current NPIAP pressure injury definition is:

> *"A pressure injury is localized damage to the skin and underlying soft tissue usually over a bony prominence or related to a medical or other device. The injury can present as intact skin or an open ulcer and may be painful. The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear. The tolerance of soft tissue for pressure and shear may also be affected by microclimate, nutrition, perfusion, co-morbidities and condition of the soft tissue."*

"A PRESSURE INJURY IS LOCALIZED DAMAGE TO THE SKIN AND UNDERLYING SOFT TISSUE USUALLY OVER A BONY PROMINENCE OR RELATED TO A MEDICAL OR OTHER DEVICE."

Pressure injury staging is used to determine the degree of injury and direct treatment. It is critical that anyone on the health care team who is 'staging' a pressure injury is using the most up to date definitions and has adequate training to do so. Here are the updated NPIAP staging definitions:

STAGE 1 PRESSURE INJURY: NON-BLANCHABLE ERYTHEMA OF INTACT SKIN

Intact skin with a localized area of non-blanchable erythema, which may appear differently in darkly pigmented skin. Presence of blanchable erythema or changes in sensation, temperature or firmness may precede visual changes. Color changes do not include purple or maroon discoloration; these may indicate deep tissue pressure injury.

STAGE 2 PRESSURE INJURY: PARTIAL-THICKNESS SKIN LOSS WITH EXPOSED DERMIS

The wound bed is viable, pink or red, moist and may also present as an intact or ruptured serum-filled blister. Adipose (fat) is not visible and deeper tissues are not visible. Granulation tissue, slough and eschar are not present. These injuries commonly result from adverse microclimate and shear in the skin over the pelvis and shear in the heel. This stage should not be used to describe moisture associated skin damage including incontinence associated dermatitis, intertriginous dermatitis, medical adhesive related skin injury, or traumatic wounds (skin tears, burns, abrasions).

> "THIS INFORMATION IS ALSO VERY PERTINENT FOR FUNDING SOURCES. NPIAP WORKS CLOSELY WITH THE CENTERS FOR MEDICARE AND MEDICAID SERVICES TO EDUCATE THIS PRIMARY FUNDING SOURCE ON THE LATEST EVIDENCE AND IMPROVE APPROPRIATE PRODUCT PROVISION."

STAGE 3 PRESSURE INJURY: FULL-THICKNESS SKIN LOSS

Full-thickness loss of skin, in which adipose (fat) is visible in the ulcer and granulation tissue and epibole (rolled wound edges) are often present. Slough and/or eschar may be visible. The depth of tissue damage varies by anatomical location; areas of significant adiposity can develop deep wounds. Undermining and tunneling may occur. Fascia, muscle, tendon, ligament, cartilage and/or bone are not exposed. If slough or eschar obscures the extent of tissue loss this is an Unstageable Pressure Injury.

STAGE 4 PRESSURE INJURY: FULL-THICKNESS SKIN AND TISSUE LOSS

Full-thickness skin and tissue loss with exposed or directly palpable fascia, muscle, tendon, ligament, cartilage or bone in the ulcer. Slough and/or eschar may be visible. Epibole (rolled edges), undermining and/or tunneling often occur. Depth varies by anatomical location. If slough or eschar obscures the extent of tissue loss this is an Unstageable Pressure Injury.

UNSTAGEABLE PRESSURE INJURY: OBSCURED FULL-THICKNESS SKIN AND TISSUE LOSS

Full-thickness skin and tissue loss in which the extent of tissue damage within the ulcer cannot be confirmed because it is obscured by slough or eschar. If slough or eschar is removed, a Stage 3 or Stage 4 pressure injury will be revealed. Stable eschar (i.e. dry, adherent, intact without erythema or fluctuance) on the heel or ischemic limb should not be softened or removed.

DEEP TISSUE PRESSURE INJURY: PERSISTENT NON-BLANCHABLE DEEP RED, MAROON OR PURPLE DISCOLORATION

Intact or non-intact skin with localized area of persistent non-blanchable deep red, maroon, purple discoloration or epidermal separation revealing a dark wound bed or blood filled blister. Pain and temperature change often precede skin color changes. Discoloration may appear differently in darkly pigmented skin. This injury results from intense and/or prolonged pressure and shear forces at the bone-muscle interface. The wound may evolve rapidly to reveal the actual extent of tissue injury, or may resolve without tissue loss. If necrotic tissue, subcutaneous tissue, granulation tissue, fascia, muscle or other underlying structures are visible, this indicates a full-thickness pressure injury (Unstageable, Stage 3 or Stage 4). Do not use DTPI to describe vascular, traumatic, neuropathic, or dermatologic conditions.

NPIAP also has definitions for Medical Device Related Pressure Injury and Mucosal Membrane Pressure Injury.

Finally, NPIAP released a position statement on staging that includes seven individual positions. These positions address pressure injury causes, prevention, progression, limitations and more. This information is also very pertinent for funding sources. NPIAP works closely with the Centers for Medicare and Medicaid Services to educate this primary funding source on the latest evidence and improve appropriate product provision.

CONTACT THE AUTHOR

Michelle may be reached at
MICHELLELANGE1@OUTLOOK.COM

REFERENCES

The National Pressure Injury Advisory Panel, npiap.com

Pressure Injury Stages
https://cdn.ymaws.com/npuap.site-ym.com/resource/resmgr/npuap_pressure_injury_stages.pdf

NPUAP Position Statement on Staging – 2017 Clarifications
https://cdn.ymaws.com/npiap.com/resource/resmgr/npuap-position-statement-on-.pdf

Michelle Lange is an occupational therapist with over 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 NRRTS DIRECTIONS magazine. Lange is a RESNA Fellow and member of the Clinician Task Force. She is a certified ATP, certified SMS and is a Senior Disability Analyst of the ABDA.

HELPING PEOPLE = GOOD BUSINESS

Written by: **ROSA WALSTON LATIMER**

As often happens in this industry, Erik Lindblad ATP, CRTS®, with Numotion didn't have a direct path to his current career. Even though he wouldn't realize it at the time, the choices he made when he was younger, coupled with a strong work ethic taught by his dad, brought him to a successful, satisfying career.

"My dad used to tell me that just showing up is half of the battle," Lindblad said. "When I was in my early 20s, I was showing up to two jobs and going to school. I didn't know for certain what I was going to do. That was my life for about eight years. As difficult as those times were, I tried to learn from my experiences and listen to people who were willing to help me, and that made me what I am today. Ultimately, I got into this work because I can help people and make a living at the same time. If that isn't a good business, I don't know what is!"

IS THERE SOMETHING OR SOMEONE WHO ESPECIALLY INFLUENCED YOUR DEVELOPMENT IN THIS INDUSTRY?

Definitely, Randy Brooks was a mentor to me and in some ways a father figure. He was a huge influence on many people who are still in this industry. We first worked together at Apria Healthcare, where Brooks grew the company from three branches to more than 60 while carving out a niche within Apria to create Complex Rehab Technology (CRT) on a larger scale. There were many times when I would walk into Brooks' office and ask for guidance. He was always willing to help me, but he wanted me to realize that CRT would be a lifelong commitment. During the first eight years at Apria, I learned how to repair equipment and became the lead power technician. I believe it was during this time that I began to fully realize the importance of this work. After this experience, I convinced Apria to move me into a sales position.

Erik Lindbland, ATP, CRTS®, coached the 2015 Youth Football Super Championship team. His son, Ethan, a member of the team, made a touchdown and had 10 tackles.

Brooks believed it was necessary for anyone who was, or had the potential to be, a sales representative to be an ATP and either a NRRTS Registrant or a Friend of NRRTS. I was a Friend for the first year, and upon receiving my ATP, I became a Registrant and have carried those certifications for the past 20 years. Numotion colleagues Jim Perez and Brad Unruh have also been positive influences on my career.

As an ATP, I was fortunate to work with Debbie Pucci at the Rehab Institute of Chicago (now the Shirley Ryan AbilityLab). Pucci is a clinical educator and the best therapist I have ever met. She taught me many things and helped me recognize the potential of taking my work to a deeper level and guarding against becoming stagnate professionally.

I also believe that in a subtle way, my parents influenced my decision to have a career in this industry. My mother was a nurse, and my dad was a salesman, so it makes sense that I am in this field.

LOOKING BACK ON YOUR CAREER, WHAT IS SOMETHING THAT YOU HAVE LEARNED FROM YOUR CLIENTS THAT HAS INFLUENCED HOW YOU APPROACH YOUR WORK?

This business is very personal. What you say and how you say it is crucial. You must be vested in each client and interpret each situation carefully. Clients and families may be in denial and overwhelmed with all the things they are facing. An ATP, CRTS® often walks a fine line of being both sympathetic and practical regarding a client's needs. You need to be careful so as not to take away their hopes but, at the same time, be deliberate with a realistic approach to what is going to help this person. Being the middleman who has the responsibility of putting all the pieces together for the best possible solution can be difficult but rewarding.

One of my strongest assets is there isn't a lot I haven't seen or tried. That comes with experience. Not so much that I'm the smartest guy in the room, I've just done things the wrong way so many times I can use my experience to my advantage.

Erik Lindblad with a 152 lb. yellowfin tuna caught in Louisiana in 2018.

Ethan Lindblad in August 2019 on his first day at Florida State University in Tallahassee, Florida.

Elaine and Erik Lindblad vacationing in the Smokey Mountains.

TELL US SOMETHING THAT YOU LIKE ABOUT YOUR WORK.

I enjoy educating people. I am energized by helping clients, clinicians and doctors understand the process of providing the best equipment possible. When I have a breakthrough and a client tells me, 'It took me 20 years to understand how this business works. And you came in here and in one hour, summed everything up. No one else shared this information with me.' That is something that keeps me going!

IF YOU ONLY HAD ONE PIECE OF ADVICE TO GIVE TO AN ATP JUST BEGINNING HIS OR HER CAREER, WHAT WOULD IT BE?

It is crucial to protect how you serve your customers. Don't put all your eggs in one basket. I've seen many people who were good ATPs cross one path incorrectly with a therapist or a supporter of the hospital. One mistake, and they are out of the clinic. Their career was ruined, and often they ended up leaving the industry. After seeing that happen, and experiencing it a little bit myself, I learned that it is important to be diverse in your business – work with children, go to the schools, work with smaller clinics, go to homes – mix it up as best you can.

YOU HAVE BEEN WITH NUMOTION 16 YEARS AND RECENTLY MOVED FROM THE CHICAGO AREA TO SARASOTA, FLORIDA. WHAT PROMPTED THAT MOVE, AND HOW HAS THAT EXPERIENCE BEEN?

My wife, Elaine Lindbland, is the accounting manager for an entertainment company, and about two and a half years ago, we learned the company was moving their offices to Florida. We agreed to make this move so she could continue with her job, and I would continue working with Numotion. However, we were able to wait until our son, Ethan, graduated from high school. In August 2019, we moved to Florida, and Ethan began his college career at Florida State University in Tallahassee, pursuing a chemical engineering degree. He's in his second semester now and doing very well.

I believed I could do my job anywhere especially with the always-present support of Elaine. However, even though we both wanted to make this change, the idea was somewhat unnerving to me. I was leaving the place I had worked for most of my

> "YOU NEED TO BE CAREFUL SO AS NOT TO TAKE AWAY THEIR HOPES BUT, AT THE SAME TIME, BE DELIBERATE WITH A REALISTIC APPROACH TO WHAT IS GOING TO HELP THIS PERSON. BEING THE MIDDLEMAN WHO HAS THE RESPONSIBILITY OF PUTTING ALL THE PIECES TOGETHER FOR THE BEST POSSIBLE SOLUTION CAN BE DIFFICULT BUT REWARDING."

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career and felt secure and comfortable with my work associates and friends. I didn't know if this drastic change was something I could handle because I hadn't ever experienced anything like it. The fresh start was enticing! At 50 years old, I wanted to see what it would be like to do something different, maybe recreate myself in some way. I also believed this was a good opportunity, and if we didn't do it now, we probably never would.

The first couple of months we were in Florida, I questioned our decision. My work depends on referrals and trust that I can help facilitate getting mobility for those who need help. Building that trust has been more difficult than anticipated. However, my co-workers in Florida have been gracious in giving me every opportunity to succeed, and my experience is serving me well.

Many things are different in Florida than they were in the Midwest. In addition to the challenge of establishing myself here as a dependable, knowledgeable, and experienced ATP, the setting of my work is very different. There are fewer clinics in Florida, so a great deal of my work is 'stop by stop.' I am usually not able to see six or eight clients in one location; instead, more driving time is required to see the same number of clients. Funding is somewhat better in Florida, and perhaps parts of the funding process may be a bit easier to accomplish. Illinois is a very poorly funded state. I used to ask clients why they stayed in the state even though funding was a challenge, and they would tell me the doctors were good, and they didn't want to leave their doctors.

However, a lot of people in Florida aren't 'from' Florida. Many came from somewhere else originally, so I can build relationships since my client may be new to the area, too. I realize this is a 'hang in there' time in my career, and I'll keep building. One thing for sure, I haven't been in this work this long to give up.

CONTACT THE AUTHOR

Erik may be reached at
ERIK.LINDBLAD@NUMOTION.COM

Erik Lindblad, ATP, CRTS®, has been a NRRTS Registrant since 2000 and works for Numotion in Tampa, Florida.

Erik and Ethan Lindblad on a father/son "musky" trip in 2018.

Erik, Ethan, and Elaine Lindblad at Niagra Falls in 2015 for family vacation.

BENEFITS OF NRRTS REGISTRY

NRRTS offers an impressive lineup of **monthly live webinars,** an extensive **on-demand library of webinars** offering more than 50 courses to fit your schedule, and numerous **CEU article reviews.** All **content is geared toward clinicians and suppliers** working in Complex Rehab Technology (CRT) and Assistive Technology.

DIRECTIONS, the **bimonthly publication of NRRTS,** offers articles **spotlighting consumers, clinicians, manufacturers** and **suppliers of CRT.** A **clinical focus** and **CEU article** are offered in each issue. **DIRECTIONS** has a circulation of over **10,000 readers.**

The NRRTS Website receives more than **6,000 visits** each week. All **current Registrants are listed** on the website by state or province.

The NRRTS Listserv is a convenient way to **share information with CRT professionals** across the country.

The **affordable annual fee** for NRRTS Registration provides **excellent benefits.**

As an organization, **NRRTS is led by a board of directors composed of current Registrants. NRRTS** is the **voice of the professional RTS.**

NRRTS works closely with other organizations to **promote** and to **advocate for the CRT Industry.**

For additional information and online application, please visit **www.nrrts.org.**

For questions, please contact
Amy Odom at **aodom@nrrts.org** or
Weesie Walker at **wwalker@nrrts.org.**

IMPLEMENTATION OF 2019 CRT LEGISLATION

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

We are continuing to communicate with the Centers for Medicare and Medicaid Services (CMS) on the implementation of the Complex Rehab Technology (CRT) provision of HR 1865 requiring an 18-month suspension in Medicare's inappropriate application of competitive bidding payment rates to Complex Rehab (CR) manual wheelchair accessories.

The suspension was effective Jan. 1, 2020, but CMS has indicated they require time to make the needed system changes and have instructed providers to continue to submit claims as usual until further notice. As a follow-up to the initial instructions released on Jan. 15, we have shared the following information and recommendations with CMS:

- We pointed out there are more Complex Rehab (CR) manual wheelchair HCPCS codes that should be added to the initial list. The additional codes are: E1231- Wheelchair, pediatric size, tilt-in-space, rigid, adjustable, with seating system; E1232- Wheelchair, pediatric size, tilt-in-space, folding, adjustable, with seating system; E1233- Wheelchair, pediatric size, tilt-in-space, rigid, adjustable, without seating system; and E1234- Wheelchair, pediatric size, tilt-in-space, folding, adjustable, without seating system.

- We provided a complete list of the impacted wheelchair accessories and seat and back cushion HCPCS codes. The good news is that the majority of these codes already have a Medicare KU payment rate established as they are available for use with Complex Rehab (CR) power wheelchairs. This list identifies the accessory codes defined as manual wheelchair accessories.

- We requested an expeditious completion of the system changes so that claims could be submitted under the new policy as soon as possible. If all accessory codes are not repriced by April 1, we asked that the changes be implemented for those that are complete by that date and that all other codes be updated no later than July 1.

- We requested that once the system changes are made, the DME MACs automatically reprocess any claim that is eligible for a retroactive payment adjustment to avoid that additional burden being placed on providers.

> "MEDICAID COVERAGE AND PAYMENT POLICIES PLAY A CRITICAL ROLE IN ADEQUATE ACCESS TO CRT, AND WE NEED CURRENT INFORMATION TO PROVIDE EFFECTIVE STATE ADVOCACY."

The CMS team has acknowledged the receipt of the above information, and they are continuing to work on the implementation. We expect to have additional updates as we move through the upcoming weeks.

SEPARATE BENEFIT CATEGORY BILL

Work continues around securing additional support for the passage of federal legislation HR 2408 to create a Separate Benefit Category for CRT within the Medicare program. This was to be the focus of the Access2CRT Summit originally scheduled for March 30-31 in Washington, D.C. which has been postponed to a later date. We currently have 37 cosponsors, consisting of 24 Democrats and 13 Republicans, and ask advocates to use www.access2crt.org to get their Representatives to sign on.

COVERAGE FOR POWER WHEELCHAIR SEAT ELEVATION AND STANDING

As reported, there have been ongoing discussions and meetings with CMS over the past 18 months requesting that Medicare make the needed policy changes to provide coverage for power wheelchair seat elevation and standing. During this time, a wealth of information has been shared and presented by consumer and clinician organizations identifying the policy and medical reasons that support this coverage change and the need for CMS to approve the request.

This remains a priority CRT access issue for 2020 and work has begun on assembling a broader information package for CMS that will address the legal, regulatory, medical, coverage, and utilization aspects of this needed coverage change.

NATIONAL MEDICAID CRT SURVEY

Medicaid coverage and payment policies play a critical role in adequate access to CRT, and we need current information to provide effective state advocacy. With that in mind, a national survey to gather information regarding CRT policies and issues on a state-by-state basis was conducted in partnership with NCART, NRRTS, U.S. Rehab, and AA Homecare.

We are in the process of summarizing and analyzing the survey responses received to date. Responses have been received from

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most of the states, and we are following up on those that are missing. The survey information will help identify the status and trends within Medicaid programs and identify where state advocacy action is needed. Thanks to all those CRT providers who participated.

ADA 30TH BIRTHDAY

This year the country will be celebrating the 30-year anniversary of the signing of the Americans with Disabilities Act (ADA) that took place on July 26, 1990. The ADA prohibits discrimination against people with disabilities in several areas, including employment, transportation, public accommodations, communications, and access to state and local government' programs and services.

THIS YEAR THE COUNTRY WILL BE CELEBRATING THE 30-YEAR ANNIVERSARY OF THE SIGNING OF THE AMERICANS WITH DISABILITIES ACT (ADA) THAT TOOK PLACE ON JULY 26, 1990.

Although there is more work needed to fully implement the principles and promise of this important legislation, this year provides a great opportunity to celebrate the objectives and bring attention to making our country fully accessible for people with disabilities in all the ADA areas.

As we work to educate policymakers on the need and benefit of access to CRT, there is a direct connection to CRT access and the ADA. For someone who requires a CRT wheelchair, all the community and employment improvements are empty promises unless that person starts with being able to get the right wheelchair and the needed supporting maintenance and repair. This is an important message to weave into our federal and state advocacy activities.

You'll be hearing more about the ADA and CRT as we move through the year. For now, this is a good time to think of ways your organization can be part of this national celebration within your community.

NCART MEMBERSHIP

If your organization provides or manufactures CRT and is not yet an NCART member, please join to support our important work. NCART is exclusively focused on CRT education and advocacy at the federal and state levels. We have a proven record of leading and collaborating with dedicated providers, manufacturers, consumers, clinicians and others to protect access and secure needed policy changes. More NCART members are needed to keep up the good fight. Visit the membership area of our website at www.ncart.us for details or email me to set up a conversation.

CONTACT THE AUTHOR
Don may be reached at
DCLAYBACK@NCART.US

Don Clayback is executive director of NCART. NCART is national organization of Complex Rehab Technology (CRT) providers 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 provider, consultant and advocate. He is actively involved in industry issues and a frequent speaker at state and national conferences.

RESNA UPDATE

NEW EXECUTIVE DIRECTOR, NEW DIRECTION, NEW COMMITMENT

Written by: **MARY ELLEN BUNING, PHD, OTR/L, ATP/SMS, RESNA FELLOW PRESIDENT, RESNA BOARD OF DIRECTORS**

It is an honor and a privilege to have this opportunity to appear in DIRECTIONS and tell you about the new and exciting changes at RESNA.

RESNA parted ways with its executive director in fall 2018. Andrea Van Hook, who some of you may remember as RESNA's membership and marketing manager for several years, then came on board as our interim executive director. She introduced us to SmithBucklin, an association management company with offices in California, Illinois and Washington, D.C.

Over the course of several months, the RESNA Board of Directors engaged in a rigorous process that resulted in the decision to select SmithBucklin to provide association management services. The board concluded that the company's experience, knowledge, and capabilities will help shape RESNA's future strategy to ensure long-term success. Van Hook is now our permanent executive director, and our office has moved to Washington, D.C.

Every change has its challenges, but my fellow board members and I have been impressed with the new RESNA team's hard work and dedication in implementing a complex and comprehensive transition. Now that RESNA is under new management, what can you expect?

- A commitment to customer service; this means the phone will be answered, and emails and voicemails will be returned in a timely manner.
- Consistent communications; staff will provide clear information on questions regarding certification eligibility, exam preparation and certification renewal requirements.
- Technology that replaces time-consuming manual processes; for example, staff plans to implement online certification renewal.
- High-quality education; we have exciting plans to develop new courses as well as update our fundamentals course.

NRRTS staff tells us the number one question asked of them is, what do I need to renew my RESNA certification? NRRTS requires Registrants to renew on an annual basis with documentation of 1.0 CEU of continuing education. Renewal of the RESNA ATP certification is every two years, and requires at least 1.0 CEU of continuing education plus an additional 10 hours. This means those who successfully renew NRRTS Registration meet the requirements to renew their ATP. The only difference is that the ATP renewal is every two years.

Please note RESNA's new contact information:
Phone: 202-367-1121
Email: info@resna.org

Because there is a team that monitors the email and responds to all inquiries, there is no need to worry about reaching a specific person. Of course, you are always welcome to contact Van Hook directly at execoffice@resna.org.

Thank you to NRRTS Executive Director, Weesie Walker and Director of Marketing and Operations Amy Odom for suggesting that we re-institute the "RESNA column" in DIRECTIONS. All of us at RESNA greatly appreciate the strong partnership and collaboration with NRRTS.

Finally, I hope to see many of you at RESNA's annual conference, July 7-10, in Washington, D.C. Come join in celebrating RESNA's 40th Anniversary! Registration is now open.

CONTACT THE AUTHOR

Mary Ellen may be reached at
ME_BUNING@MAC.COM

Mary Ellen Buning, PhD, OTR/L, ATP/SMS, is an occupational therapist with a specialty in assistive technology. She is an experienced educator and presenter and has a strong commitment to the use of the internet and telecommunications to improve practice, conduct survey research and disseminate research findings. She is particularly interested in wheelchair transportation safety for those who must sit in wheelchairs during motor vehicle travel. She holds a master's degree in occupational therapy from the University of Colorado, and a PhD in rehabilitation science from the University of Pittsburgh. Buning is a recipient of the RESNA Fellow Award, the organization's highest honor, in recognition of her service to RESNA and the field of rehabilitation engineering and assistive technology.

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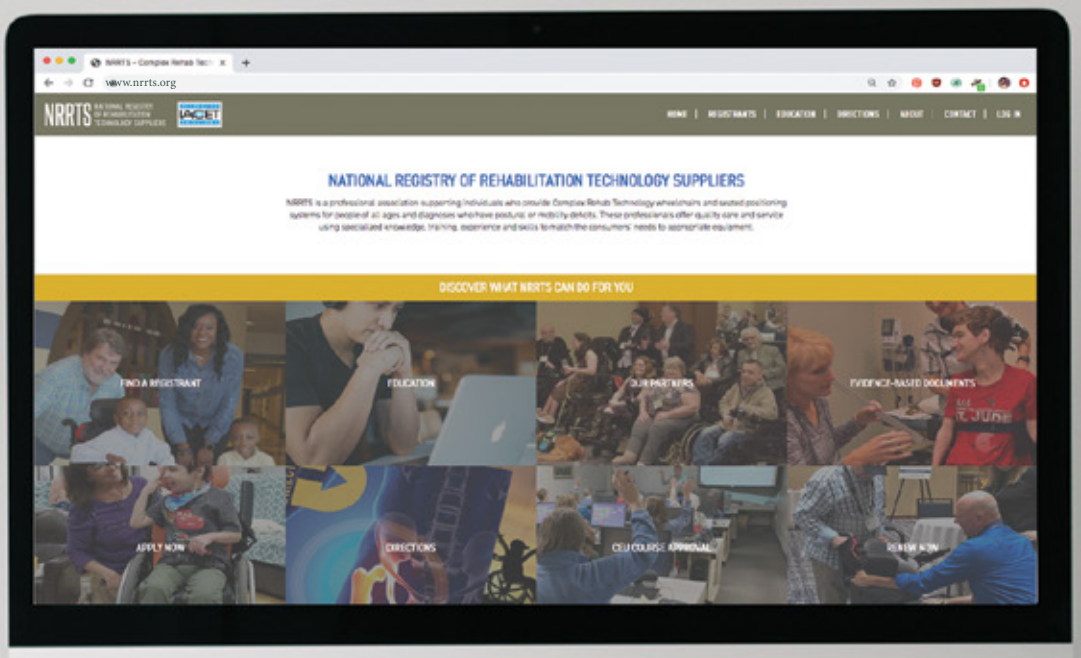

A ROADMAP TO GETTING A STANDING POWER WHEELCHAIR

Written by: **NICOLE LABERGE, PT, ATP**

When someone asks about the possibility of getting a power wheelchair that stands, I still hear "that will never happen; it won't get paid for." Truth is, they are getting paid for. It doesn't happen overnight. It is a process, has multiple steps and takes advocacy and time. It is an achievable task! Come along on this journey and see how you can change the "it won't" to the "it will!"

"It's easy to stand with the crowd. It takes courage to stand alone." -Mahatma Gandhi

THE JOURNEY BEGINS:

IDENTIFY IF THEY QUALIFY FOR A POWER WHEELCHAIR ... AND IF THEY WANT TO STAND: Often, people aren't even aware that standing from the sitting position is possible on a power wheelchair. Ask them what they could do if they could stand up: Could they reach the cabinets? Use the urinal in the community? Give a presentation at college or work? Maybe cook a meal over the stove successfully? The client's goals need to be at the center of the process. Integrating a standing device on a power wheelchair is not driven by a diagnosis, so please don't exclude the client if they don't fit into the "typical" user who may want to stand. Listen to them tell their story and what is difficult for them and discuss how standing could help their situation.

BENEFITS OF STANDING: If you are questioning if the client is a good candidate for standing, ask yourself if they have: pain, spasticity, respiratory and cardiac impairments, decreased circulation, ROM limitations, swelling and edema (especially in their legs), history of bladder infections/incontinence, issues with bowel function, or a history of/or current pressure injuries. Standing can positively impact all of these issues! It can also improve interactions with peers, improve job performance and allow access to areas in the community you simply can't reach when you are seated in a wheelchair.

> "I ENCOURAGE YOU TO USE A 'TRIAL LOG' AND WRITE DOWN THE TOTAL TIME STANDING, HOW MUCH ASSISTANCE THEY NEED TO STAND AND TRANSFER, ANY MEDICAL AND FUNCTIONAL CHANGES THAT OCCUR, AND ALSO WHAT THE END 'GOALS' ARE FOR USING A STANDING FUNCTION."

PIT STOPS ALONG THE WAY:

IDENTIFY IF THE CLIENT IS SAFE TO STAND: This requires clearance from a medical professional and assessment by the evaluating therapist. It is important to monitor vitals, positioning and observe how the client feels while they are standing. This step doesn't have to be initiated in a standing power wheelchair. If they are using a separate standing frame already or you have one to use to start the trial, that works too. I encourage you to use a "trial log" and write down the total time standing, how much assistance they need to stand and transfer, any medical and functional changes that occur, and also what the end "goals" are for using a standing function. Research continues to develop, but a supported baseline goal is to tolerate at least 30 minutes per day for five days a week to improve their specific medical and functional needs. If you are using a separate stander, make sure they try a standing power wheelchair in the clinic as well as at home. Assessing if the device actually fits in their home environment and vehicle is crucial and will help with the justification. If they are seeing improvements after a week of standing, imagine how their life will change if they are able to stand every day!

> "IT'S EASY TO STAND WITH THE CROWD. IT TAKES COURAGE TO STAND ALONE."

DOCUMENTATION: This part is overwhelming to most. First, complete your justification for the power wheelchair. Then make sure you include why a standing function is both medically and functionally necessary. Highlight how the person can now stand throughout the day, increasing the dynamic weight bearing that research shows is better than just a static hold position. Include that the frequency of use is now increased, as they are no longer dependent on others to transfer them back/forth and they can independently stand. If transfers take more than one person or demand extra energy/cause pain/etc. for the client, include how integrating the device is necessary to eliminate these issues. Being

"STRONG PEOPLE STAND UP FOR THEMSELVES, BUT STRONGER PEOPLE STAND UP FOR OTHERS."

able to move within their environment when they are standing — including at home, school and the community — is not possible. Detail what tasks they were able to do! If the client has tried to use other devices, include why these no longer work. Any medical changes that occurred should be included, especially if they will reduce the cost in health care.

Include supporting literature, such as the RESNA Position Paper on the Application of Wheelchair Standing Devices, with your justification. Be prepared to write an addendum (or a few), and be honest with the client, family, caregivers and team. This is not a short process, but it is worth it!

"Strong people stand up for themselves, but stronger people stand up for others."

VICTORY LAP:

SUCCESSFUL OUTCOMES AFTER APPROVAL: After doing the happy dance when approval is received, there are still important steps to complete. Clinic delivery and initial fitting of the standing power wheelchair is crucial. If the initial delivery is done at home, then I suggest having the client return to clinic within the first few weeks of use. Maximizing the programming, the positioning and fit, and providing education on recommended use is necessary to achieve optimal long-term outcomes. Schedule regular follow-ups in clinic, use connected technologies, and reach out to the client and family to make sure that the standing function is continued to be used. You worked so hard to get this feature; the benefits are only achieved if it is consistently used. If funding or distance keeps you from

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A ROADMAP TO GETTING ...
(CONTINUED FROM PAGE 33)

"GETTING A STANDING POWER WHEELCHAIR SHOULD BE AN INITIAL THOUGHT, NOT AN AFTERTHOUGHT. I ENCOURAGE YOU TO JOIN THIS RIDE WITH ME AS WE STAND TOGETHER!"

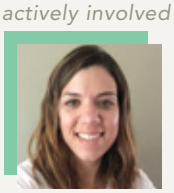
having follow-up clinic sessions, make sure your supplier is able to provide adjustments and keep you informed if changes are being made, or of any concerns.

The road may be bumpy, but teamwork and communication with everyone involved can make it much smoother. Getting a standing power wheelchair should be an initial thought, not an afterthought. I encourage you to join this ride with me as we stand together!

CONTACT THE AUTHOR

Nicole may be reached at NICOLE.LABERGE@HCMED.ORG

Nicole B. LaBerge, PT, ATP, is currently a Level 3 Senior physical therapist and Assistive Technology Professional at Hennepin Healthcare, a Level 1 trauma hospital and clinic system in Minneapolis, Minnesota. She has been a practicing neurological physical therapist for 15-plus years and an ATP for 13-plus years, working in various clinical settings including inpatient, aquatic, subacute and currently outpatient neurological rehabilitation. She has presented at both state and international conferences. She is actively involved with multiple research projects investigating co-morbidities and complexities of prolonged sitting and the medical benefits of standing.

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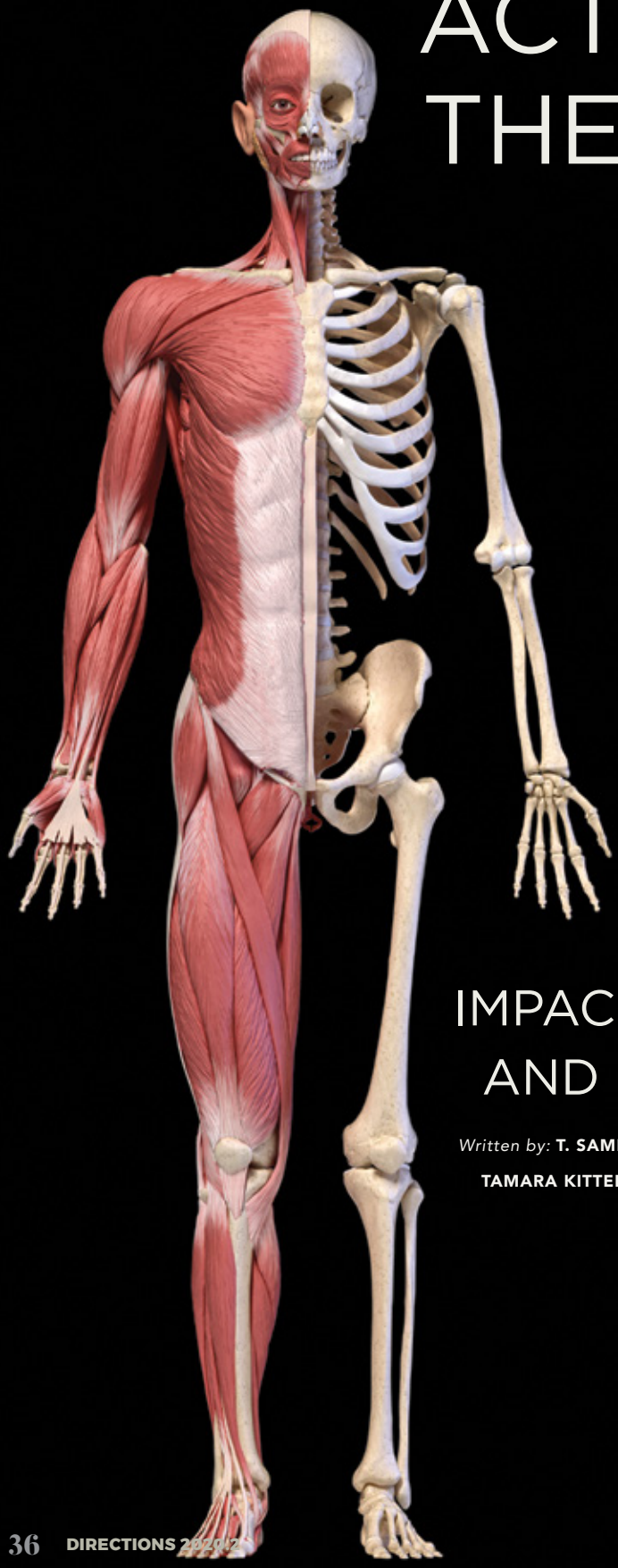

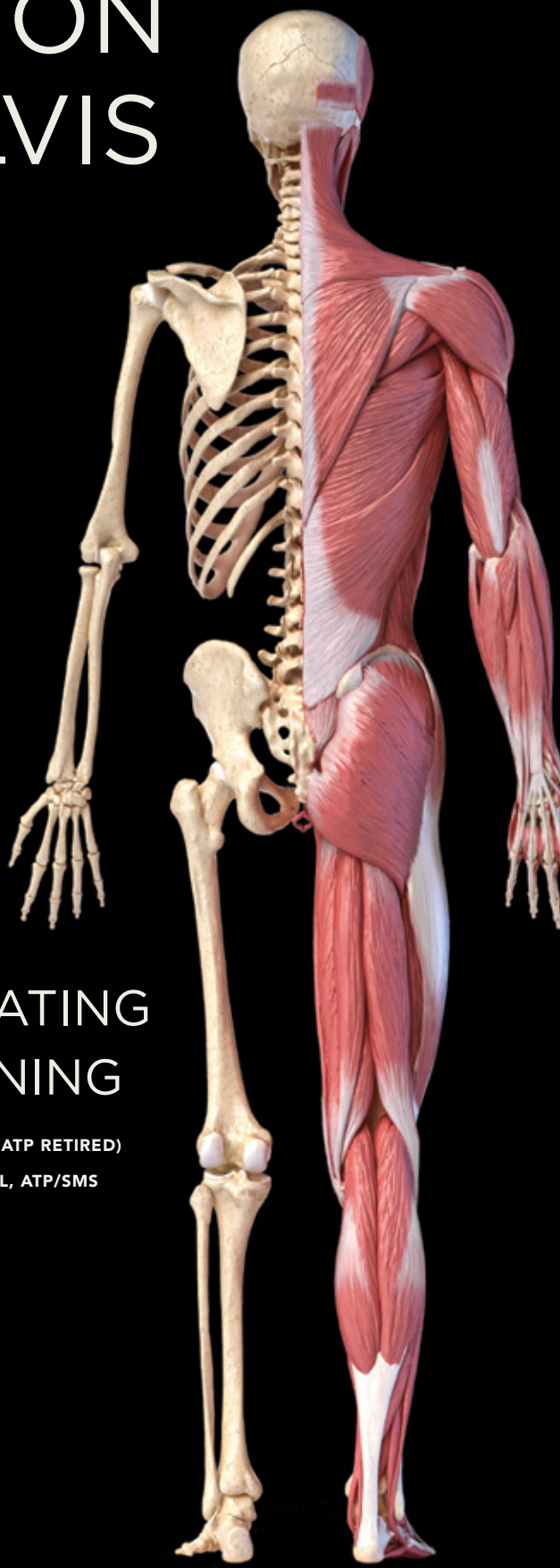

IMPACT ON SEATING AND POSITIONING

Written by: **T. SAMMIE WAKEFIELD, OTR/L (ATP RETIRED)**
TAMARA KITTELSON-ALDRED, MS, OTR/L, ATP/SMS

Seating and mobility evaluations encompass wide ranging aspects of human function and posture in people who have motor impairments. The most readily observable challenges may involve head and trunk control, arm and hand function, as well as lower extremity use and placement. Issues such as skin breakdown, visual field, and oral motor function may also come into play. However, all of these aspects are affected by pelvic posture. It has been said, what happens at the lips and fingertips begins at the hips.

During seating and mobility evaluations it is best practice to begin analyzing flexibility, movement, and posture of the pelvis when planning seating and positioning interventions. A thorough understanding of multijoint muscles is essential, especially in relation to the pelvis as a foundation for seating. Understanding how these muscles and joints work together is very important in wheelchair seating and 24-hour posture care and management. The lumbar spine and lower extremities are connected by multijoint muscle groups with the pelvis caught in the middle. This often results in a complex chain of movements, which has different effects depending upon joint range of motion as well as the action of gravity in different human orientations. These complex visual-spatial concepts can be difficult to grasp because they are three- dimensional, dynamic, and have wide-ranging effects on the body.

In this article a simplified anatomical model[1] (SAM) is used to illustrate the concepts being discussed. This is useful because the SAM can be placed in a specific posture, freezing one part of the pattern to be studied and analyzed, freeing attention for what is happening further down the movement chain. The SAM used for illustrations in this article intentionally omits upper extremities and thorax, to focus attention on the relationship between pelvic posture, leg and foot position and their effects on spine and head orientation. It was invented specifically to teach complex seating concepts by accompanying verbal explanations with visual-spatial demonstration

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MULTIJOINT MUSCLE ACTION ON THE PELVIS
(CONTINUED FROM PAGE 37)

Clients, families, and team members may have differing experience levels, knowledge of anatomy, and may not even speak the same language. The use of a SAM can help everyone understand and communicate about therapeutic recommendations during treatment planning. This, in turn, will promote successful seating and positioning strategies.

In addition, we have learned the value of using a SAM to deepen our own understanding of seating and positioning dynamics. It has been our experience that

the sensorimotor act of moving the body parts of the SAM draws on a different area of the problem solving part of the brain. Analyzing movement can sometimes be done better in nonverbal ways. The SAM taps into this different learning style and can bring "aha" moments about concepts that otherwise are difficult to express.

We are focusing on three muscle groups that have major effects on pelvic posture, and thus impact function throughout the body. Restricted motion in one or more of these important proximal muscle groups limits healthy pelvic movement and posture, the foundation of balanced sitting. This will have negative consequences that ripple up the spine affecting head control, vision, breathing, swallowing, arm and hand function, as well as lower leg and foot position. More than one of these muscle groups may be affected in a single individual, resulting in highly complex seating issues that can lead to pelvic asymmetry. Understanding these multijoint movement patterns of the pelvis is key to successful, functional seating and positioning outcomes. We will show how they work, using a SAM, and suggest how seating accommodations and 24-hour posture care management can mitigate and improve problems caused by multijoint muscle dysfunction around the pelvis.

HAMSTRINGS[2] – THE LEAST COMPLEX OF THE THREE MUSCLE GROUPS

Limited hamstring length is commonly seen in people with high muscle tone and/or spasticity — characteristics seen in people with cerebral palsy, traumatic brain injury and similar diagnoses. Tight hamstrings are often obvious during mat assessments when a person is not able to straighten their hips and knees at the same time while lying supine. The hamstring muscles attach at the bottom of the pelvis, pass over the back of the hip joint and the knee joint and attach at the back of the lower leg behind the knee. The motion these muscles cause is to straighten the hip and bend the knee joint. People who spend a lot of their waking hours in the seated position often have shortened (tight) hamstrings. People with shortened hamstrings are typically unable to fully extend their knees and hips at the same time, resulting in characteristic postures. A rounded back and posterior pelvic tilt is a typical compensation in sitting when knees are not allowed to flex sufficiently. The head follows the rounded spine, until head righting acts to correct the head position for vision. Sacral sitting and shearing, caused by sliding forward to ease shortened hamstrings, puts the skin of the coccyx and buttocks at risk for pressure injuries. This can occur when (a) seat length is too long, (b) seat to

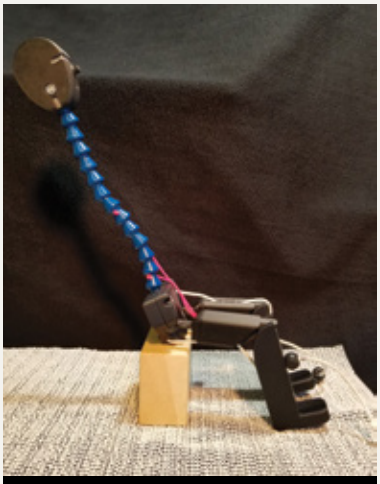

FIGURE 1
The right string clamp of the SAM (foreground) demonstrates hamstring tightness that tilts the pelvis backward when the knee is pulled into extension. The spine and head follow.

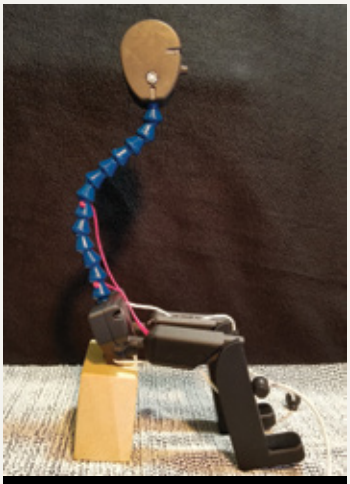

FIGURE 2
Compensatory head-righting and vision reactions result in kyphotic posture.

FIGURE 3 SAM illustrates how legs in supine seek support when hip and knee extension is limited by shortened hamstrings. Hip and knee joints are at risk and the pelvis and spine are rotated as a result.

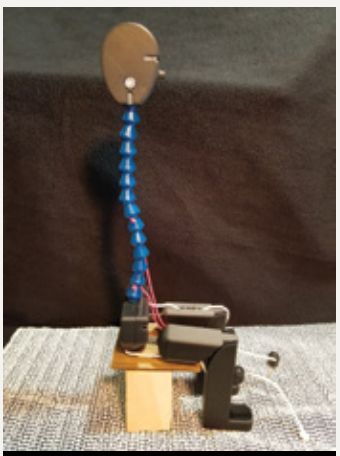

FIGURE 4
Correct seat depth and foot placement allow more neutral posture of the SAM pelvis in spite of shortened hamstrings.

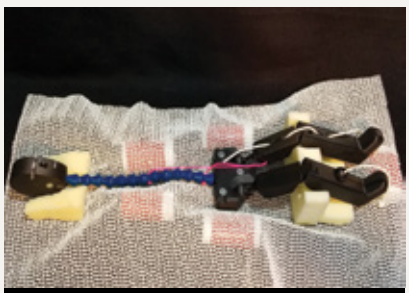

FIGURE 5
SAM illustrates nighttime positioning supports in place for tight hamstrings. The purpose of the supports is to promote symmetry and use gravity as a correctional force as well as spread the pressure over the entire body and thus improve comfort.

back angle is too closed, or (c) foot supports are placed too far forward to allow appropriate knee flexion (see Figure 1 and 2). In supine lying, inability to extend the hips and knees together results in the legs falling toward one side or the other (windswept), or into abduction or adduction. The legs are heavy, more than 35% of body weight for adults, and will seek support until they find it. This places stress on hip and knee joints, increasing risk of dislocations, and can also cause the pelvis and spine to rotate (see Figure 3).

SHORTENED HAMSTRINGS - ACCOMMODATING FOR SUCCESSFUL SEATING[3]

Specific techniques can be used for accommodation in sitting when a person has shortened hamstrings (see Figure 4). Accommodation is best practice, as the seated position should promote function rather than therapeutic intervention. It is the place where participation in life happens. It is not well-suited for correction because of gravitational demands on a person when upright. Gravity complicates the effort to make significant improvements in alignment and posture. The primary concept is to allow sufficient knee flexion and hip extension to foster relaxation in the shortened hamstrings, while still maintaining balanced pelvic posture. This is done in a variety of ways depending upon the individual presentation. These interventions will be influenced by the person's functional status especially related to transfers, wheelchair seat to floor height needed for work surface access, front caster size, and client preference. Placement of foot support must be planned to allow comfortable positioning of the lower extremities without extending the knees, thus affecting pelvic posture that will lead to sacral sitting. Elevating leg rests should be avoided for people with tight hamstrings.

Likewise, seat length must be planned to avoid impingement on the hamstring tendons behind the knee. A seat that is too long will force sacral sitting, as the person seeks back support and the hips straighten and pelvis tips posterior as part of that effort. Seat to back angles play an important role in accommodation for the effect of tight hamstrings on the human body. The seat to back angle must match the available range of the person sitting in the wheelchair. Three considerations are crucial. The frame/back cane, seat/back cushion surface angles, and seat shape. A deep seat well may inadvertently close the seat to back angle, stretching the hamstrings beyond their tolerance. If a deep seat well is needed, opening the seat to back angle through frame or hardware adjustments can allow for an appropriate knee angle for foot support. All of this must correspond with a back cushion that provides adequate support for the pelvis and trunk without restricting function. Once the seating surface shapes and angles that match the person's body shape are established, a pelvic belt is utilized to stabilize the sitting posture. Finding the appropriate angles and adjustments that give priority to pelvic posture is a balancing act.

A CORRECTIVE FORCE FOR HAMSTRINGS[4, 5] - USING NIGHTTIME POSTURAL SUPPORT AND GRAVITY

When hamstring length is shortened, a person's legs will be unable to straighten while lying in bed. Side lying allows them to keep their knees bent to accommodate the tightness, but perpetuates the problem during sleep. In supine the legs will fall to one side (windswept) or assume abducted or adducted postures as they are influenced by gravity and seek a support surface. Prone sleepers experience a similar problem as legs are unable to straighten. In all of these postures, if not protected, hip joints are at risk for dislocation as ligaments are overstretched, and the pelvis is often dragged into rotation or obliquity by the weight of the legs.

In supine lying, gravity is much more easily utilized as a positive force. Risks to the hip and knee joints can be neutralized by harnessing gravitational forces pressing downward to help straighten the knees and hips gently. Muscle tone naturally relaxes in most people during deep stages of sleep, plus growth hormone is primarily secreted at night — adding to the impact of a well-aligned sleeping position during growth spurts. It is important to work closely with clients and families to ensure that sleep quality is improved rather than compromised by night positioning. This requires specialized knowledge not only about biomechanical forces but also sleep hygiene, behavior change, temperature regulation, and strategies to promote successful night positioning.

Techniques that are often used include placing a soft support beneath the legs to accommodate knee and hip flexion (lack of full extension). This will provide the support the lower limbs are seeking while relieving stress to the joints. Firmer lateral supports on both sides improve midline orientation by preventing the legs from falling to the side and promoting more even distribution of gravitational forces on the body. The support beneath the knees should be compressible to allow gentle straightening of the legs by gravity. Providing lateral hip and trunk support beneath a fitted sheet and floating the heels (to prevent pressure from the mattress surface) will promote symmetry and midline orientation, while distributing pressure throughout a large portion of the body (see Figure 5).

HIP FLEXORS – TWO MAJOR MUSCLE GROUPS

The hip flexors strongly influence sitting and lying postures through their effect on the pelvis. We will discuss only the multijoint hip flexors in this article — those muscles that cross both the front of the hip and knee joint, and the muscle that crosses the front of the hip and attaches to the lumbar spine. These complex muscles join the femur and knee to the lumbar spine by way of the pelvis.

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MULTIJOINT MUSCLE ACTION ON THE PELVIS

(CONTINUED FROM PAGE 39)

Shortened hip flexors are obvious during a mat evaluation when a person is unable to straighten their hips while lying supine. The person will often exhibit a significant lumbar lordosis when their hips are extended as much as possible and complain of low back pain or strain. Shortened hip flexors should be considered as a potential issue in people with conditions characterized by low trunk tone, such as muscular dystrophy and spina bifida. Low trunk tone combined with high tone or spasticity elsewhere can also be present in those with spinal cord injuries and cerebral palsy, resulting in highly complex presentations.

THE QUADRICEPS FEMORIS[6] is a four-muscle group at the front of the thigh that flexes the hip and extends the knee. The rectus femoris functions to flex the hip. It also works with the vastus lateralis, vastus medialis and vastus intermedius synergistically to extend the knee. In the seated orientation, the quadriceps will assume a shortened position. A wheelchair user spends many hours in this position and, if trunk weakness or other issues cause forward leaning for trunk stability and upper extremity function, the person may develop shortened quadriceps that limit hip extension and knee flexion. In other words, a person with limited hip extension related to quadriceps tightness may require extension of the knees to avoid the pelvis being pulled into excessive anterior tilt. The head righting response promotes compensatory lumbar lordosis in order to maintain appropriate head orientation and visual field (see Figure 6).

THE PSOAS MAJOR[7] muscle joins the upper and lower parts of the human body, by attaching to the femur at one end and to all the lumbar and the lowest thoracic vertebrae at the other. The psoas primarily flexes and externally rotates the hip and stabilizes the lumbar spine in collaboration with abdominal muscles. When excursion of the psoas is limited, it will pull the pelvis forward into anterior tilt and increase lumbar lordosis when abdominal strength is inadequate to counteract it. Available flexion and extension of the hip-joint, degree of trunk weakness, and flexibility of the lumbar spine can all interact in complex ways to influence a client's presentation in sitting. An individual with shortened psoas major may present sitting with anterior pelvic tilt, external hip rotation, and sometimes extreme lumbar lordosis that is triggered by the head righting response. At the same time, if the quadriceps have adequate range, the individual may be able to tuck their feet beneath the seat for stability (see Figure 7).

SHORTENED HIP FLEXORS - ACCOMMODATING FOR SUCCESSFUL SEATING

Specific strategies are used to accommodate shortened hip flexors in sitting. This is a key point as the seated position is one of function, and not well suited for correction. Techniques will vary according to the affected muscle groups. In people with low tone in the seated orientation, gravity is a big influence and complicates this process. The pelvis must be stabilized on a seat cushion with a seat well appropriately contoured for the individual's pelvic posture.

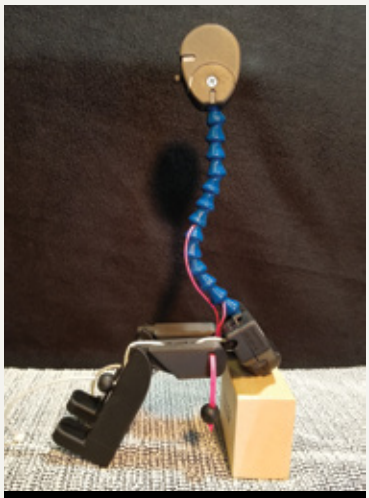

FIGURE 6
The string clamp on the left leg demonstrates a shortened quadriceps combined with trunk weakness, resulting in anterior pelvic tilt and extended knees.

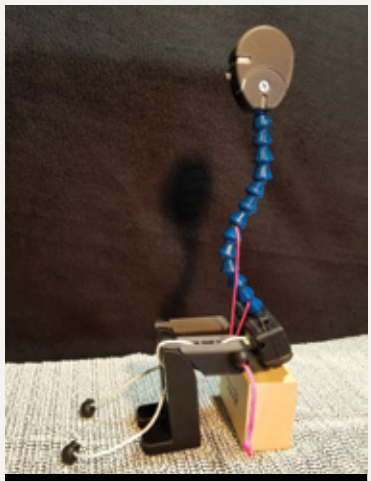

FIGURE 7
SAM illustrates pelvic, hip and lumbar posture affected by shortened psoas major but with sufficient range in the quadriceps to tuck the feet under the front edge of the seat. The hips are in a position of some external rotation.

The back support must have a surface shape that accommodates the often prominent sacrum and buttocks, secondary to lumbar lordosis. Use of tilt in space can help mitigate the effects of gravity on upright posture, but upper extremity function that relies on gravity assist for weak shoulders must be taken into account. The back support must also offer support for the lumbar and upper spine with a shape that will not restrict the flexibility of the spine into a more corrected position when gravity is mitigated by the use of tilt-in- space. A typical error is to provide excessive support for the lumbar region, without leaving space for reduction of the lumbar curve in response to gravity when the spine is sufficiently flexible. Any sort of contour above the lumbar spine that would limit straightening of the back should be avoided, if at all possible.

Adding a pelvic belt with appropriate angle of pull at the ASIS can limit excursion of anterior pelvic tilt in response to gravity. Four points of attachment often work well for this function, if the belt is adjusted to control forward movement of the iliac crest and encourage slight posterior pelvic posture. Lower extremity positioning may differ depending upon the hip flexor group involved.

When both quadriceps and hamstrings are shortened, it is necessary to stabilize the pelvis and then determine foot support placement that allows appropriate knee excursion for comfort and function. Adjustable elevating leg rests may occasionally be helpful (see Figure 8). As an example, Suzanne sat with anterior

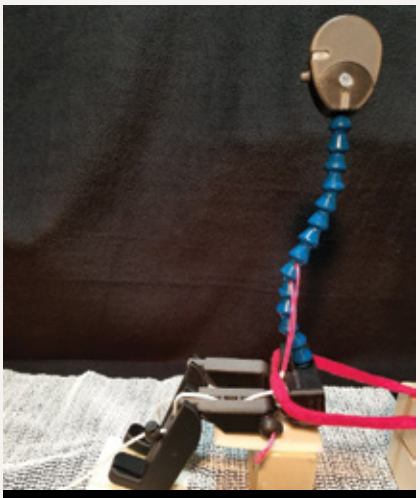

FIGURE 8
SAM illustrates accommodated seated posture for shortened quadriceps.

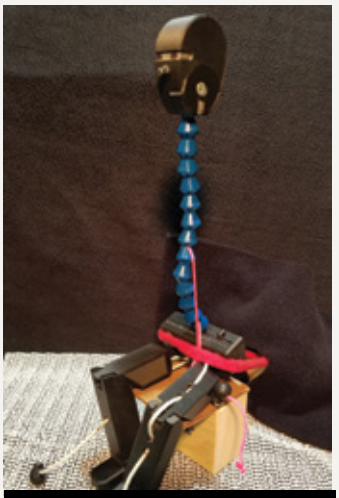

FIGURE 9
SAM illustrates accommodated seated posture for shortened psoas major.

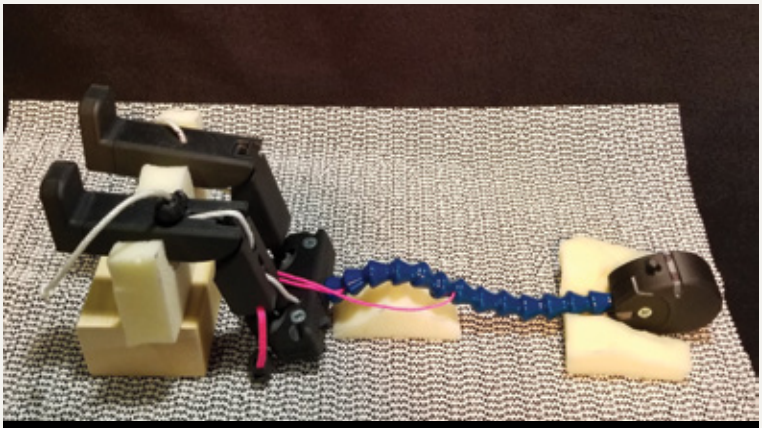

FIGURE 10 SAM illustrates supine lying with lower body support addressing shortened quadriceps.

FIGURE 11 Illustration of supine lying with support for shortened psoas major.

pelvic orientation and experienced knee pain in her wheelchair with 70 degree front rigging. Elevating leg rests relieved her knee pain by releasing excessive stretch on her shortened quadriceps and allowed a more neutral pelvic posture.

Shortened psoas major also requires a stabilized pelvis. Allowing slight external hip abduction and rotation can reduce tension and may foster a more neutral pelvic posture (see Figure 9). Sayuri was an 11-year-old girl with spinal muscular atrophy, who presented sitting with very limited hip extension, adducted hips secondary to her seat cushion, extreme lumbar lordosis that triggered head righting with neck hyperextension, and legs tucked beneath the seat of her wheelchair. To improve her sitting posture for better breathing and visual field, her tight hips were accommodated with abduction and external rotation to promote relaxation, and knee flexion was allowed for comfort. She was also provided with tilt-in-space that allowed her to relax her neck extensor muscles, open her chest to improve respiration, and use her eyes more efficiently.

A CORRECTIVE FORCE FOR HIP FLEXORS — USING NIGHTTIME POSTURAL SUPPORT AND GRAVITY

When hip flexor length is shortened, a person's legs will be unable to straighten while lying in bed. Side lying allows them to keep their hips bent to accommodate the tightness but perpetuates the problem during sleep. In supine lying, the legs will fall to one side (windswept) or assume abducted or adducted postures as they are influenced by gravity and seek a support surface. This position can also be very uncomfortable because of strain on the lower back and is often avoided for this reason. Prone sleepers experience a similar problem as legs are unable to straighten. In addition, sleeping with the heavy spinal column on top of the body tends to worsen the already present tendency to lumbar lordosis. In all these positions hip joints are at risk as ligaments are overstretched, especially in prone when tone is low and legs are abducted. This can promote anterior hip dislocation. While side lying and supine, the pelvis is often dragged into rotation or obliquity by the weight of the legs. However, supine lying can become a constructive resting posture when gravity is utilized to correct postural problems. In the case of hip flexors, gravitational forces applied consistently when out of

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MULTIJOINT MUSCLE ACTION ON THE PELVIS
(CONTINUED FROM PAGE 41)

the wheelchair can help reduce lumbar lordosis and straighten knees and hips gently over time.

In supine lying with shortened hip flexors, certain principles apply. Support the hips and lower legs, allowing relaxation of both hips and knees with midline orientation as much as possible. Support beneath the knees should be compressible and may need to be quite high to relax tension in the hip flexors. Knees can be flexed or extended as much as is comfortable; the focus is on relaxation at the hips and spine. Soft, compressible support can be placed beneath the lumbar spine for comfort and to reduce low back strain, while allowing gravity and muscle relaxation to provide gentle correction toward reduction of lordosis. With shortened psoas major, the hips should be supported in adequate flexion and slight external rotation to allow relaxation of the muscle group (see Figure 11). In contrast, shortened quadriceps may require less hip flexion, and more knee extension. Shortened hip flexors may require considerable hip flexion in supine (see Figure 10). Refer to Figure 5 for images of the lateral hip and trunk supports required for distribution of pressure as described previously.

Sayuri benefitted from night positioning as well as a more appropriate wheelchair and seating system. She had typically slept lying on her side in a curled position to accommodate her tight psoas major, but this perpetuated the problem. It also was not helpful for her breathing, which was already compromised and had prompted a family move to a lower elevation from their high altitude home. In supine, Sayuri required head elevation that was accomplished by laddering pillows. Extremely high but compressible support beneath her knees was added, together with mild external rotation and abduction being allowed to relieve tension on her tight psoas major.

ASYMMETRIES AFFECTING PELVIC POSTURE

The scenarios above have assumed symmetry of tight hamstrings and/or hip flexors side to side. However, human beings often do not present with such symmetry. There may be right/left differences in tone and spasticity. Over time this can lead to ligamentous changes and exacerbate limited movement of the pelvis. Bony changes in the joints may also come into play, such as hip dislocations. A correlation between asymmetrical hip flexion and scoliosis has been demonstrated[8], therefore it is of paramount importance that this problem be recognized and properly accommodated in seating. If the problem is not addressed in sitting, the result is likely to be a compensatory spinal curve that will eventually become scoliosis.

When one hip cannot flex as much as the other, that upper leg will pry the pelvis higher on that side into an oblique position, when sitting on a flat surface (see Figure 12). This oblique pelvic posture will promote a compensatory spinal curve when the head righting response is triggered in order to preserve head orientation. In addition, the more extended side may tend to rotate forward for relief of the obliquity and pressure on the underside of the upper leg. Thus it is crucial that a less flexed hip be accommodated to limit these complications from occurring. This is done by angling the seat surface downward under the

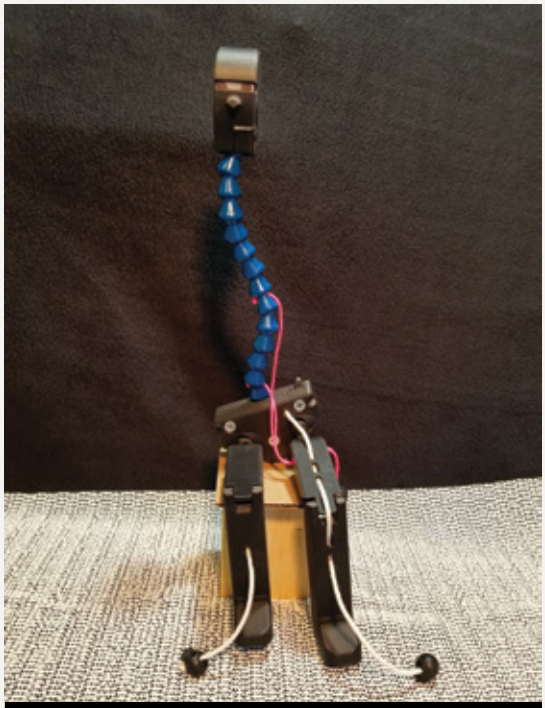

FIGURE 12
SAM illustrates the effect of asymmetrical hip flexion causing the more extended upper leg to pry the pelvis into an oblique posture causing a compensatory spinal curve.

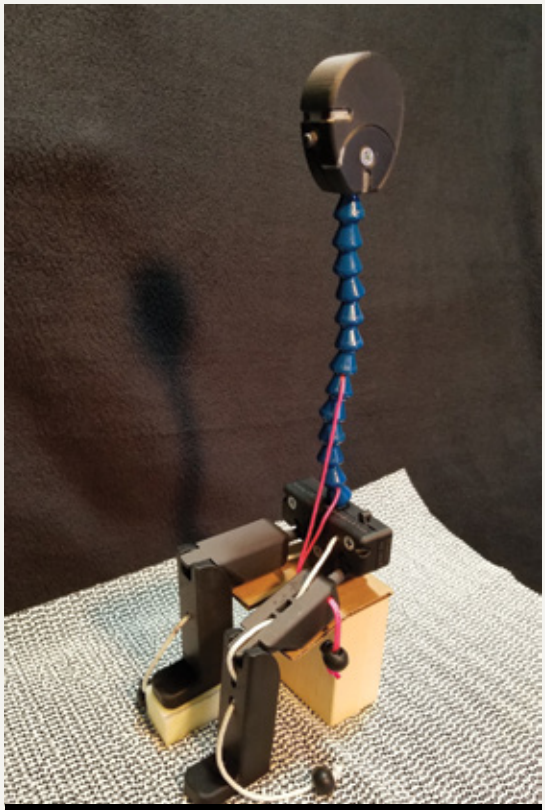

FIGURE 13
A modified seat surface under the upper leg that is more extended than the other leg relieves the prying motion the femur exerts on the pelvis and allows the pelvis and spine to return to a neutral posture.

leg that is more extended than the other one (split seat angle) (see Figure 13). This will accommodate the right/left differences and allow the pelvis to bear weight more symmetrically.

Ray is a 10-year-old boy with spastic cerebral palsy. Dislocation and subsequent hip arthroplasty left him with asymmetrical hip flexion range. His left hip was limited to 105 degrees of extension while his right hip flexion was in the typical range and adequate for sitting. Ray was seen for a seating evaluation with complaints of pain at the region of his right ischial tuberosity. As he sat on his flat seat cushion, his left upper leg contacted it first and shifted his weight toward his right hip causing a pelvic obliquity and excessive pressure on that side. Ray was at high risk for developing a pressure injury and also scoliosis, as he adopted a compensatory spinal curve to accommodate his pelvic asymmetry as well as a head tilt. By replacing his flat, planar seat cushion with a contoured one that matched his body shape, including his upper leg asymmetry, Ray was able to sit with his pelvis level. He no longer complained of pain and his spinal curve resolved.

CONCLUSION:

The complexities of seating and positioning for people with dysfunction of multijoint muscles surrounding the pelvis, and consequent influences on the posture and function of the entire body, are the focus of this article. A SAM was used to illustrate these concepts. Remember, what happens at the lips and fingertips begins at the hips!

We have not discussed in-depth seating and positioning specific to the trunk, head and upper extremities. These can only be appropriately addressed once issues related to pelvic posture are analyzed and understood. Similarly, the information in this article related to night-time therapeutic positioning is limited to specific concepts surrounding pelvic posture. It does not replace more in-depth understanding of 24-hour posture care management including specific techniques for chest/spine protection and restoration, temperature regulation and sleep hygiene in order to provide safe and effective interventions at night. See resources for further information on some of these topics.

CONTACT THE AUTHORS

Sammie may be reached at W.SAMMIE@GMAIL.COM

Tamara may be reached at TAMARA@POSTURE24-7.ORG

REFERENCES

1. Hammie, a simplified anatomical model: www.meethammie.com

2. Hamstring Muscle – An Overview. Science Direct Topics. https://www.sciencedirect.com/topics/medicine-and-dentistry/hamstring-muscle Accessed January 2020.

3. Lange, M. L., & Minkel, J.L. (2018) Seating and Wheeled Mobility: A Clinical Resource Guide. Slack Incorporated.

4. Kittelson-Aldred, T. & Hoffman, L.E. (2017) 24-Hour Posture Care Management: Supporting People Night and Day. Rehab Management. http://www.rehabpub.com/2017/09/24-hour-posture-care-management-supporting-people-night-day/ Accessed January 2020.

5. Information about 24 hour posture care and management: www.posture24-7.org

6. Bordoni B, Varacallo M. (2018) Anatomy, Bony Pelvis and Lower Limb, Thigh Quadriceps Muscle. [Updated 2018 Dec 15]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2019 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK513334/

7. Penning, L. (2000). Psoas muscle and lumbar spine stability: a concept uniting existing controversies. European Spine Journal, 9(6), 577–585. doi: 10.1007/s005860000184

8. Ágústsson, A., Sveinsson, Þ., & Rodby-Bousquet, E. (2017). The effect of asymmetrical limited hip flexion on seating posture, scoliosis and windswept hip distortion. Research in Developmental Disabilities, 71, 18–23. doi: 10.1016/j.ridd.2017.09.019

9. Toole, P. (2019) Posture care management: from better sleep to better sitting. NRRTS Directions. 2019.6. 28-35

10. Kittelson-Aldred, T. (2019) 24-7 posture care management: making a difference for all ages. NRRTS Directions. 2019.6. 36-38

T. Sammie Wakefield is an occupational therapist who has worked in seating and mobility for over 37 years. She has degrees from Berea College and Texas Woman's University and is a founding mother of New Hampshire ATECH — an assistive technology program that served clients in New Hampshire for over 30 years. Now retired from paid work, she continues her 13 years of volunteer work with Eleanore's Project both as a board member and by sharing her knowledge and skills with American occupational therapy students and therapists in Peru. She is the inventor of Hammie, a simplified anatomical model and teaching tool for understanding the multijoint muscles of the pelvis.

Tamara Kittelson-Aldred is an occupational therapist, RESNA Assistive Technology Professional/Seating and Mobility Specialist, and holds advanced postural care certificates through the U.K. Open College Network West Midland. She directs the Montana Postural Care Project and Eleanore's Project, promoting posture care and management with responsible wheelchair provision in low-resource settings. Kittelson-Aldred has written and presented on these topics in the United States, Canada, Peru and Colombia. She has served individuals with complex neurodisabilities in Montana since 1983, currently through Moving Mountains Therapy Center, and is a Friend of NRRTS. She credits her daughter Eleanore, born with cerebral palsy and profound deafness, as her best teacher.

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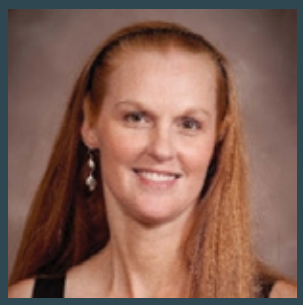
Lisa K. Kenyon, PT, DPT, PhD, PCS



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REHAB CASE STUDY

JOURNEY TO GET A STANDING WHEELCHAIR

Written by: **JENNITH BERNSTEIN, PT, DPT, ATP/SMS**

NRRTS WOULD LIKE TO THANK PERMOBIL FOR SPONSORING THIS ARTICLE.

INTRODUCTION:

When the opportunity arises to provide the optimal mobility device to a client, clinicians and providers share the goal of recommending the device with the best possible functional outcome. Given the funding and health care climate we all must manage daily, there are times when our recommendations get overruled by traditional funding sources. This rehab case study will tell the story of a client who was experiencing bone mass loss, decreased range of motion in his lower extremities, increased spasticity, decreased independence in daily activities, and decreased participation in family and school activities. During the evaluation process for new power mobility equipment, the treatment team decided to put best practice ahead of funding limitations and find a way to provide Landon with the equipment that best matched his goals.

BACKGROUND:

Landon and his family arrived at seating clinic with recommendations from a physician to obtain a new power wheelchair. Landon was born at 30 weeks gestation, spending five weeks in the neonatal intensive care unit (NICU). He was diagnosed with periventricular leukomalacia (PVL) which, according to the National Institutes of Health, often leads to cerebral palsy, as it did with Landon. He presented with motor and coordination and weakness, which are deficits associated with spastic quadriplegia. Landon has many loving attributes: he is very active in school, loves to sing, is the oldest sibling of six brothers and sisters, enjoys going to Disney World, and craves to be independent. At the time of the evaluation, Landon was a 14-year-old vibrant, talkative and engaging young man.

"HE WAS DIAGNOSED WITH PERIVENTRICULAR LEUKOMALACIA (PVL) WHICH, ACCORDING TO THE NATIONAL INSTITUTES OF HEALTH, OFTEN LEADS TO CEREBRAL PALSY, AS IT DID WITH LANDON. HE PRESENTED WITH MOTOR AND COORDINATION AND WEAKNESS, WHICH ARE DEFICITS ASSOCIATED WITH SPASTIC QUADRIPLEGIA."

A thorough evaluation with multiple team members was completed. Landon's physician was growing increasingly concerned about his bone mineral density (BMD) and related decreased functional

FIGURE 1 Landon standing with posterior walker.

FIGURE 2 Landon seated in previous power wheelchair.

FIGURE 3 Landon having difficulty reaching when in a low seated position.

mobility. In addition, his family reported that as Landon was growing in height and weight, it was getting harder for him to stand independently or ambulate functionally (see Figure 1) and "even a sneeze would make him fall." They also noticed that when he was seated in his previous power wheelchair, his posture was not as upright as it had been in the past (see Figure 2). In addition, Landon wished to become an independent young adult. His goal was to one day be able to move away, study at college, and get a job like anyone else.

EVALUATION:

Landon presented with impairments in multiple body functions and structures including:

- Increased spasticity impacting all four limbs as well as his trunk.
- Joint range of motion limitations in bilateral hips and knees.
- Osteopenia at the femur.
- Pain and discomfort when sitting for long durations throughout his spine as well as on his or the sitting surface,
- Decreased respiratory capacity and voice production
- A mat evaluation was completed to address postural changes and concerns.

His primary activity and participation limitations included:

- Non-functional ambulation with a posterior rolling walker.
- Requiring more assistance with transfers from family members into a static standing frame.
- Inability to access items in his kitchen at home.
- Difficulty interacting with peers.
- Taking increased time to complete daily care activities.
- Decreased desire to participate in classroom discussions (see Figure 3).

His family already owned an accessible vehicle for his existing power mobility device (a power wheelchair with power tilt) as well as an accessible home (ramped entrance with wide doorways). Landon was able to drive and manage his current power wheelchair independently; however, he noticed there were areas he could not access, or where he would get stuck. In addition, he was uncomfortable and could not change positions the way he needed to.

The occupational therapist and ATP worked with the manufacturer's representative to obtain a demonstration power standing wheelchair for Landon to test. Landon was eager to try it out and then procure this device, and his family, clinician, equipment provider and manufacturer sales representative had no choice but to be along for the ride!

During a trial of the standing wheelchair, the team discussed programming options for the standing sequence, back support solutions, and seat cushion recommendations. At this point, the equipment provider informed Landon and his family about any items that could potentially be denied by insurance, so that they could make an informed decision regarding the team's recommendations. The mobility base recommended was a Group 4 power wheelchair with the following power seat functions: tilt, recline, elevating and articulating leg rest, seat elevation device, and standing. A denial was anticipated for the power seat elevation device and power stand functions including powered anti-tip bars, which are required both for stability and for driving while standing. The family chose to proceed with submitting all items to private insurance and then seeking alternative solutions if needed once a funding decision had been made. The team believed that a power standing wheelchair was the best possible standard of practice for Landon and all parties were committed to any additional time or work associated with achieving these goals.

DETAILED DOCUMENTATION

The team knew that comprehensive documentation would be critical in order for Landon to obtain a power standing wheelchair. The clinical documentation highlighted the following and research was cited when appropriate:

- Increased independence with MRADLs when client utilized a power standing wheelchair when compared to a power wheelchair without the standing function. MRADLs highlighted included meal preparation, grooming, transferring, chores, medication management and feeding activities (see Figure 4 and Figure 5).

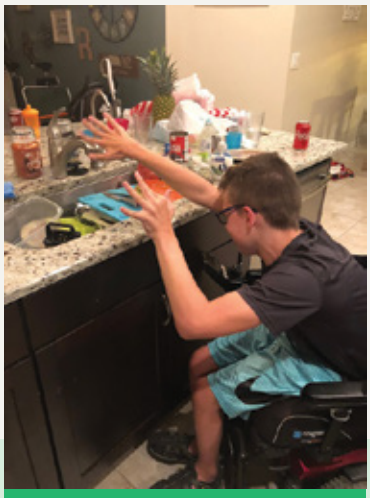

FIGURE 4 Landon trying to get water from the sink when seated.

FIGURE 5
Landon getting water while standing in power wheelchair.

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JOURNEY TO GET A STANDING WHEELCHAIR ...
(CONTINUED FROM PAGE 49)

FIGURE 6 Landon felt like he was unable to interact and be independent in the community with previous power chair.

• Increased safety and independence with transfers. In a power wheelchair without the seat elevation device, he required maximum assistance for a stand pivot transfer. In a power wheelchair with only the power seat elevation device (not power stand), he required moderate assistance for stand pivot transfer. In a power wheelchair with only power stand, he required minimum assistance for a stand pivot transfer.

• Power adjustable seat height required for transfer activities, reaching tasks in a classroom setting when he requires a pressure relief from being in the standing position as well as increased independence with standing, reaching, elevator button access when an environment does not accommodate a power standing position.

• Improved pressure management with power stand when compared to power tilt and power tilt and recline alone.

• Client requires power tilt and power recline for pressure management when power standing is not able to be achieved due to environmental limitations or pressure relief from lower extremities in addition to safety when driving his power wheelchair due to kyphotic posture, balance and stability when negotiating uneven terrain and negotiating ramps.

• Power recline is required for positioning to manage spasticity that results in excessive hip, knee, and trunk extension, which limits his functional use of his lower extremities.

• Power elevating leg rests are required due to lower extremity edema management as well as to achieve specific safe knee position for anterior tilt as well as standing. In addition, recline cannot be used without power elevating leg rests due to the strain on two-joint musculature of the hamstrings and quadriceps due to decreased hip and knee range of motion.

• Improved spasticity management in the lower extremities with power standing trial that could not be obtained from any other power mobility device.

• More frequent standing bouts throughout the day to address osteopenia. With a power standing wheelchair, client can stand independently. The use of a static standing device required maximum assistance for transfers and moderate assistance to enter and exit a standing position. Landon was dependent for MRADLs in a static standing frame, but with the power standing chair, he was independent brushing his teeth, washing his hands and getting a drink.

• Landon was showing decreased ability to participate in school and social activities due to pain, decreased line of sight, discomfort, lack of voice production, increased need for overhead reaching, and becoming more withdrawn using a power wheelchair with tilt only (see Figure 6).

Medical, clinical and equipment provider documentation was completed and submitted. The first communication from the private insurance company was a denial letter and although anticipated by all from the beginning, was still disheartening. The primary items denied included power seat elevation device, power stand and drive components. On this specific power wheelchair base, the power seat elevation device is required along with other power seat functions to achieve the ability to transition into a standing position, and Landon required the use of the seat elevator independently of standing. For example, certain environmental limitations may require a seat elevator based on the surface height he needed to reach. Let's take a soap dispenser in a public restroom. If he was standing, his reach would actually exceed the height required; however, if he was able to utilize his power seat elevation device and increase his reach by just 4 inches instead of 10 inches, he would be a the perfect height to access the soap dispenser independently.

> "ON THIS SPECIFIC POWER WHEELCHAIR BASE, THE POWER SEAT ELEVATION DEVICE IS REQUIRED ALONG WITH OTHER POWER SEAT FUNCTIONS TO ACHIEVE THE ABILITY TO TRANSITION INTO A STANDING POSITION AND LANDON REQUIRED THE USE OF THE SEAT ELEVATOR INDEPENDENTLY OF STANDING.

CONTINUED ON PAGE 52


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JOURNEY TO GET A STANDING WHEELCHAIR ...
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Upon the first round of appeals led by the treating clinician and the equipment provider, the team was able to successfully obtain approval for the power seat elevation device. This was an amazing success for Landon and his team, as it was the first time this device was ever approved by their specific private insurance company.

However, the journey to a standing power wheelchair was not complete. The family appealed the power stand function denial a second time, but to no avail. Despite medical, functional, social and psychological benefits clearly outlined and supported, the power stand function was still denied. At this point, Landon was not ready to give up and neither was his team. They investigated all alternative funding solutions and, with support from a nonprofit foundation, were able to obtain funding for the remaining denied items. In addition, the equipment provider agreed that they would provide service to any noncovered item related to the power stand function.

Landon's journey to stand was an incredibly big undertaking that did not happen overnight. It was almost a one-year-long process, and all team members were in support of the additional time, energy, and cost that was required. However, though perseverance, creativity and support, Landon was able to achieve his goal of standing whenever, wherever, and however he wanted to.

OUTCOMES:

When an opportunity presents itself, Landon seizes it and doesn't look back. With his power standing wheelchair, he has seen a tremendous amount of improvement in his physical health, functional independence, social interaction, family participation, communication, and overall quality of life.

Six months following the provision of his power standing wheelchair, we followed up with Landon to see how he was doing and to evaluate how the power standing wheelchair was impacting his life. He reported the following:

- Reduced cervical and lumbar spine pain.
- Elimination of pain at his sitting surface.
- No further loss of hip and knee range of motion

FIGURE 7 Landon's upright seated posture improving with use of power standing wheelchair and positioning components.

FIGURE 8 Landon successfully accessing kitchen cabinets.

FIGURE 9 Landon looking at himself upright in a mirror for the first time.

FIGURE 10 Landon interacting and playing with younger siblings.

• Improved upright seated posture (see Figure 7) with decrease of his reducible posterior pelvic tilt and thoracic kyphosis which, in turn, improved his line of site, respiration and voice production.
• Increase in bone mineral density as determined by his physician.
Although no generalized statements can be made from these results, we can see below that after receiving the power standing wheelchair, the standard deviations on his lumbar spine Z-Score improved remarkably. This may indicate preservation of remaining bone mineral density in the future.

CLIENT LUMBAR Z-SCORE MEASUREMENTS

DATE	LUMBAR SPINE Z-SCORE	BONE MINERAL DENSITY
May 2017	-1.6	.528
December 2018	-2.5	.491
February 2019 — 6 months after provision of power standing wheelchair	-1.1	.565

Functionally, the improvement in Landon's independence exceeded our expectations! He was able to get items out of his kitchen cabinets (see Figure 8), pour a glass of water, write on the white board at school, wash his hands and look at himself in the bathroom mirror for the first time (see Figure 9).

Participation and social activities also improved. His bean bag toss score improved when playing with his siblings (see Figure 10). Landon returned to the choir (see Figure 11) as he noticed an improvement in his singing voice, and shares: "It is kind of cool to be able to stand and sing, because you know that is how you do it, that is the proper way to do it."

CONCLUSION:

Funding challenges can be a deterrent or barrier to what we want to do for our clients — provide the most appropriate mobility solution. Landon's case set a precedence with his private insurance in that they paid for a power seat elevation device after appeal; so not only will Landon benefit from this approval, many others will as well.

CONTINUED ON PAGE 54

JOURNEY TO GET A STANDING WHEELCHAIR ...
(CONTINUED FROM PAGE 53)

> "LANDON'S CASE SET A PRECEDENCE WITH HIS PRIVATE INSURANCE IN THAT THEY PAID FOR A POWER SEAT ELEVATION DEVICE AFTER APPEAL; SO NOT ONLY WILL LANDON BENEFIT FROM THIS APPROVAL, MANY OTHERS WILL AS WELL.

In closing, we can continue to show successful interventions for items not traditionally funded by documenting changes from a child and parent's perspective through a "participatory photovoice" or photo journey (Feldner, Logan & Galloway, 2018). Along with comprehensive documentation, evaluation and teamwork can help to inform practice decisions in the future. It is our hope to continue to follow Landon to obtain objective outcome measures for medical, functional, and quality of life indicators — but also to see the joy on his face for years to come. Take it from Landon "[t]his was very important because it has increased my independence and my self-esteem" (see Figure 12).

FIGURE 11 Landon in choir practice.

RESOURCES

Alternative Funding Resource List from Permobil:https://cdn2.hubspot.net/hubfs/1624307/Education%20Resources/AlternateFundingDoc.pdf

RESNA position on the Application of Wheelchair Standing Devices: https://nrrts.org/wp-content/uploads/2019/06/RESNAStandingPositionPaper_Dec2013.pdf

NCART Standing Device Funding Guideline: https://www.ncart.us/uploads/userfiles/files/ncart-standing-device-funding-guide.pdf

CONTACT THE AUTHOR
Jennith may be reached at JENNITH.BERNSTEIN@PERMOBIL.COM

REFERENCES
Full references available upon request

FIGURE 12 Landon feeling confident and increased self-esteem

Jennith Bernstein is a physical therapist based in Atlanta, Georgia. She has focused her career on seating and wheeled mobility, beginning at the Shepherd Center. Bernstein completed her master's in physical therapy at North Georgia College and State University and return to complete her transitional DPT at the University of Texas Medical Branch in 2014. Bernstein has served as a volunteer teacher in Guatemala as well as presented at national and international conferences. Bernstein joined Permobil in 2016 as a regional clinical education manager.

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THE LATEST UPDATES ON MEDICARE'S NEW STANDARD WRITTEN ORDER

Written by: **CLAUDIA AMORTEGUI, PRESIDENT, THE ORION CONSULTING GROUP, INC.**

Lately it seems as if Medicare is finally on our side on some things; however, those things also seem to be a bit of an unknown.

First, is the follow-up to my last article – the new Standard Written Order (SWO) that went into effect Jan. 1, 2020. We have received some answers to our original questions, but there are still some lingering items.

The Medicare contractors (Noridian & CGS) have both clearly stated that for Complex Rehab Technology (CRT) power wheelchairs, providers will likely have two separate SWOs. The first SWO must be completed by the practitioner (physician, nurse practitioner, physician assistant, certified nurse specialist). This SWO is very basic and similar to the old 7-Element Order (7EO). The bonus with this new SWO is that the face-to-face (FTF) date is no longer required on the order – however, the actual face-to-face visit must still occur. The other bonus is that the previous 45-day requirement to obtain the 7EO has also been removed.

> "KEEP IN MIND THAT THE FIRST SWO IS REQUIRED PRIOR TO DELIVERY AND THE SECOND ONE CAN TECHNICALLY BE RECEIVED PRIOR TO BILLING."

The second SWO is not officially required, but all accessories/components being separately billed must be individually listed on the SWO. Since the Complex Rehab Technology (CRT) supplier is not allowed to prepare the SWO for powered mobility devices, the chances of the practitioner listing every part and piece being billed separately (without being told) is slim to none. Therefore, they will be required. For this second, SWO, the CRT supplier is able to prepare this entire form; think of it as the old detailed product description.

Keep in mind that the first SWO is required prior to delivery and the second one can technically be received prior to billing. However, since power wheelchairs are submitted through the prior authorization program, I strongly recommend that providers obtain both of these prior to submitting that request to avoid any possible denials.

For manual wheelchairs and all other durable medical equipment, prosthetics, orthotics and supplies (DMEPOS), only one SWO is needed since the DME/CRT providers can complete it from the start.

Since my last article, we also learned the two SWOs for power wheelchairs could be signed on the same date, as can be the wheelchair seating evaluation. Be sure to remember that the practitioner still must complete a specific powered mobility face-to-face encounter with the client. Like before, much of this this evaluation can be referred to a clinician specialized in seating and positioning, but the client still must see the practitioner.

Medicare has stated that the required "general description" required on any SWO should be as specific as possible. This should be rather easy for all the SWOs that the DME/CRT provider can complete. When it comes to power wheelchairs and their corresponding SWO, it is my opinion, that the description can still be rather general (i.e., power wheelchair), but the second SWO, which is prepared by the DME/CRT provider and contains the additional components, should also include the detailed power wheelchair base information – including the manufacturer name and model and/or HCPC code.

The hope is that by the time this article is published or within a couple weeks after, the Medicare contractors will have posted a detailed FAQ on this topic. I certainly cannot promise that these will be perfect, but hopefully it will be darn close. Also, do not forget that these are new Medicare rules. Everyone needs to be certain they still meet all the rules required by other payers.

Another topic people are talking about is related to the bill passed at the end of 2019 that included protections for CRT manual wheelchairs and their accessories/components. This was a huge win after a long hard battle. This bill permanently exempts CRT manual wheelchair bases from the Medicare Competitive Bid Program (CBP). It also provides an 18-month suspension/hold in the current application of the CBP payment rates to the CRT manual wheelchair accessories/components – from Jan. 1, 2020, to June 30, 2021. This is all great news, but when it comes to the allowables/payments for these components, nothing has yet to happen and it is nearing the end of the first quarter of 2020. So now what?

> "ONE THING TO KEEP IN MIND IS THE PROVIDERS NOT ONLY HAVE TO PLAN FOR THE RETROACTIVE PAYMENTS FROM MEDICARE, BUT ALSO HOW THIS WILL AFFECT THE REIMBURSEMENT FROM THE SECONDARY PAYERS."

Centers for Medicare and Medicaid Services has stated they plan to announce the new rates and the plan for such claims to be paid starting in July of this year. This is well and good but what about the claims for those orders delivered between Jan. 1, 2020, and June 30, 2020? Medicare has stated that any difference owed to providers for the specific codes will be paid retroactively to the official start date of Jan. 1, 2020. For now, they do want the providers to continue to bill these orders as they normally would. Once they finalize their plan, providers will be notified. They will also likely announce the use of a new/current billing modifier for all claims affected moving forward after that date. Simply put … stay tuned. One thing to keep in mind is the providers not only have to plan for the retroactive payments from Medicare, but also how this will affect the reimbursement from the secondary payers.

With this year just getting started it seems as if we will all be kept on our toes. The bonus is that overall this has truly been good news for the industry. We just have to make our way through the bumps as everything settles.

CONTACT THE AUTHOR

Claudia may be reached at
INFO@ORIONREIMBURSEMENT.COM

Claudia Amortegui has a Master of Business Administration and more than 20 years of experience in the DMEPOS industry. Her experience comes from having worked on all sides of the industry, including the DMEPOS Medicare contractor, supplier, manufacturer and consultant. For many of these years Amortegui has focused on the rehabilitation side of the industry. Her work has allowed her to understand the different nuances of complex rehab versus standard DME. This rare combination of industry experiences enables Amortegui and her team at The Orion Group to assist ATPs, referrals, reimbursement staff and funding sources in understanding the reimbursement process as it relates to complex rehab.

WHAT HAVE YOU DONE FOR ME LATELY?

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

Going to seating and mobility conferences to represent NRRTS is one of the best parts of my job. It gives me an opportunity to talk with Registrants and catch up. Also, part of my job is to talk to potential new Registrants.

Recently, a person stopped at my booth (I use chocolate for bait) to inquire about NRRTS. A Registrant was also partaking of the bait, so I asked them to explain why NRRTS was worth the investment. If only I had recorded all the great things the Registrant said, without any hesitation!

The Registrant explained that education alone was worth the investment. Having high-quality education at your fingertips is a huge benefit as there are many courses in the On- Demand Library. What do you need to know more about?

The Registrant went on to talk about DIRECTIONS, the ad-hoc Complex Rehab Technology (CRT) journal. We flipped through the pages of a recent issue to look at the articles and the content. There is something for everyone in this magazine. Each issue has articles related to funding and advocacy, but more importantly, DIRECTIONS covers the people who use, prescribe, manufacturer and supply CRT products. We emphasize the idea that the provision of CRT is a team sport. The CRT team is made up of individuals who have a passion for making life better for their clients.

And, if that weren't enough, in each issue of DIRECTIONS, there is a CEU article. What a great way to earn those credits! The authors of these articles put a lot of work into providing great information in a meaningful way.

Being able to share these resources with your funding sources, referral sources and families provides them with great information and ideas.

By now, we were all eating the chocolate.

Being part of NRRTS supports the mission: Professionalism and Advocacy. That is the mission.

Thank you to all the current Registrants and FONs. Share the mission. Share the vision.

CONTACT THE AUTHOR
Weesie may be reached at WWALKER@NRRTS.ORG

"BEING ABLE TO SHARE THESE RESOURCES WITH YOUR FUNDING SOURCES, REFERRAL SOURCES AND FAMILIES PROVIDES THEM WITH GREAT INFORMATION AND IDEAS.

BY NOW, WE WERE ALL EATING THE CHOCOLATE."

Weesie Walker, ATP/SMS, is the executive director of NRRTS. She has more than 25 years of experience as a Complex Rehab Technology supplier. She has served on the NRRTS and GAMES board of directors and the Professional Standards Board of RESNA. 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.

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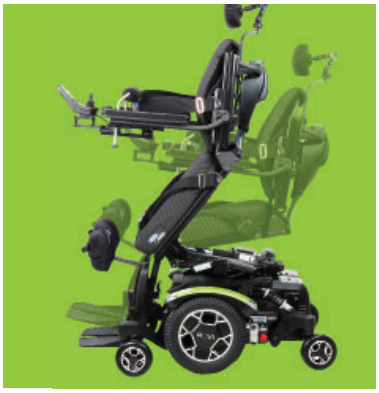

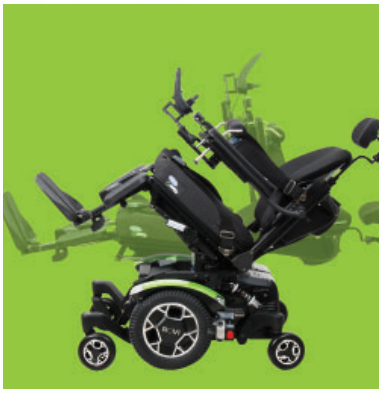

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NEW NRRTS REGISTRANTS

Congratulations to the newest NRRTS Registrants. NAMES INCLUDED ARE FROM JAN. 16 THROUGH FEB. 26, 2020.

Sam Abboushi, RRTS®
3rd St Medical Supply Inc.
1261 S Lyon St Ste 405
Santa Ana, CA 92705-4500
Telephone: 714-988-6600
Fax: 714-912-2992
Registration Date: 1/30/2020

Steven J Carpenter, RRTS®
Phoenix Rehab and Mobility
410 Dromedary St
Woodbury, GA 30293
Telephone: 706-975-0935
Fax: 888-920-8115
Registration Date: 1/31/2020

Timothy Davis, RRTS®
National Seating & Mobility, Inc.
5444 East Ave Unit A
Countryside, IL 60525-3671
Telephone: 844-774-8348
Registration Date: 2/17/2020

Nicholas Hura, ATP, RRTS®
University of Michigan Wheelchair Seating Service
2850 S Industrial Hwy Ste 500
Ann Arbor, MI 48104-6796
Telephone: 734-672-4116
Registration Date: 1/22/2020

Adam Majors, ATP, CRTS®
Alliance Rehab & Medical Equipment
3502 Interstate 70 Drive SE
Columbia, MO 65201-6815
Telephone: 800-813-1656
Toll Free: 800-899-7123
Fax: 417-581-5762
Registration Date: 1/29/2020

Brian McGrath, RRTS®
National Seating & Mobility, Inc.
730 Vistal Park Dr
Pittsburgh, PA 15205
Telephone: 800-500-2429
Registration Date: 2/7/2020

Charles Mitchell, RRTS®
National Seating & Mobility, Inc.
200 Roxalana Business Park
Dunbar, WV 25064-2727
Telephone: 304-993-9204
Registration Date: 2/20/2020

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 JAN. 16 THROUGH FEB. 26, 2020.

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

Michael Emerson, ATP Aurora, CO

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 INCLUDED ARE FROM JAN. 16 THROUGH FEB. 26, 2020.

Adam Majors, ATP, CRTS®
Alliance Rehab & Medical Equipment
Columbia, MO

Jill Porter, OTR, ATP, CRTS®
National Seating & Mobility, Inc.
New Brighton, MN

RENEWED NRRTS REGISTRANTS

The following individuals renewed their registry with NRRTS between Jan. 16 through Feb. 26, 2020.

PLEASE NOTE **IF YOU RENEWED AFTER FEB 26,** YOUR NAME WILL APPEAR IN A FUTURE ISSUE OF DIRECTIONS.
IF YOU RENEWED PRIOR TO JAN 11, 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.

Shelby Bass, ATP, CRTS®
Becky Bertoncino, ATP, CRTS®
Robert C. Bleil, ATP, CRTS®
Morgan Bray, RRTS®
James Castruita, ATP, CRTS®
John Kevin Conley, ATP, CRTS®
Douglas Crana, ATP, CRTS®
Roger Dabbs, ATP, CRTS®
John Robert Farris, RRTS®
Michele A. Froehlich, ATP, CRTS®
Brian Gough, ATP, CRTS®
David Gurganus, ATP, CRTS®
Xavier Harrison, ATP, CRTS®
Ronald D. Hejna, ATP/SMS, CRTS®
Cheryl Henckel, OTR, ATP, CRTS®
Jonathan Hyzak, ATP, CRTS®
Kevin Jackson, ATP, CRTS®
Timothy Jarmuzek, ATP, CRTS®
Ray Kent, ATP, CRTS®
James Z. Leddy, RRTS®
Kenneth Livengood, ATP, CRTS®
Justin Look, ATP, CRTS®
Butley J. Mahler, Jr., ATP, CRTS®
Randy Malcolm, ATP, CRTS®
Leigh Ann Matthews, ATP, CRTS®
Rick L. Mayes, ATP, CRTS®
Tim McClaren, ATP, CRTS®
Christopher P. McNulty, ATP, CRTS®
Derek Miller, ATP, CRTS®
Gregory Allan Moorhouse, ATP, CRTS®
Charles Edward Nichols, ATP, CRTS®
Mark D. Patten, ATP, CRTS®
Dena Paxton, ATP, CRTS®
Brian Perkowski, PT, ATP, CRTS®
Ben Peters, ATP, CRTS®
Jill Porter, OTR, ATP, CRTS®
Kenneth G. Riffel, ATP, CRTS®
Eugene Salisbury, PTA, ATP, CRTS®
Emily Schreiber, RRTS®
Dewey L. Seagraves, ATP, CRTS®
Rodger Smith, ATP, CRTS®
Anthony J. Soria, Jr., RRTS®
Brian Spiller, RRTS®
Leslie Benjamin Todd, ATP/SMS, CRTS®
John R. Vaughn, ATP, CRTS®
Peter R. Webb, ATP, CRTS®
Charlotte Welch, PTA, CLT, ATP, RRTS®
Randall D. White, ATP, CRTS®
Pam Yates, ATP, CRTS®
John P. Zambotti, ATP, CRTS®
Frank T. Zugovitz, ATP, CRTS®


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