

DIRECTIONS



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CLAUDIA AMORTEGUI



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 as a DMEPOS Medicare contractor and a supplier, manufacturer and consultant. For many of these years, Amortegui has focused on the rehab side of the industry. Her work has allowed her to understand the different nuances of complex rehab versus standard durable medical equipment. [SEE PAGE 42](#)

ALEXANDRA (ALEX) BENNEWITH



Bennewith is vice president of government relations for United Spinal Association. Bennewith advocates for legislation and regulations regarding disability and health policy at both the federal and state level. She works closely with a range of stakeholders in the durable medical equipment and supplies, prescription drug, public health and disability communities. She graduated from Brandeis University and received a Master of Public Administration from American University. [SEE PAGE 22](#)

BECKY BREAUX, MS, OTR/L, ATP



Breaux is a research instructor and assistive technology specialist with Assistive Technology Partners in the Department of Bioengineering at the University of Colorado Denver Anschutz Medical Campus. She has 22 years of experience working as an occupational therapist and educator. She has presented and written articles on a variety of topics related to assistive technology and wheelchair seating and mobility at the local, state and national levels. Breaux has experience in various settings including inpatient pediatric rehabilitation, early intervention, public schools, and as an educator at the university level. For the past 10 years, she has worked at an outpatient specialty clinic, where she provides wheelchair seating and mobility evaluations for people of all ages with Complex Rehabilitation Technology needs. [SEE PAGE 38](#)

JACKIE CASEY, MSC; BSC HONS OT; FHEA; OTR/L



Casey has worked in the field of seating and positioning in various capacities since graduating in the U.K. as an occupational therapist in 1994. She has worked in elderly rehabilitation and with children with physical, sensory and/or intellectual impairments. She has two decades of experience in teaching and clinical research and working with industry in the areas of seating and client-centered practice. She was program director at the University of Ulster, Northern Ireland, and continues to hold an associate lecturer position, supervising postgraduate research students. She joined Ottobock in 2016, as the clinical specialist for Human Mobility, North America, providing clinical education and support on seating and positioning. [SEE PAGE 14](#)

DON CLAYBACK



Clayback is executive director of the National Coalition for Assistive and Rehab Technology (NCART). He has more than 25 years of experience in the Complex Rehab Technology and Home Medical Equipment industries as a provider, consultant and advocate and is actively involved in industry issues and a frequent speaker at state and national conferences. [SEE PAGE 18](#)

LAURA COHEN



Cohen is the executive director of the Clinician Task Force (CTF) a national group of seating and mobility clinicians working to influence Medicare and Medicaid coding, coverage and payment policies for complex rehab and assistive technology devices. The CTF provides clinically relevant information about seating and wheeled mobility device assessment and decision making to policy makers to ensure appropriate access for individuals with disabilities. [SEE PAGE 20](#)

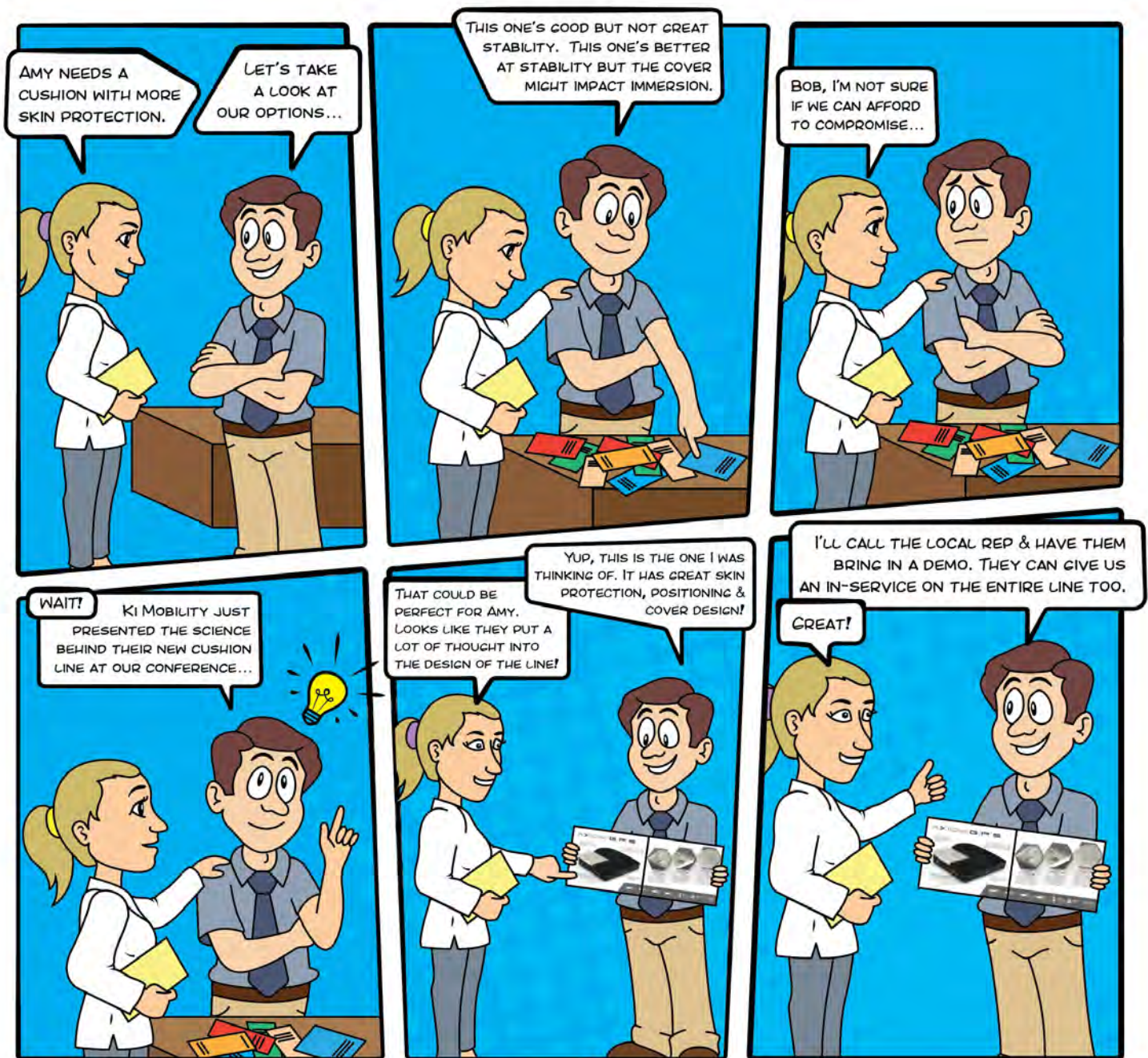
TAMARA KITTELSON-ALDRED, MS, OTR/L, ATP/SMS



Tamara Kittelson-Aldred, MS, OTR/L, ATP/SMS, is an occupational therapist specializing in seating and wheeled mobility and 24-hour postural management, who writes and teaches on these topics in the United States and Peru. Kittelson-Aldred directs the Montana Postural Care Project, funded by the Montana Council on Developmental Disabilities, and Eleanore's Project, promoting responsible wheelchair provision and postural care in Peru. [SEE PAGES 26](#)

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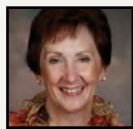
Lange is an occupational therapist with 30 years of experience and has been in private practice, Access to Independence, for 10 years. She is a well-respected lecturer, nationally and internationally, and has authored six book chapters and more than 200 articles. She is the editor of "Fundamentals in Assistive Technology, Fifth Edition" and clinical editor of DIRECTIONS magazine. Additionally, she serves as the continuing education curriculum coordinator for NRRTS. Lange is on the teaching faculty of RESNA and a member of the Clinician Task Force. Lange is a certified ATP, certified SMS as well as a senior disability analyst through the American Board of Disability Analysts. SEE PAGE 24

DALLAS AND DYLAN MOORE



The Moore family lives in Alabama. NRRTS refers to them as our "Alabama Cuties." SEE PAGE 10

PENNY J. POWERS, MS, PT, ATP



Powers is a Level IV Physical Therapist at Pi Beta Rehabilitation Institute at Vanderbilt University Medical Center. Powers is the lead physical therapist for the Adult Seating and Mobility Clinic. Her practices involve specialty seating for a diverse adult population. She has had presentations accepted at national conferences including RESNA and APTA Combined Sections meetings as well as the university's International Seating Symposium. She serves as an adjunct faculty member at Belmont University's Doctor of Physical Therapy program. She currently serves on the Executive Board of the Clinician Task Force. SEE PAGE 20

ELAINE STEWART, ATP, CRTS®



Stewart is president of NRRTS. Stewart works for National Seating & Mobility in Fort Wayne, Indiana. SEE PAGE 8

WEESIE WALKER, ATP/SMS



Walker is executive director of NRRTS. She has more than 25 years of experience as a rehab technology supplier. She has served on the NRRTS Board of Directors, Georgia Medical Equipment Suppliers Board and the RESNA Professional Standards Board. She has been very involved in advocacy at the state and federal level. SEE PAGE 44

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FROM THE NRRTS OFFICE

WRITTEN BY: ELAINE STEWART, ATP, CRTS®

Looking over the past 25 years, NRRTS has developed into a place our Registrants can go as a resource to obtain continuing education and to be an advocate. Our offerings are open to our clinicians, physicians, referral sources and consumers. In our infancy, NRRTS strove to establish professional recognition of the RTS/ATP and to be considered part of the medical model when providing Complex Rehab Technology (CRT). Although we are part of the medical model in Centers for Medicare and Medicaid Services (CMS) policy, we still struggle to make enough noise to affect policy.

With the assistance of occupational and physical therapists, NRRTS has also developed the educational offerings to enable many to keep current in this industry. Without their support and contribution, we would not be where we are today. (Thank you for all your efforts!) In addition to live webinars, on-demand continuing education and CEU article reviews are a component that truly benefit anyone in our industry. Costs are minimal for these offerings and available at no charge for NRRTS Registrants.

I believe for us to make a change, we need to have more of our own professionals taking an active role and to be the voice for our consumers. That way, we can continue to provide needed medical equipment that makes their lives functional. Unfortunately, many of our consumers are not advocating for themselves. They are just trying to get through their daily routine, and it is mind-blowing at best. Therefore, we, the ATP/RTS®/CRTS®, should be involved. We have often allowed our heart strings to be pulled when we provide components without thought to reimbursement because it is “the right thing to do.” But by doing this, the powers that make policy see no reason for change. We need to get our consumers revved up to be a voice for change. Earlier this year, NRRTS participated on the “Roll on Capitol Hill” with many consumers speaking with our lawmakers, giving our actions notice.

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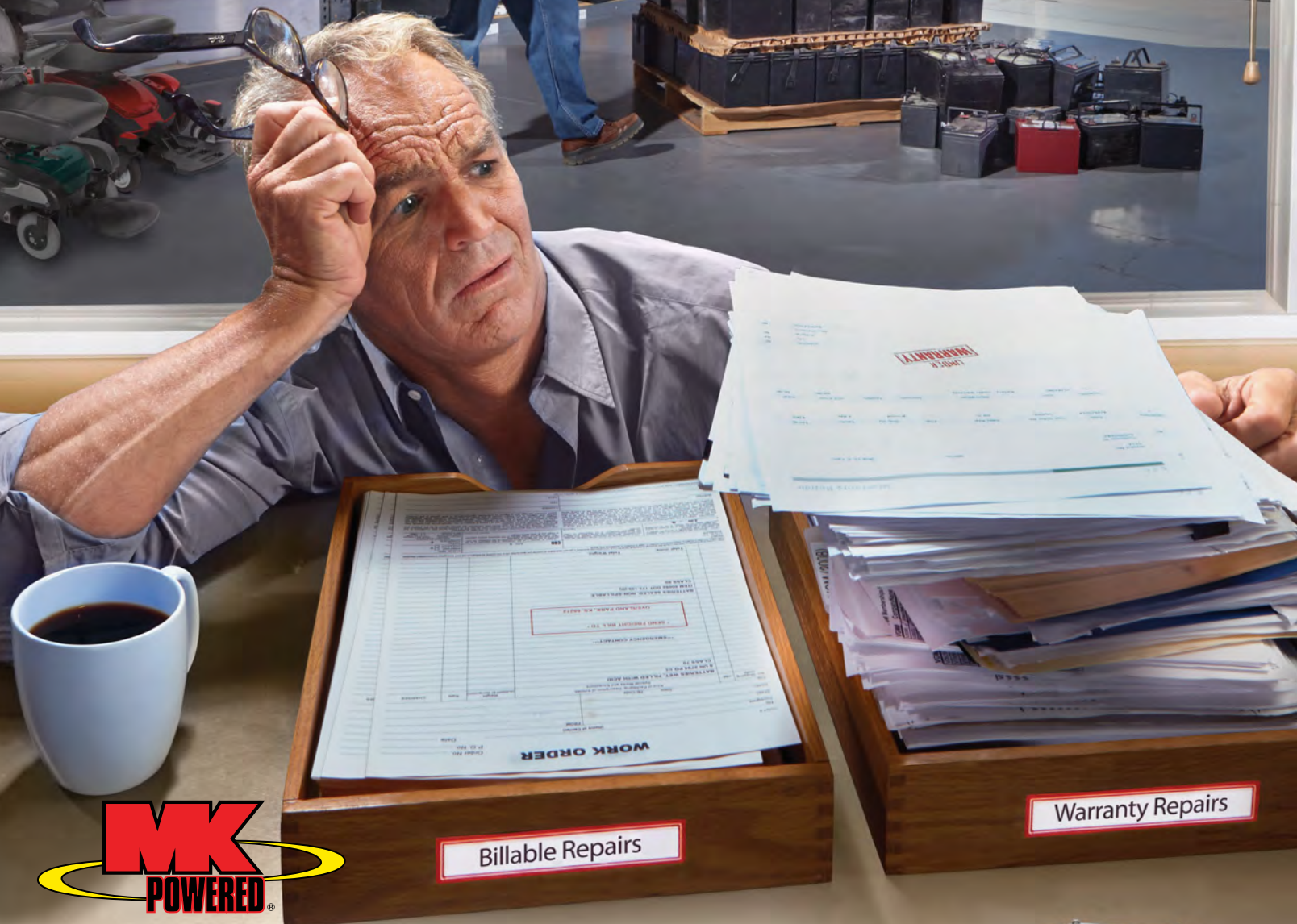
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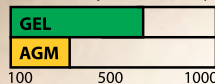
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SMA DOES NOT DEFINE OUR BOYS



Fraternal twins Dallas and Dylan Moore were born Nov. 29, 2011, to Dwight and Tiffany Moore. Dallas is the oldest by six minutes and during the first few months the boys developed at what would be considered a normal rate. At 6 months, Dallas and Dylan were able to sit unassisted and had good head control.

At 10 months Dallas began to “army crawl,” one of the first methods of moving around for most babies and could pull up on his knees into a crawling position. Dylan crawled at 6 months and was pulling up to stand at 8 months.

At this point, things began to change for the boys and their family. With twins, it is essentially impossible for parents not to compare each child to the other. “For a while we thought that Dallas was just an easy-going baby compared to Dylan who was very outgoing and active,” Tiffany said. “But when Dylan began to crawl, pull up and cruise around furniture, I began to be very concerned because Dallas couldn’t do these same things.”

The twins’ mother was particularly qualified to take note of potential developmental problems in her young boys. Her younger sister Nicole, who was also a twin, had died at age 10 from spinal muscular atrophy (SMA) Type 1. SMA is considered by many as one of the most prevalent genetic disorders and is the most common genetic cause of infant death.

Spinal muscular atrophy Type 1 onset usually occurs between birth and 6 months. SMA Type 2 is an intermediate form that affects children who are never able to stand and walk but who are able to maintain a sitting position at least some time in their life. The onset of weakness for Type 2 is usually between 6 and 18 months; however, experience with the disorder varies greatly. Some individuals gradually grow weaker over time while others, through careful maintenance, avoid any progression. Body muscles are weakened, and the respiratory system is a major concern. Life expectancy is somewhat reduced but many with SMA Type 2 live well into adulthood. Late onset SMA, also known as SMA 3 and 4, results in variable levels of weakness in older individuals.

“It was obvious to us that Dallas’ muscle tone was very weak and his hands often trembled,” Tiffany said. “However, when I shared my concerns with our

pediatrician I was told that I was only comparing Dallas to Dylan and that he would be fine. I knew deep down that something wasn’t right and changed to a different pediatrician.”

During this time Tiffany began to learn more about the symptoms of SMA and from her findings determined that Dallas’ symptoms were very similar to those identified with SMA Type 2. In a few months this baby who earlier could roll over and army crawl was losing strength in his muscles. In February 2013, a neurologist formally diagnosed Dallas with SMA Type 2.

The twins’ parents became somewhat concerned about Dylan when at 14 months old he was not walking unassisted; however, otherwise he was very mobile and was not exhibiting the symptoms identified with SMA as Dallas had. “Through early intervention services Dylan had been receiving physical therapy for about six months, and I asked



Dave Nix, with National Seating & Mobility, with Dylan, left, Tiffany and Dallas



Dallas (left) and Dylan Moore

his doctor if he would order more,” Tiffany said. “After asking some routine questions and learning about Dallas’ SMA diagnosis, the physical therapist suggested that Dylan see a neurologist to rule out other factors. Further examination and genetic testing confirmed in December 2013 that Dylan also had spinal muscular atrophy Type 2.

The boys’ father is a high school math teacher, and their mother teaches special education at the high school level as well. “As educators, and especially with my experience in special education, we have been diligent to seek help for the boys wherever possible,” Tiffany said. “We have been with Alabama’s early intervention services since right after the twins’ first birthday. I recommend that parents of children with disabilities reach out for help in your area as soon as you think there might be a problem.”

Tiffany pointed out that often a family member or friend will notice symptoms before a parent. “The earlier you begin to get help, the better. You need to learn what your child needs and how to get it.”

Without a doubt, Tiffany and Dwight understand how difficult it is to meet the challenges of having children with disabilities. “It is very difficult to accept having a child with disabilities and then make that ‘times two’ with us. As parents we all have in our minds how things will be. It is very difficult when what you envision for your child doesn’t come to fruition, and you realize something is wrong,” Tiffany said. “It is important not to be afraid and not to blame yourself. Mothers often worry that they did something wrong during the pregnancy. Even when I doubt myself I know this situation is what God has for me. I believe my experience with my sister and her disabilities was, in a way, God telling me, ‘This is for you to learn because I’m going to give you two children with SMA.’”

And now Dallas and Dylan have started kindergarten. “Actually, the boys are kind of pros at school now. They began with early intervention services at the age of 3 and at that time began riding

the bus to school,” Tiffany said. “Now they ride the bus to kindergarten. We don’t have an accessible van so we have no way of transporting two power chairs.” Dallas has had a power chair since he was 3 years old. Until recently Dylan used a manual chair, but he now has a power chair as well.

The Moore family has determined not to let SMA define their twins. “We want them to have the fullest life possible regardless of their limitations,” Tiffany said. As with any 5-year-olds, the twins are developing individual personalities. “Dylan is all boy and crazy about super heroes,” Tiffany said. “He has a big personality, can be stubborn at times and is very particular about his school work. When Dylan will say something new and I ask him how he knows it, he’ll answer, ‘I’m a genius!’ He can be a daredevil in his chair, and we have to keep a close watch on him. The boys recently got bunk beds, and we caught Dylan about to jump from the top bunk.”

Dallas’ mother describes him as an observer. “While Dylan doesn’t meet a stranger, Dallas will check out every detail before he warms up to someone,” Tiffany said. “But once he’s comfortable, he’s a little chatter box. Dallas pays close attention to what’s going on and then gives you a run down from beginning to end. He also gives lots of hugs!”

Both boys love to choose their clothes. Dallas prefers bow ties; Dylan is partial to anything red. “At one time you could pick out Dylan because of his red shoes, but he’s grown a little faster than Dallas so now his brother is the one wearing ‘hand-me-down’ red shoes,” Tiffany said.

“We are trying to do a better job of not being over protective of the boys. We can’t always shield them, and they have to learn to live in the world,” Tiffany said. “One night Dylan made a comment about not being able to walk, and I went into his room to talk to him. That boy was looking at me like ‘What is she doing in my room?’ I asked if he wanted me to leave so he could go to sleep and he said, ‘Yes ma’am!’ Here I am worrying and crying and Dylan is over it!”

However, Tiffany grew solemn as she admitted that she often thinks about the challenges her sons will face as they grow older. “We think about that a lot. The older they get, the more the boys realize they are different. They will say things such as they wish they could stand. Dylan asked me if he would be able to walk when he got in kindergarten. There are many difficult times ahead, and it is heartbreaking. I don’t lie to them. I tell them they are different, and they may not can walk, but they can do other things. Dallas and Dylan are very bright boys! Our goal is for them to continue to be happy and for us to live in the moment. I see and read about many older kids

(CONTINUED ON PAGE 12)



Dallas (left) and Dylan on Easter Sunday 2016.



Dylan (front) and Dallas at school.



The Moore Family at Disney's Hollywood Studios (back row, from left) Tiffany, older brother, Brenden, and Dwight; (front, from left) Dallas and Dylan. Dallas was given this trip by the Make-A-Wish Foundation

SMA DOES NOT DEFINE OUR BOYS (CONTINUED FROM PAGE 11)

and young adults living with SMA. That gives me a glimmer of hope."

There is also hope because of the recent availability of a treatment approved in 2016 by the Food and Drug Administration. "The boys received their first spinraza treatment this past summer and will receive a maintenance dose in December of this year," Tiffany said. "We've seen some progress already. Dylan could initially stand and crawl up stairs, but he lost that ability. After this treatment, he can crawl up and down stairs again. Dallas has gotten much stronger. He can now roll from side to side and pick up his cup from the cup holder in the car. Even Dallas' handwriting has improved. I was concerned about that. It wasn't that he couldn't write, he just wasn't strong enough to produce it. Now you can see the improvement. This is very encouraging to us!"

For this family's journey thus far and all that lies ahead, they are especially thankful for the care and encouragement they receive from others. "I want to emphasize that we could not cope with all that is before us if it weren't for the support of our family and friends," Tiffany said. "My mother and sister live near and take the boys every other weekend so Dwight and I can have some time to rest and focus on other areas of our lives. This gives us an opportunity on a regular basis to recharge physically, mentally and emotionally. My husband's mother doesn't live near, but helps us financially even though she doesn't have to. We also have a strong faith in God and believe that He blessed us with Dallas and Dylan for a reason. He chose us for them and them for us. We can't imagine our life without them!"

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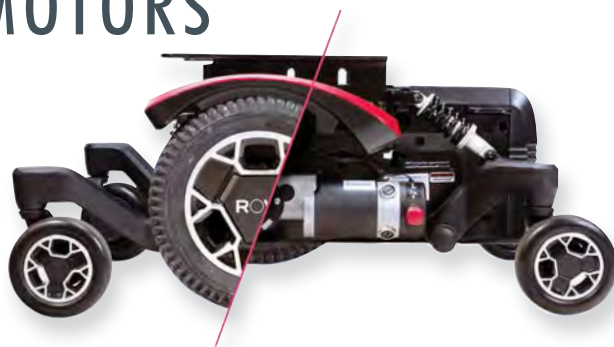
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ALWAYS ASK 'WHY NOT?'

Originally from Northern Ireland, occupational therapist Jackie Casey moved to Louisiana almost four years ago. "My husband, Ben (Casey), and I were married in 2005 and have known each other for a quarter of a century," Casey said. For many years the couple maintained a long-distance relationship traveling between the two countries, but Casey admits the six hour time difference was difficult. "I wanted to remain in Ireland until my son was grown and on his own. He's 28 years old now, but he's still my 'wee' son," she said, using a common Irish adjective to describe her only child who stills lives in Northern Ireland. "I have my 'new' baby with me," Casey said. "He is a Tibetan Terrier named Max. He's 6 years old and has his own passport!"

"The lifestyle here [in Louisiana] is amazing," Casey declared with an Irish lilt. "We live in a modest home just outside of New Orleans on what is called the North Shore that is 10 to 12 feet above sea level. We spend a lot of time on the river, on Lake Pontchartrain and in the swamp channels. I've had a bit of an adjustment with the climate, way of life and the people. The mosquitos love me, and I am completely paranoid of snakes especially after heavy rains. But the food here is wonderful, and the people are very friendly and welcoming." The couple chose to live in southern Louisiana, so they could be close to Ben's 14-year-old daughter who lives 40 minutes away.

NOW THAT WE KNOW WHAT BROUGHT YOU TO THE UNITED STATES, TELL US WHAT STARTED YOU ON THE PATH OF A CAREER IN OCCUPATIONAL THERAPY?

When I was younger, I was always involved in team sports, team challenges and various clubs. I was never good at sitting still and usually ended up being the club chairman or leader of the team. It seems I was more into helping others and naturally interjected a teaching component. My parents were in the nursing profession, and my dad was also a teacher in nursing. It was my mother's suggestion that I become an occupational therapist.

I studied at the University of Ulster in Northern Ireland and graduated with a bachelors degree in 1994. Then I moved into geriatric rehab and stroke rehab. Eventually I left the hospital environment and moved into the children's community where I worked with children of all ages with a wide range of disabilities. During this time I ended up working more with positioning and seating. A part of me was interested in engineering as well so working with assistive technology, seating and positioning sort of checked that box too.

WHAT WERE SOME OF YOUR EXPERIENCES AS AN OT DURING THE MID-TO-LATE 1990s?

During this time, I carried blocks of foam and a carving knife in the car, cordless screwdriver and all that stuff! I always hoped I didn't get stopped by

the police and have them ask, 'And what's going on here?'

Ultimately, I took a position of lecturer/practitioner at a university that was part-time teaching and part-time clinical and also earned a master's degree. This gave me the opportunity to teach occupational therapy students and work with physical therapy students as well. I also worked in the industry during this time consulting on product design and evaluation of products. There were also opportunities for clinical research on my own that was usually on the qualitative side looking at the families and their situations as well as the characteristics of having children who would use a wheelchair.

While at Ulster, I also became a program director facilitating the development of practical skills of occupational therapy and, with a colleague, developed some post-graduate modules relating to pressure ulcer prevention and management. These experiences and participating in seating symposiums allowed me to 'dip in lots of pots,' but mostly related to seating and positioning.

WHAT ARE SOME IMPORTANT LESSONS YOU LEARNED DURING THIS TIME IN YOUR CAREER?

Fairly early in my career, I realized a child with a disability is really a family situation. Parents know their children well and usually know what is best. It is important to listen to them to come up with solutions to meet their needs. Realizing this pushed me to consider resolutions outside of the norm.

Another important lesson I learned early on was not to underestimate the abilities of those with disabilities. A couple of years after graduating from university, I helped assess young swimmers for possible participation in the Paralympic Games. These swimmers would potentially represent the Island of Ireland! I realized with one particular swimmer that I had completely underestimated his ability. With that experience I realized just because someone is in a wheelchair or attending a particular school, I still needed to assess him as an individual and push as high as I could. At first look I would not have realized that young man could compete at the level he was capable of.

After many years, I still remember this lesson. I need to push these kids to reach for the stars and help the parents mentally, so they can also do that.

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I am now a clinical educator for the Human Mobility Business Unit of Ottobock. Within that I get the pleasure of traveling all over North America. I support the sales team to help develop their competency skills and knowledge on the use of assistive technology devices for our patients. This includes our 24-hour portfolio that is a good fit with my background in 24-hour postural management. Whatever we do in seating, we have to look at the whole picture for that client because when they aren't in their chair, where else are they?

(CONTINUED ON PAGE 16)



Jackie and Ben on Thanksgiving vacation in New Zealand at the edge of the Shotover River.



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ALWAYS ASK 'WHY NOT?'
(CONTINUED FROM PAGE 15)

What sort of assistance will they need? I am also involved with clinical courses offering CEUs, clinical assessment as a consultant in clinics, and I also have the opportunity at times to work directly with clinicians. This has allowed me to observe some really, really nice pockets of brilliant practice.

We are also just beginning to develop vendor training that gives me the opportunity to attend sessions at mini-conferences. This allows me to learn from others as well. Learning colloquialisms has been fun! For example, in Louisiana a buggy is what the rest of us would call a shopping cart. A buggy in the U.K. and Northern U.S. is a stroller. And that's just one example!

The travel with this job is lovely! I get to see the whole country. I'm ticking off the states one at a time and am becoming really professional at packing hand luggage.

LEARNING THE HEALTH SYSTEM AND HOW INSURANCE AND FUNDING VARIES IN EACH STATE IS DIFFICULT FOR LOCAL RESIDENTS, BUT IS EVEN HARDER FOR A FOREIGNER LIKE ME! HOWEVER, REGARDLESS OF WHERE YOU ARE WORKING WHEN YOU WRITE YOUR LETTER OF MEDICAL NECESSITY IT SHOULD ALWAYS BE BASED ON A GOOD ROBUST, DETAILED CLINICAL ASSESSMENT. THAT IS THE SAME THE WORLD OVER!

In addition to my responsibilities with Ottobock, I am working to complete my Ph.D. I'm doing this by publication, so I have a number of papers that go



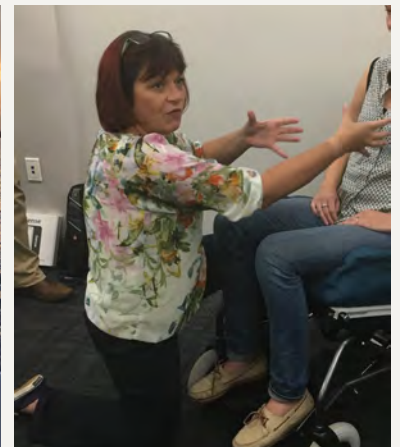
Jackie and husband, Ben Casey, at Solder Field, Chicago at the historic game when Ireland (Jackie's team) beat The All Blacks of New Zealand (Ben's team) for the first time in 111 years.



Jackie and Ben enjoying some of the food delights that New Orleans has to offer at Antoinette's.



Jackie and Max on the boat on Lake Pontchartrain.



Jackie teaching how to custom mold.

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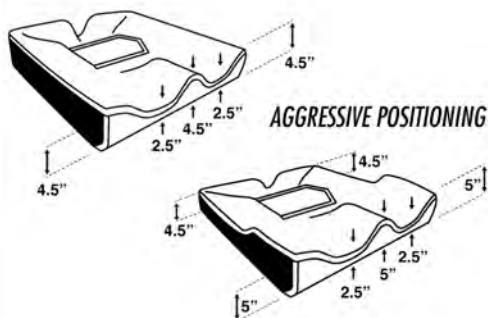
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back as far as 2007. Now I have to complete the degree requirements I have to put the commentary together.

WHAT ADVICE WOULD YOU SHARE WITH THOSE CONSIDERING A CAREER AS AN OCCUPATIONAL THERAPIST?

I think working as an occupational therapist is a fantastic job, because no two days are the same. You have the opportunity to work in many areas of practice, and this work is always about who your client is. We have guidelines to follow, but you can still make it personal to your patient.

Clinicians often ask me to give them the answer to a certain situation, and I usually tell them, 'Let's work through this. Let's think about it.' I try to remind them of who their patient is. For example, I may know generally what a stroke patient will need in their home environment. However, I'm not going to really help that patient unless I know who he is and what's important to him. I enjoy the challenge of fitting treatment to each individual. When you don't give robotic answers and make your work individual to each patient, that is the rewarding bit of our work.

Always remember that just because someone says you can't do something doesn't mean you can't. I like to ask 'why not?' and try to push boundaries when possible.

Learning the health system and how insurance and funding varies in each state is difficult for local residents, but is even harder for a foreigner like me! However, regardless of where you are working when you write your letter of medical necessity it should always be based on a good robust, detailed clinical assessment. That is the same the world over!

CONTACT

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YEAR-END PUSH FOR CRT MANUAL WHEELCHAIR LEGISLATION

WRITTEN BY: DON CLAYBACK

This year is quickly ending, and Congress is busier than ever. With that in mind, we need thousands of Complex Rehab Technology (CRT) stakeholders to write and call their representatives asking them to cosponsor and pass HR 3730 to stop Centers for Medicare and Medicaid Services from inappropriately using Competitive Bid pricing to cut Medicare payments for accessories used with CRT manual wheelchairs.

Current Medicare payment policy creates a disparity in that people with disabilities who use CRT manual wheelchairs have less access (less funding) for needed accessories than those people using the same accessories on CRT power wheelchairs. There should be equal access, and this inequity must be resolved. Thankfully a resolution lies in the passage of HR 3730, being led by Reps. Lee Zeldin, R-NY, and John Larson, D-CT.

Taking the first step in contacting your representative will take less than five minutes! Visit www.protectmymobility.org and use the HR 3730 email and call links to get to your representative's office. At the site you can also view and download the position paper and list of current cosponsors.

Remember when you speak with congressional members and staff, it's important to let them know the label "accessories" is a Medicare policy term that does not properly convey CRT wheelchair accessories are "critical components" such as seat/back pressure relieving cushions and positioning devices. These critical components are what allows the CRT manual wheelchair to be individually configured to meet the unique medical and functional needs of the person with a disability.

In seeking cosponsors, polite persistence is key to a successful outcome. Don't accept a generic response to your request that your representative will "keep your thoughts in mind if the bill comes up for a vote." You need them to formally sign on as a cosponsor now, not when it comes up for a vote.

Passage of HR 3730 will stop Medicare's inappropriate cuts to CRT manual wheelchair accessories and protect access for people with disabilities who rely on CRT manual wheelchairs. Thanks for getting your representative signed on as a cosponsor and for spreading the word asking others to do the same.

CURES ACT MEDICAID IMPLICATIONS

The 21st Century Cures Act (passed in 2016) included a provision that limits the Federal "Medicaid reimbursement" to state Medicaid programs for durable medical equipment to "Medicare payment rates" starting in 2018. While this does not require states to change their Medicaid payment rates, the risk is that states paying more than the 2017 Medicare rate may reduce their 2018 Medicaid fee schedule in response to a potential decrease in federal reimbursement.

An industry work group, including state associations, has been working on analyzing

the implications of this issue and developing related materials. As of this writing, state Medicaid directors are awaiting instructions from CMS on the details of this new policy. Once these instructions are released, we will be able to better identify the states at risk, analyze the potential impact and develop strategies and action plans. As additional information becomes available, we will be issuing updates.

NATIONAL CRT PROVIDER FINANCIAL SURVEY

As NCART continues to work to protect access to CRT, we need updated industry financial and operational information for our advocacy activities. The last time a full national CRT Provider Survey was conducted was in 2008. While this information has been very helpful over the years in discussions with legislators and policymakers, more current data is needed.

To that end we have commissioned the Saunders College of Business at the Rochester Institute of Technology (R.I.T.) in Rochester, New York (www.saunders.rit.edu) to conduct a CONFIDENTIAL National CRT Provider Financial Survey. The study will be supervised by Raj S. Murthy Ph.D., an associate professor of marketing at the college.

The Saunders College survey seeks limited financial and operational data from CRT providers for calendar/fiscal year 2016. All information will be submitted directly to the college and held in strict confidence. The survey



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report will only disclose group data, so no individual company information will become public.

This survey is open to all CRT providers. Participating companies will receive a free copy of the final report. This is a \$495 value and will provide financial and operating information that will help companies better manage their CRT business in these challenging times.

The first step in the survey process is for CRT providers to register their company with the Saunders College indicating a willingness to participate. If interested, go to <https://goo.gl/jY2m5R> to view a two-minute video invitation, get additional details, and follow the instructions to sign up.

WASHINGTON, D.C., CRT FLY-IN

Plans are being finalized for next spring's National CRT Leadership and Advocacy Conference. NCART and NRRTS will again be bringing CRT providers, manufacturers, clinicians, consumers and other stakeholders together to take the CRT message to Congress.

As in past years, we will be holding the conference at the Hyatt Regency Crystal City in Arlington, Virginia. Attendees not only get the benefit of meeting with Congress, but they will hear from experts speaking on national health care policy trends and industry regulatory/legislative topics.

This annual event has been a critical factor in securing congressional support for CRT. We have seen the significant benefit that comes from stakeholders taking the time to come to Washington to personally meet with their members and staff.

We will be sending out a "Save The Date" announcement and posting registration details on the NCART and NRRTS websites shortly. Stay tuned.

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CLINICIAN TASK FORCE

ON KNOWLEDGE, TRUST AND ACTION

“Expert practice is defined as being able to do the right thing at the right time”
-Ruth Purtillo, PhD, PT, FAPT

This is the time of year to reflect on our goals and accomplishments, feel gratitude for our progress, plan and build momentum for the upcoming year. On a recent Clinician Task Force (CTF) conference call, we were discussing notable accomplishments, gratitude for progress, and work to be done. CTF members work to build capacity for skilled knowledgeable Complex Rehab Technology (CRT) stakeholders (patients, referral sources, clinicians, suppliers and policymakers) and look for every opportunity to serve through skilled seating and wheeled mobility intervention, education, and collaboration with stakeholders.

One member recounted a story of a pivotal moment that recently occurred in her seating and wheeled mobility clinic. On this day, freshly minted, first-year resident was scheduled to observe. As with many busy clinics, the pace was quick, and the CRT team moved quickly from one patient to the next. This clinic visit was not the first one for this patient. She was well-known to the therapist over 10 years. The therapist recounted the patient's life story to the observing resident before she even wheeled through the door. The evaluation flowed to include patient goals, challenges in MRADLs and IADLs as well as review of medical history and problems. The patient presented with a 4 cm x 2.5 cm deep Grade IV pressure injury on her right ischial tuberosity. She reported that it has been present for 10 months but she has not discussed it with her nurse practitioner because she “wanted first to talk with the PT – because you would know what to do.” This patient specifically waited to tell any other professional about her pressure injury until she could discuss it with someone she trusted—her seating clinic physical therapist.

The observing resident's teachable moment came from the realization that she knew trust must be earned. It occurred to the resident that it is not part of her typical routine to ask questions about skin integrity or wounds and disturbed her to know that she likely would have missed this finding if she had seen this patient alone.

“This encounter emphasized the importance of developing a relationship with the patient, asking the right questions including: who they are, what they like to do, what their dog's name is, etc. This encounter underscored the significance of the health care team. Patients develop strong relationships throughout the health care system and it is vital to the health of the patient that discussion is fluid among providers and that trust is garnered wherever possible.” Catherine

Ellis Mannon, M.D., first-year internal medicine resident at Vanderbilt University Medical Center

This was an opportunity for the resident to see the CRT team collaborate and move into action. The therapist moved into a managing role educating the patient about the significance of the wound, coordinating referrals and medical follow up, and exploring immediate needs. The supplier worked with the therapist to examine the current wheelchair and seating system, make immediate adjustments/repairs and since no replacement cushion was available on site, explore options for temporary loaner equipment and timely follow-up.

What most impressed the observing resident was the way the team performed. The tone was mutual respect and collaboration engaging the patient in responsibility and decisions. They recognized the acuity and urgency of the patient's situation and while some might consider it beyond their direct ‘job’ responsibility the team expedited the process to ensure the patient received a timely response and follow up intervention.

On any given day we never know what patient situation will roll through our door. We need to pause and recognize that every day CRT teams are working hard to serve individuals with complex mobility impairments.



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We regularly rise to the occasion, attempt to do the right thing at the right time to help the people we serve.

We have an opportunity to influence and play an important collaborative care role in the health care system. Clinicians must sincerely convey to patients that it's safe to communicate their concerns and priorities, ask questions, and contribute knowledge about themselves to help make the best possible clinical decisions about their care. Then actively facilitate shared decision making by earning patient's trust. This is the essence of collaborative care advocated for by members of the CTF.

Knowledge is power. When you know better you do better. Pivotal 'light bulb' moments stay with us. On this day it was a sobering reality to learn that patients do not automatically reveal serious issues until trust is established. Skill is necessary to ask the 'right' questions. Opportunities exist every day for us to serve as a teacher; educate from the heart of a teacher. It is not always the facts that need to be taught. Oftentimes it is behavior, professionalism, advocacy and action that needs to be modeled.

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THE YEAR OF 2017

As another year is coming to a close, let's take stock of where we are. I would say 2017 has been just like any other year working on Complex Rehab Technology (CRT) issues, but that would be a lie. Starting with the election victory of the Trump administration November 2016 through to today, we have had to remain doubly focused on an issue that to many outside this sector may appear small, but in reality, has a huge impact on the daily lives of people living with disabilities; that is, the access to individually configured complex power and manual wheelchairs and related essential components.

At the end of 2016, we were able to obtain a six-month extension to the exemption of power CRT from Medicare's competitive bidding program after a second short-term delay of one year the year before. However, with the second shorter extension, it was critical that stakeholders continue to clarify to Members of Congress and to the Centers for Medicare and Medicaid Services (CMS) the importance of both manual and power CRT chairs and what that means to wheelchair users.

And as of June 23, 2017, we, as a community, had good news to report when the CMS announced a policy clarification stating it would not use competitive bid pricing for accessories used with Group 3 CRT power wheelchairs. We of course have thanked CMS and Congress for that action. As we know, unfortunately, the clarification did not extend to accessories used with CRT manual wheelchairs, which is why additional legislation had to follow. And so stakeholders were able to work with Reps. Lee Zeldin, R-NY and John Larson, D-CT to introduce legislation in September to stop CMS' application of Medicare competitive bid pricing to accessories used with CRT manual wheelchairs. This replaces their previously introduced broader

bill, HR 1361, which prohibited CMS from using competitive bid pricing for accessories used with either CRT power or CRT manual wheelchairs. With some great team work, all stakeholders were able to add 42 original cosponsors on the new bill, known as HR 3730, with a total of 47 on the new bill as of Nov. 6, 2017.

As I have said before, there is still a critical need for equal access to CRT manual wheelchair users. Just because the policy for CRT power now happens to be more amenable to some

wheelchair users, the CMS policy, as is, discriminates against people living with different disabilities. It may also lead to a great disparity in health outcomes simply due to the inability of individuals with disabilities being unable to access medically necessary manual CRT wheelchairs and components. United Spinal continues to advocate on behalf of our members and the broader disability community and to look for ways to move HR 3730 forward as well as advocating on similar activity in the Senate.

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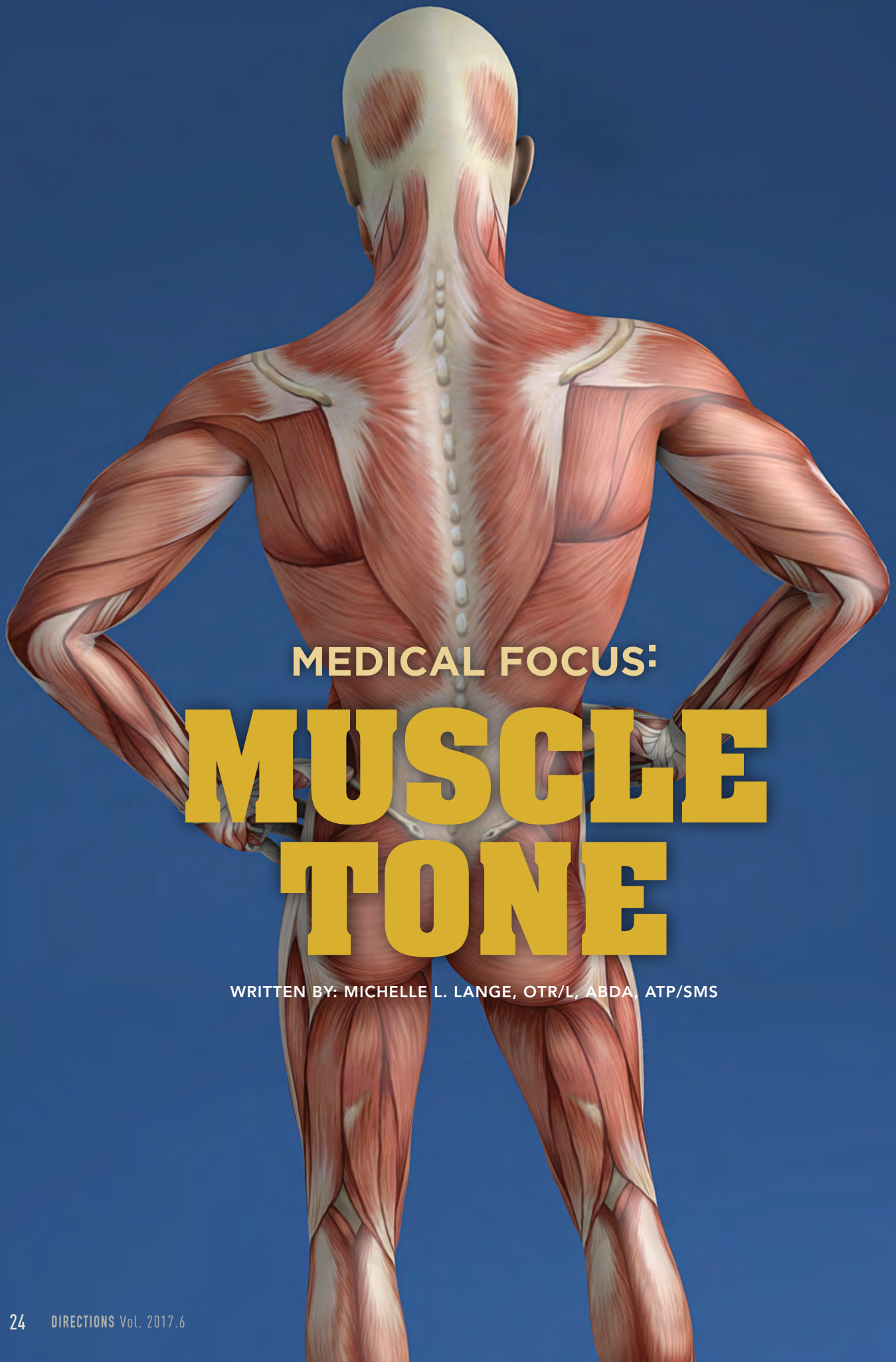
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NEED FOR EQUAL
ACCESS TO CRT MANUAL
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MEDICAL FOCUS:

MUSCLE TONE

WRITTEN BY: MICHELLE L. LANGE, OTR/L, ABDA, ATP/SMS

What is muscle tone? According to the Dictionary of Sport and Exercise Science and Medicine, muscle tone “in skeletal muscle, (is) a state of tension that is maintained continuously—minimally even when relaxed—and which increases in resistance to passive stretch.” Human resting muscle tone (HRMT) is tonus or tension that derives from intrinsic molecular viscoelastic properties. It is low-level, passive tension and resistance to stretch and is important in maintaining postural stability. This tone allows us to maintain a relaxed standing body posture for prolonged durations without fatigue. HRMT functions inseparably from fascial tissues and ligamentous structures (Masi & Hannon, 2008). When we actively contract opposing muscle groups (co-contraction), this increases muscle tone for increased stabilization.

Decreased muscle tone, sometimes referred to as hypotonia, can be seen as a separate condition (benign congenital hypotonia) or may be a symptom of another condition (i.e. muscular dystrophy or cerebral palsy). A person with hypotonia may appear “floppy” and be difficult to hold. Maintaining positions against gravity is often difficult. Joint dislocations are more likely. Feeding, speech and breathing may be impacted as well.

If muscles do not receive adequate signals from the motor nerves at the level of the brain and spinal cord, then central hypotonia occurs. This is seen in conditions such as cerebral palsy, brain injuries and spinal cord injuries. If there is nerve damage between the spinal cord and the muscle, peripheral hypotonia occurs. This is seen in conditions such as muscular dystrophy and spinal muscular atrophy. Certain non-neurological conditions can also result in hypotonia, including Down syndrome.

Increased muscle tone, sometimes referred to as hypertonia, results in muscles that are stiff and difficult to move. As opposed to hypotonia, the muscles receive too many signals from the motor nerves as a result of damage to areas of the brain or spinal cord.

reflex responses. This type of increased muscle tone is common in conditions such as cerebral palsy. Rigidity is characterized by increased muscle tone that is not dependent on the direction or speed of movement. This type of increased muscle tone is common in conditions such as brain injuries and Parkinson's disease.

Some clients present with “mixed tone” or a combination of high and low tone. In these scenarios, low tone is frequently seen proximally and high tone is seen in the extremities.

For more information on hypotonia and wheelchair seating and mobility, please read the Clinical Perspective and Rehab Case Study articles in this volume of DIRECTIONS.

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CLIENTS WITH LOW MUSCLE

Etiology, Issues and Wheelchair Seating Challenges

INTRODUCTION

Low muscle tone—most of us recognize it when we see or feel it, but where is it coming from and what is really going on? Physicians and therapists agree on the difficulty of assessing low tone. It can be difficult to diagnose and determine the source of the problem, especially in young children. A deeper understanding of low tone symptoms, causes, possible complications and postural tendencies will advance our ability to provide optimal seating for clients who present with this issue.

DEFINITION

Hypotonia is the medical term that describes low or decreased muscle tone. Low tone is a symptom of an underlying condition, not a diagnosis by itself. People with hypotonia have a central nervous system injury or condition, a genetic or chromosome disorder, or a problem in the muscles themselves. These conditions can be divided into four broad categories—central nervous system, peripheral nerve, neuromuscular junction and muscle disorders.

Hypotonia is usually diagnosed in children but also develops in adults usually after an illness, injury or as part of a disease process. When no clear etiology is determined in children it is called idiopathic or benign congenital hypotonia. But the term “benign” is controversial in some circles because what appears nonthreatening at an early age may later develop into a serious condition. Understanding the cause of low tone, with the prognosis for progression or improvement, has a large impact on management of the condition, including seating and wheeled mobility decisions.

Muscle tone is defined as the natural tension in a resting muscle—its ability to contract in response to external stretch. Skeletal muscle tone is not muscle strength. Muscle strength is the force generated by a muscle group in a single contraction against resistance, often measured with manual muscle testing or devices like dynamometers. Weaker muscle groups generate reduced force when they contract. Muscular endurance must also be considered and is different than pure strength. Endurance is the ability of a muscle group to exert less than maximal force for extended periods of time—to keep doing something over and over. A good example of this in a functional context is manual wheelchair propulsion. A person with sufficient motor control and strength to push for a short distance needs adequate muscular endurance to carry on for the long haul and functionally propel a

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TONE

WRITTEN BY: TAMARA KITTELSON-ALDRED, MS, OTR/L, ATP/SMS

manual wheelchair. A person with high or low tone can have varying degrees of weakness and muscular endurance. Depending on the condition, developing increased strength and endurance, regardless of tone, is a possibility.

A healthy muscle is never fully relaxed but always retains some tension or mild contraction even when not being used in a specific activity. For instance, normal tone in our trunk and neck muscles stabilizes our upright sitting posture. Without it we would collapse, as evidenced by what happens when one falls asleep sitting up. Muscle tone relaxes as a normal part of sleep, so if we fall asleep while sitting up we will often wake with our head flopped forward or to the side—and likely a stiff neck!

The term “low tone” is frequently used interchangeably with muscle

Muscular endurance must also be considered and is different than pure strength. Endurance is the ability of a muscle group to exert less than maximal force for extended periods of time – to keep doing something over and over.



PICTURE 1

Picture 1: An extreme example of sliding out with associated posture problems when the pelvis is not stable.

Picture 2: Excessive flexibility allows this kind of sleeping position.



PICTURE 2

weakness, but it is important to differentiate between the two. While hypotonia is often associated with muscle weakness, they are not the same thing. A person with low resting tone may compensate and improve functionally over time by strengthening muscle groups. This concept is relevant when assessing clients with hypotonia for seating and wheeled mobility. Over time, an effective seating intervention may assist a person with low tone in strengthening and building endurance in particular muscle groups that will improve function—for instance head control. It does not change the underlying muscle tone, but it can decrease its functional impact.

Understanding the differences between normal, high and low tone is essential because a person in each category will respond differently to the same seating intervention. Normal tone allows a range of movement that supports stability and motor control while allowing both activity and rest. Muscles with normal tone feel firm but yielding. There is a range of strength amongst individuals, but we are talking about the resting tension of the muscle—its potential to contract.

(CONTINUED ON PAGE 28)

Hypertonia (high tone) describes excessive resistance to passive stretch. In a resting state, range is lessened, and the muscles feel tight or rigid, they have reduced capacity to stretch. High tone can occur with or without spasticity. Spasticity is velocity dependent resistance to passive movement—a quick stretch elicits increased resistance. The Ashworth Scale and deep tendon reflex testing are often used to assess spasticity.

Hypotonic muscles feel soft and sometimes even mushy. There is reduced or even no resistance to passive movement. The muscle contracts very slowly and may be unable to sustain contraction for long, therefore always remaining somewhat stretched out depending upon the severity of hypotonia. Lax ligaments are common with low tone and result in excessive joint flexibility or hypermobility. These people lack core stability and may feel like they will slip through your hands during manual transfers between support surfaces. In fact, the “shoulder slip through” test is one component

Hypotonia is sometimes a transient finding, as in babies who are born too early and have not developed normal tone in utero. Low tone can emerge as part of a specific disease process or injury. Some people have mixed tone: for instance, individuals with cerebral palsy may have high tone in some parts of their bodies with low underlying trunk tone. A person may have very low tone on one side and normal tone on the other after a cerebral vascular accident (CVA). In others, tone changes over time, becoming higher or lower as conditions evolve or resolve.

There is no universally accepted scale for measuring hypotonia. Much of the literature focuses on evaluation of hypotonia in young children, with exploration of non-invasive, clinical assessments. Hypotonia can be caused by more than 500 genetic disorders. Determining the cause is important for management of the condition and with respect to genetic testing for inherited syndromes. A combination of personal and family history, as well as developmental and clinical testing with recognition of characteristics, are typically used in assessing low tone. Procedures used by therapists and pediatricians include testing of suspended prone anti-gravity responses, the “shoulder slip through” test, and neurologic assessment of tone, reflexes and strength. By nature, these tend to be subjective, but Govender (2016) has proposed a prototype algorithm for clinical assessment of children with hypotonia to provide more objective decision-making.

CENTRAL VS. PERIPHERAL HYPOTONIA

To function normally, muscles depend on information from motor nerves. Motor commands to the muscles are generated in the motor region of the cerebral cortex or the brainstem in the central nervous system. The upper motor neurons do not leave the central nervous system (brain and spinal cord) but synapse with lower motor neurons that conduct messages to the muscles in the rest of the body. Origins of hypotonia are first differentiated as being central or peripheral.

Muscle tone relaxes as a normal part of sleep, so if we fall asleep while sitting up we will often wake with our head flopped forward or to the side - and likely a stiff neck!

of assessing young children with low tone, carried out by holding the trunk under the arms and suspending a child vertically. Interestingly, a person may have mixed presentation of hypotonia and spasticity. This can be seen in people born with low tone, for instance secondary to a chromosome disorder underlying another condition. This author has seen individuals with Down syndrome and traumatic brain injury, for instance, or cerebellar hypotonia and hemiparesis with some spasticity.

are then passed on to the muscles, resulting in decreased muscle tone. Typical causes are damage or developmental problems in the brain or spinal cord such as malformations, lack of oxygen or bleeding in the brain, serious infections like meningitis or encephalitis that cause brain damage, spinal cord injury, and genetic or metabolic disorders affecting the central nervous system (Bay & Johnston, 2016). Weakness is often, but not always, associated with central hypotonia—thus the possibility of strengthening to compensate for low tone sometimes exists. In central hypotonia, seizures, developmental delays, dysmorphic facial features, micro or macrocephaly, abnormal eye movements, and other signs of central nervous system dysfunction are often seen. Diagnoses manifesting central hypotonia include cerebral palsy (CP) (hypotonic CP being much less common than other forms), CVA, chromosome disorders (i.e. Prader-Willi, Down, Phelan-McDermid syndromes), metabolic diseases (i.e. disorders of glycosylation,

Central hypotonia is most common, accounting for about 66 to 88 percent of cases in children (Harris, 2008). Central hypotonia involves upper motor neurons, meaning that nerve signals are disrupted in the brain or spinal cord. The messages given to the lower motor neurons are atypical and those messages

Procedures used by therapists and pediatricians include testing of suspended prone anti-gravity responses, the “shoulder slip through” test, and neurologic assessment of tone, reflexes and strength.

AADC deficiency, or underdeveloped endocrine glands), spinal cord injuries and multiple sclerosis.

Peripheral hypotonia is less commonly seen in children but is a more common cause of later developing low tone in adults. It involves lower motor neurons, with interference occurring between the spinal cord and the muscles. The messages sent from the brain may be accurate and intact but cannot be transmitted properly to the muscles for some reason. Peripheral hypotonia is most often associated with significant muscle weakness. There are three issues typically related to this type of low muscle tone: (1) damage between the spinal cord and muscle, (2) poor communication between the end of the nerve and the muscle, and (3) problems in the muscle itself. Some examples are: (1) disorders in which the myelin coating of nerve fibers is damaged, interfering with transmission of information to the muscles (i.e. Charcot-Marie-Tooth disease), (2) disruption at the neuromuscular junction, where the nerve directly communicates with the muscle (i.e. myasthenia gravis), (3) muscle diseases that interfere with essential processes for forming and maintaining healthy muscles (i.e. muscular dystrophies), (4) motor neuron

diseases in which the nerves are progressively damaged, causing muscle wasting (i.e. spinal muscular atrophy), and (5) disorders of connective tissue that binds and supports other tissues (i.e. Ehlers-Danlos syndrome).

Some conditions exhibit combined central and peripheral hypotonia; examples are giant axonal neuropathy (GAN) and amyotrophic lateral sclerosis (Lou Gehrig’s disease).

Diagnostic tools for determining the origin of hypotonia include blood tests, EMGs, EEGs, spinal taps, CT scans, MRIs, and muscle biopsies. In young children, differences in head lag when pulled to sit, supine lying posture (hips widely abducted), deep tendon reflexes, prone anti-gravity responses, and cognition/affect are clinically valuable in determining the origin when other diagnostic tools are not available or inconclusive.

WHAT DOES HYPOTONIA LOOK LIKE?

People with hypotonia show certain typical characteristics, varying according to the underlying condition. Low tone can be mild or very severe. People with mild hypotonia can typically ambulate. They have developed coping mechanisms over time that help them function, but the quality of their movement and posture is atypical. They often sacral sit with rounded back, have overly flexible joints, and may have poor balance with tendency toward clumsiness and frequent falling. Compensatory strategies often help with difficulty getting up from sitting or lying, and may not be noticeable to an untrained eye. Thus, these individuals may go through life unaware they have low tone until it comes to the forefront. For instance, mothers with myotonic dystrophy can be functional and unaware of their condition until they give birth to a child who is much more seriously affected.

THOSE WHO REQUIRE SEATING AND WHEELED MOBILITY SERVICES WILL SHOW MANY OF THE FOLLOWING PHYSICAL CHARACTERISTICS IN VARYING COMBINATIONS AND DEGREES:

- Poor pelvic and trunk stability/control—this compromises the foundation of stable sitting posture. People with hypotonia often sit with a posterior pelvis, rounded back and trunk collapsed forward to gain stability. But without a secure pelvis, they will slide out of the chair (see Picture 1). If the pelvis but not the upper body is stabilized, the person will often fall forward with an anterior pelvic tilt, compensating with lumbar lordosis to remain upright and avoid collapsing. Another scenario is an oblique or rotated pelvis to gain stability, but this contributes to an unstable trunk and compensatory spinal curve leading to or worsening scoliosis. Eventually this can progress to rib cage/pelvis proximity with associated breathing and other health complications.
- Poor head control—compromised pelvic and trunk stability leads to excessive neck flexion or hyperextension; this compromises the visual field, swallowing, and breathing. In some cases, a lateral head posture becomes prominent. In all these examples, overstretching with shortening of soft tissues on the opposing side can eventually limit passive neck range and cause chronic pain.

(CONTINUED ON PAGE 30)

CLIENTS WITH LOW MUSCLE TONE (CONTINUED FROM PAGE 29)

- Poor weight bearing through legs and/or shoulders—weight bearing through the legs is difficult or impossible as is using the upper limbs to support trunk posture. It is crucial to support these body parts to prevent injuries like shoulder subluxation and foot drop secondary to habitually dependent positions.
- Diminished reach and grasp—reduced active movement and grip strength affects upper extremity use for activities including wheelchair mobility.
- Shallow breathing—respiration is often affected, especially in peripheral hypotonia, with up to 50 percent of people ages 3–55 requiring some form of breathing assistance at night and others requiring 24-hour assistance.
- Weak or quiet voice—related to limited breath support and muscle control.
- Flat affect with open mouth—when facial muscles are affected there may be drooling and lip closure problems, the person may appear “half asleep” with droopy eyelids, and expressiveness of the face overall is diminished.
- Eating/swallowing difficulties—breathing and oral motor tone/control problems include reduced tongue movement for moving food in the mouth, with chewing, lip closure and swallowing challenges. Sometimes eating orally just takes too much energy.
- Absent or slow postural reactions—maintaining stability when balance is challenged is a complex process, requiring an intact and mature nervous system.

Individuals with low muscle tone often have slow or absent reactions that will impact seating decisions.

- Joint hypermobility—lax ligaments associated with low muscle tone allow more range of movement than normal (see Picture 2). This can lead to joint instability with potential for subluxation or dislocation of joints if these are not supported in a functional, well-aligned position.

This picture of physical characteristics can be used to determine specific needs for postural support during mat evaluation and how to provide it.

GRAVITY, LOW TONE AND POSTURE

Human beings have three available postural orientations—lying, sitting, and standing. Our earliest postural experiences occur in lying, progressing as we gain control against gravity to sitting and standing. Developing motor skills with gravitational challenge is a big deal and even more so for a person with low tone. We can think of it as being a “human sandwich.” This describes the reality of our lives as human beings, functioning on a support surface and constantly influenced by gravity. The term was coined by Noreen Hare (<http://www.hafpa.info>) to describe our place in the sandwich—the filling. Whether we are lying, sitting or standing, we function in an environment where gravity plays a huge role.

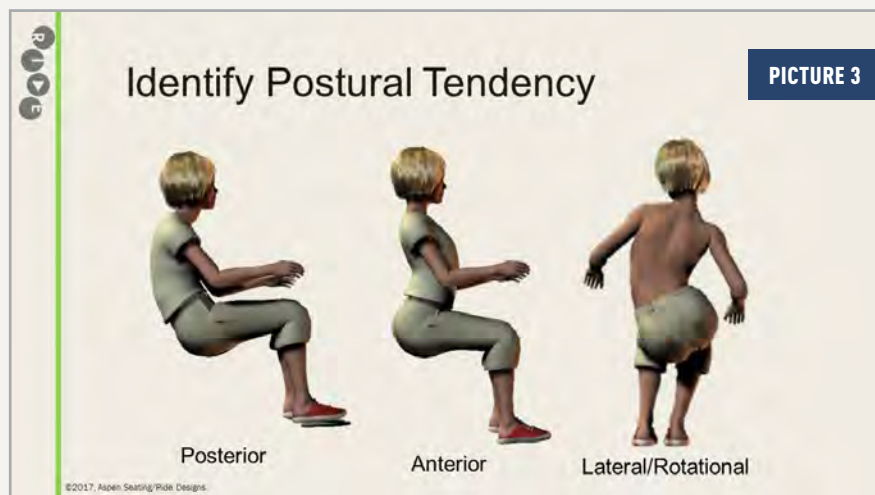
During typical development, there is smooth progression through developmental stages encompassing a variety of movements; but children with low tone may be unable to counteract gravity in the first orientation of lying—much less the others. Raising head and shoulders against gravity in prone or flexing hips and reaching with arms in supine lying may be difficult or impossible. Therapeutic positioning in lying at early stages offers antigravity experiences that hypotonic children are unable to achieve on their own.

We can think of it as being a “human sandwich.” This describes the reality of our lives as human beings, functioning on a support surface and constantly influenced by gravity.

Therapeutic positioning also builds the foundation for a future of well-aligned and functional sitting, beginning with a stable lying posture. Habitual lying postures can become destructive if they are not identified and corrected early. Long hours spent lying with limbs in extreme positions secondary to lax ligaments stresses vulnerable joints. Habitually asymmetrical postures in lying can eventually lead to a distorted pelvis and spine that will complicate wheelchair seating. Positioning assistance in lying is also essential for adults with acquired hypotonia. A well-aligned, supported lying posture helps protect joints and facilitates preserving the symmetrical body with which most people are born. Attention to this aspect of positioning is often overlooked in the United States. But if it is addressed properly, it will set the stage for successful seating interventions going forward because lying and sitting are linked and will affect each other over time. In fact, the Chailey Levels of Motor Ability (Pountney et al, 2004) specifically link prerequisite lying development with achievement of beginning sitting skill in children—the ability to lie in balance being a foundation for balanced sitting.

Impaired lying balance is associated with sitting challenges. Sitting problems are more visible and extreme because the weight-bearing surface area of the body is much smaller, and the challenge of gravity is greater. Yet sitting is highly desirable for physical, social, and psychological reasons as well as mobility. In sitting, a great deal more support is necessary compared to lying to counteract the forces of gravity and natural postural tendencies.

position if lost. Considering postural tendencies and their influence on seating outcomes (negative and positive) for people with low tone is essential during evaluation. Hetzel (2013) describes the importance of supporting people in a non-destructive postural tendency. Typical activities wheelchair users engage in are sitting, moving from place to place (propelling, driving or being pushed), and fine motor/functional activities like self-care and using technology. By determining the proportion of time spent doing these activities in a person's day, appropriate goals can be established during the wheelchair evaluation. For many clients sitting and doing fine motor/functional activities will win out, but in any case, understanding this balance is an essential part of the evaluation—especially for people with hypotonia for whom fatigue and endurance are often important considerations.



Picture 3: Example postures associated with posterior, anterior and lateral/rotational tendencies

WHAT ARE POSTURAL TENDENCIES?

The Oxford dictionary defines tendency as “an inclination towards a particular characteristic or type of behavior.” All of us have postural tendencies as humans, but the stakes are higher for wheelchair users. Here we are focusing on what typically happens in a person with low muscle tone sitting under the influence of gravity. The foundation for sitting is the pelvis, and in that context three postural tendencies occur—posterior, anterior and lateral/rotational—as illustrated in the Picture 3 example postures.

When people with low tone have a limited repertoire of posture choices, they often cannot easily independently recover their

requiring careful thought and input from all team members and especially from the wheelchair user, family and caregivers. The more information gained from the history, prognosis, mat assessment and, ideally, seating simulation during the evaluation process, the better. Our seating recommendations have long term effects, and funding challenges often preclude early equipment replacement if we don't get it right.

WHEELCHAIR FRAME STYLES AND LOW TONE

Given the powerful influence of gravity on a person with low tone, tilt-in-space and recline seat functions are important considerations in selecting a wheelchair frame. Recline was developed first and has been available for upward of 80 years on some wheeled mobility devices. Recline allows opening of the seat-to-back angle as the back moves rearward, while the seat remains in a steady orientation—like a lounge chair at the pool. This allows the person to sit with a more open hip angle, which can have good and bad consequences. Individuals with low tone may respond to an excessively closed seat-to-back angle by collapsing forward or scooting out if they are uncomfortable and strong enough. Using small amounts of recline can resolve this problem and positively influence breathing and digestion by allowing more chest and abdominal expansion. Recline can also contribute to sliding out of the chair unless specific action is taken to keep this from happening.

The posterior tendency (not to be confused with a posterior tilt/sacral sitting) is one that allows the person to rest back in a well-aligned posture without distortion of the body while sitting. The resting posture must allow the person to engage in activities, while being able to rest back in appropriate alignment for breaks. For people with low tone, fostering a posterior tendency is the non-destructive way to go, with less chance of contributing to skeletal distortions that will result in future complications, pain and dysfunction. This can be relatively simple for some clients and highly complex for others,

(CONTINUED ON PAGE 32)



PICTURE 4

Picture 4: Extreme sacral sitting and forward trunk collapse when using tilt only.



PICTURE 5

Picture 5: Using the same seating system as in Picture 4, with addition of recline, promoted more open and upright posture and reduced sliding out

CLIENTS WITH LOW MUSCLE TONE (CONTINUED FROM PAGE 31)

Tilt-in-space developed later, about 30 years ago in the early 1980s. Tilt-in-space is like a rocking chair—the seat and back remain at the same angle to each other, while the whole unit changes orientation relative to gravity. This means that a person who is tilted will experience weight shift rearward while their hip angle remains constant. Adjustable and fixed (non-adjustable) tilt-in-space can both influence muscle tone and provide gravitational relief to support sitting posture. Adjustable tilt is necessary for weight shifts. When using tilt, the seat-to-back angle does not open and as a result, some people have less tendency to slide out, but

this is not universal. When people cannot tolerate a seat-to-back angle, they may persistently seek relief by sliding out to a more open position. This is seen in people with low as well as high tone.

In the 1990s, Medicare funded only recline wheelchairs regardless of client need. A full range of choices is available today for people with low tone, who may benefit from both tilt and recline for optimal function. Tilt allows for relief from the forces of gravity while counteracting the tendency to slide out, while use of recline can make a huge functional difference in seating outcomes with respect to posture (see Pictures 4 and 5), as well as breathing and digestion. Using tilt and recline to alleviate negative influences of gravity on sitting posture can be done with manual and power wheelchairs.

- Manual frames—ultralight or lightweight adjustable frames can provide fixed tilt (seat slope) and recline (open hip angle) to benefit people with low tone. This is done through frame configuration and/or seating; for many people just a few degrees makes all the difference. This way a person can benefit from small degrees of tilt and recline with the transportability and light weight of a K0004 or K0005 frame.

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- Manual tilt and recline frames (including adaptive strollers)—dependent wheelchair users have access to fixed and adjustable tilt-in-space, recline or combined mechanisms. Fixed tilt and recline can be configured through the frame and seating to limit options, if necessary. Self-tilting is an alternative for those who have the physical and mental ability to operate a switch (using a power tilt add-on) or self-tilt lever to change their own orientation.
- Power wheelchairs—use of power tilt and recline together in small increments of a few degrees can help low tone users find an ideal hip angle with adequate support to counteract both gravity and any tendency to slide out of the chair.

SEATING COMPONENTS

A wide variety of seating products work well for individuals with low tone once the correct mobility base and postural support needs are determined. Support surface contact with awareness and careful selection of cushion and back properties are used to stabilize the core—pelvis, back and upper legs. Secondary supports must be carefully selected. Pelvic positioning belt attachment points are crucial; if placed too far rearward (i.e. 45 degrees), some people with low tone will slide under and out, while others will collapse forward. Four-point pelvic belts offer better stabilization for some clients and can be configured to counteract anterior pelvic posture tendencies. Similarly, anterior trunk supports are chosen carefully for individuals with low tone who are “surface seekers” and tend to hang forward into the support. Back and trunk support selection, combined with use of tilt and recline can address this issue. Provide appropriate support for the individual’s level of head control—this support may be needed full-time

(CONTINUED ON PAGE 34)

CLIENTS WITH LOW MUSCLE TONE
(CONTINUED FROM PAGE 33)

or only used when tilting/reclining or fatigued. Upper extremity supports like arm troughs or trays are used to assist with trunk positioning. These supports can prevent or significantly reduce upper limb drag, which negatively influences the upper body and head position, while increasing risk of potential injury to vulnerable joints.

SUMMARY

Clients with low tone have unique seating needs. Using the appropriate combination of seating and wheelchair configuration—based on comprehensive assessment findings inclusive not only of tone, but postural tendencies, daily activities, and prognosis for future change and comfort—will yield the best functional outcomes, promote participation and ultimately enhance the client's quality of life.

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POSITIONING STRATEGIES FOR A CHILD WITH LOW MUSCLE TONE

Adam is a 4-year-old boy with cerebral palsy (tetraplegia), partial agenesis of the corpus callosum and cortical vision impairment who came to our clinic for assessment of his seating and mobility needs. His mother and caregiver attended the initial session and stated their goals were to 1) determine if Adam was capable of operating a power wheelchair; and 2) improve his sitting posture. Adam had a Special Tomato adaptive stroller that he used for community mobility, but he was dependent on caregivers to push him and sat with poor posture in this device (see Picture 1). He also had a Rifton Pacer gait trainer that he used at home and in pre-school. His mother reported that he used this device up to three hours per day for mobility, but required assistance from a caregiver to move and maneuver the device.

Adam is non-verbal, but he was working with a speech therapist to use an eye gaze system for communication. He wore eyeglasses and was able to see and recognize symbols on a screen and select icons to speak words. When he was younger, his family purchased a motorized ride-on toy car and modified it with a single switch. Adam was highly motivated to operate this toy car using a switch placed behind his head to control stop and go functions, despite less than ideal posture and an inability to operate turns.

I gathered information about Adam's medical history and conducted a physical assessment and mat exam at the initial visit. Adam had low muscle tone proximally, in his trunk and neck. He required maximum assistance to sit. He demonstrated spasticity in his extremities, and when he attempted to reach toward an object, he moved in flexor patterns. The muscles that cause his joints to flex overpowered the muscles that promote extension. As a result, he demonstrated trunk and neck flexion, and his hips flexed, adducted and internally rotated when he attempted

movements. This exacerbated his tendency to sit with trunk kyphosis and neck flexion, and he was unable to move to a more neutral and extended posture against gravity due to overall trunk weakness and muscle imbalance.

When I conducted a mat exam with Adam in supine, I found that he had flexibility within normal limits at the hips, but he demonstrated an increase in tone and resistance when I moved his hips into abduction and external rotation.

He also demonstrated normal passive range of

motion in his upper extremities, but I observed an increase in tone for shoulder abduction and external rotation. I observed moderate tightness of his hamstrings that limited his knee extension. His ankles were flexible for all planes of movement.

I also assessed Adam's spinal flexibility with respect to his pelvis in both supine and sitting. In sitting, he demonstrated a tendency to sit with a mild right pelvic

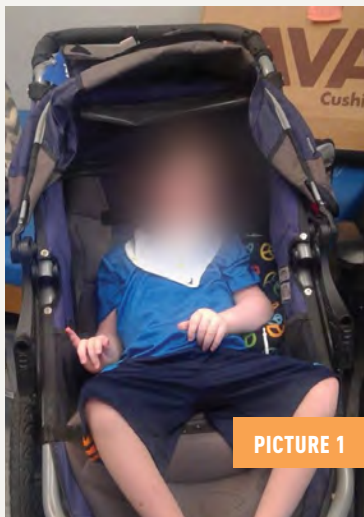
obliquity (low on his right side, or a frontal pelvic angle of +3 degrees) and a mild trunk lean to the left (frontal sternal angle of -5 degrees). He was able to achieve neutral pelvic position in the frontal, sagittal and transverse planes with assistance. He also demonstrated flexibility in his cervical, thoracic and lumbar spine and was able to achieve a neutral frontal sternal angle and an upright and de-rotated trunk and head with assistance.

During the initial evaluation, I also observed Adam's ability to activate simple switches using various body parts to control a switch-adapted toy. He understood cause and effect concepts and followed commands to make the toy "stop" and "go." He was able to activate and release switches placed next to his head (by rotating his head left and right) as well as behind his head (by extending and flexing his neck). He demonstrated a motor delay for releasing switches at all sites of control.

After gathering this initial information, Adam returned to our clinic for a second assessment session. Our goal at the second visit was to determine the features and properties of a seating system that would help him achieve optimal sitting posture. We also hoped to assess his ability to activate switches and operate a power wheelchair with his posture adequately supported. His mother and caregiver escorted him to the session. The rehabilitation technology supplier was also present to participate.

Using an adjustable seating simulator (see Picture 2), we used a variety of

ADAM WAS HIGHLY MOTIVATED TO OPERATE THIS TOY CAR USING A SWITCH PLACED BEHIND HIS HEAD TO CONTROL GO AND STOP FUNCTIONS, DESPITE LESS THAN IDEAL POSTURE AND AN INABILITY TO OPERATE TURNS.



PICTURE 1



PICTURE 2



PICTURE 3



PICTURE 4



PICTURE 5

Picture 1: Adam was dependent for mobility in his stroller device.

Picture 2: The seating frame of this simulator allows team members to adjust parameters such as seat depth and width, back support height and seat-to-back angle. Seating components such as lateral trunk supports and hip guides, medial knee supports and a variety of headrests, pelvic belts and chest harnesses attach and adjust for different users. Seating specialists may also attach off-the-shelf seating and custom contoured vacuum bags using the adjustable frame for support.

Picture 3: Vacuum bags were used on the seating simulator to test Adam's posture, functional abilities and comfort in a custom contoured seating system.

Pictures 4 and 5: Front and side views of Adam sitting in his new custom contoured seating system.

foam pieces and modular components to test seating strategies and features. A seating simulator is a highly adjustable seating frame that can incorporate various cushions, back supports, and external supports to fit individuals ranging in size from young children up to large adults. Our seating simulator sits on top of a power wheelchair base so that individuals can test various drive control systems as well.

WE ALSO HOPED TO ASSESS HIS ABILITY TO ACTIVATE SWITCHES AND OPERATE A POWER WHEELCHAIR WITH HIS POSTURE ADEQUATELY SUPPORTED.

We adjusted the seating simulator to Adam's seat depth and used foam pieces to create the features of an anti-thrust cushion, with a well for the buttocks and a rise in the cushion at approximately 1 inch anterior of the ischial tuberosities. Our simulated cushion had an approximate 1-inch rise between the buttock-well and the front edge of the cushion. The purpose of this trial was to see if an anti-thrust cushion would help Adam maintain a more neutral pelvic tilt by blocking his ability to roll the pelvis posteriorly. To fully accomplish this, he also needed full contact along his posterior trunk, especially at the sacrum. We used modular pieces and foam to simulate the features of a custom linear back with a mild lumbar support.

Adam required other external supports to achieve an optimum sitting posture. These supports included lateral trunk supports (offset low right, high left) to reduce his trunk lean to the left; lateral hip guides to keep his pelvis centered on the cushion; medial knee supports to encourage slight hip abduction and external rotation and block his flexor tone; angle adjustable foot supports with ankle huggers to keep his feet stable on the footplates; a posterior head support so he could rest his head in slight neck extension; an anterior chest support to minimize trunk flexion; and a tray table adjusted at the proper height so

he could bear weight through his forearms for sitting stability. He also required 15 degrees posterior tilt of the seat frame to help him keep his head balanced in an upright position.

Under these simulated conditions, Adam was able to sit with his pelvis, trunk, and head in a neutral position for all three planes of movement. Adam practiced activating switches to operate the power wheelchair while sitting with optimum posture. He was able to activate and release switches to control forward, left, and right directions with head movements. Compared to his previous session, he showed an increase in his ability to release the switches in a timely manner when prompted to stop.

At the end of this session, we took measurements of Adam's dimensions to set up a trial pediatric power

(CONTINUED ON PAGE 40)

POSITIONING STRATEGIES (CONTINUED FROM PAGE 39)

wheelchair with nearly identical features, supports and drive controls. The rehabilitation technology supplier arranged to have this trial chair adjusted to his dimensions and delivered it to his home for extended practice. I gave his mother and caregiver information about the purpose of the trial and asked them to gather information and video clips of Adam as he practiced. We planned for him to return later to discuss the outcome.

Adam returned to our clinic five weeks later with his mother and caregiver. The rehabilitation technology supplier was also present. His mother shared information and video clips that demonstrated Adam had continued to make progress in learning over the course of his practice sessions. He improved in his ability to stop on command, avoid obstacles in his path, visually scan the environment, and maneuver the chair various directions to move toward desired objects and people. His mother and caregiver reported concern, however, that he required frequent repositioning in the trial device. While he had maintained a stable posture in the seating simulator, he was not able to do so in the trial chair with extended use. This was problematic because as his pelvis moved into posterior tilt, his trunk became kyphotic and his head moved forward and away from the head switches. With his head out of optimum position in relation to the switches, his ability to control the power wheelchair worsened.

Due to Adam's low tone and his need for optimum sitting stability to use the head switches successfully, we determined that a trial with custom contoured molding bags was the appropriate next step. We used vacuum bags, which are made of a stretchable

plastic material with hundreds of small Styrofoam beads inside (see picture 3). The bags are pliable, and practitioners can move the beads around to match the user's shape and construct support surfaces at desired locations on the body. A vacuum pump will remove air from the bags once team members achieve the desired shape. This causes the bags to harden so that the user can sit in and experience the support and shape of a custom contoured seating system for trial. Team members create a final product using a similar method of simulation, but the process of capturing the shape and translating it to a final product varies among manufacturers.

Adam achieved his optimum posture in these molding bags and tolerated the intimate fit without complaint. As a team, we discussed at length the advantages and disadvantages of this type of seating system (as compared to the custom linear system we tried previously). A custom contoured seating system is more expensive, more likely to retain heat, and more difficult to adjust or modify when the individual changes significantly due to growth. A custom contoured system fits snug to provide optimum support, but this can limit the user's ability to wear thick clothing or heavy coats, and in some cases, limits an individual's movement or functional skills (such as reaching for objects or performing transfers).

CHOOSING THE MOST APPROPRIATE SEATING SYSTEM TO MEET ADAM'S NEEDS, GIVEN HIS LOW MUSCLE TONE, MOVEMENT PATTERNS AND NEED FOR SITTING STABILITY, REQUIRED A SYSTEMATIC ASSESSMENT PROCESS THAT RELIED HEAVILY ON THE INPUT FROM ALL TEAM MEMBERS INVOLVED.

Alternatively, a custom contoured system provides the most intimate and aggressive contact available to help an individual maintain sitting stability. Features that benefit Adam the most, such as anti-thrust (to reduce pelvic migration), medial knee support (to reduce flexor tone), lateral trunk supports (to reduce trunk lean), and posterior sacral support (to reduce posterior pelvic tilt) are all incorporated into the shape. These systems typically offer more surface area contact to the body to better control the adverse effects of sliding related to muscle weakness and tone.

After discussing the benefits and limitations of both types of systems, we determined that the custom contoured seating system would be the best option to meet Adam's need for sitting stability. We discussed various products available on the market and chose the Certified Seating Orthosis, manufactured by Certified Rehab Services, Inc. in Fort Collins, Colorado. We chose this system for a variety of reasons. This seating orthosis is a one-piece product that users can interchange between various mobility bases. Soon, Adam's family would like to use the seating system on his manual mobility base as well as the power wheelchair base. The manufacturer can fabricate the system with a variety of foams, and we selected an open cell foam that is less likely to retain heat, that is relatively easy to clean if it gets wet or soiled, and that is mold-resistant. In addition, the manufacturer provides a three-year warranty on this product and participates with the shape capture, delivery and all modifications or adjustments due to growth or change in condition over the three-year period. If Adam's body changes significantly over the three-year period, it is possible funding for a replacement system will be required since the warranty does not cover replacement related to significant growth. However, Adam's mother

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expressed little concern for this potential problem because Adam is small for his size and grows at a very slow rate compared to his peers.

After finalizing the assessment, completing all required paperwork, and submitting to insurance, Adam received authorization for a power wheelchair with the custom contoured seating orthosis we recommended. We completed the shape capture as a team, along with the manufacturer, and Adam returned to our clinic a few weeks later to receive the new system and ensure it fit him properly (see Pictures 4 and 5). His mother expressed surprise and pleasure at how well he was able to sit and hold his head upright. Adam will now continue the process of learning to operate a power wheelchair in his home and school environments, with the support of family, caregivers and therapists. Choosing the most appropriate seating system to meet Adam's needs, given his low muscle tone, movement patterns, and need for sitting stability, required a systematic assessment process that relied heavily on the input from all team members involved.

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WHAT'S THE LATEST IN REIMBURSEMENT?

For some reason, it seems a bit quiet in the reimbursement world lately – specifically with Medicare and Complex Rehab Technology (CRT). Can that truly be the case? It seems unheard of.

I am sure some reading this article think I have lost my mind; that they are spinning with multiple headaches involving reimbursement. To make myself clear, I am not saying things are easy or perfect, but as I write this article nothing new or crazy has jumped out at us. With that said, there are several topics that need to be addressed. In most cases, these are actually good things.

- New ICD-10 codes were added to the coverage policy of seat and back cushions. Back at the end of August, the policy (LCD) for wheelchair seating and positioning items was updated to include several new ICD-10 codes. This was definitely a good thing. Medicare had always had the ICD-10s for traumatic amputations from the hip and below – but what about those that were not considered traumatic? The ICD-10 codes for “Acquired absence of” which are “Z” diagnoses codes are now included. This affects all positioning items (not skin protection)—positioning backs, combination seat cushions and positioning items such as laterals. This addition will help many. One clear example is those end-users who have undergone a pelvectomy. Throughout the years I have been contacted many times by clinicians and providers regarding the proper diagnosis code, which was not originally included. Now you have one with Z89.62_. The last digit will vary dependent on the specifics for the client. If you have yet to do so, be sure to add these new codes to your system and inform your staff and referrals.

These additions also provide hope for other diagnoses to be considered. In my opinion, clinicians need to be the driver in requesting such additions. Supporting documentation would need to be submitted in a request for review of the overall policy.

- The word “audit” has always seemed taboo. For many it has not been a good thing at all. However, Centers for Medicare and Medicaid Services (CMS) recently started a new program called TPE (Targeted Probe and Educate). Medicare launched this program in July in two jurisdictions, but as of early October, it covers all four jurisdictions.

Specific providers will be informed by the MACs (Jurisdictions A, B, C or D) that they have been selected to be a part of the TPE program. The providers will know what items/products are targeted and the reasons why they were selected. Twenty to 40 claims will be reviewed per item or service in each round, for a total of three rounds of review. An example would be that they select “ABC Provider” due to a higher than normal denial rate on K0004 manual wheelchair claims. After each review, the provider is offered individualized education based on the results of the

review. Providers with moderate and high error rates in the first round of reviews, will continue on to a second round. Providers with continued high error rate after three rounds may be referred to CMS for additional action. Simply put, do not get to this step.

The goal is not to “punish” a provider but to assist them in improving their claim submissions. The hope is that the denial and appeal rates decrease. In my opinion, this is a very positive step on behalf of CMS. Not only do the providers learn, but it allows a conversation to occur between both sides. This should allow the MAC reviewers to learn as well. This actually takes me back many, many years to my time working with Medicare at one of the original DMERCs (now MACs). We had awful titles – Ombudsman—but our goal was to help providers. We were able to have conversations that would benefit all.

If you are contacted and informed that you are part of the TPE program, do not panic. Please look at this as a good thing. Be sure you and your team are open and ready to learn. I always say that Medicare (or any funding contractor) makes mistakes in processing but many of the denials I see are truly the fault of the provider and/or referral.

- When it comes to “proof of delivery,” the CRT world has it rather easy. The day you deliver the equipment is the date of service you bill – with the exception of

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delivering at a facility up to two days prior to discharge. The issue providers run into is when they ship replacement parts or seats/back. Many experienced end-users know what they want and how to properly replace specific items. Rather than making a long trip or waiting for a provider to make a delivery, the item is shipped. The question would then be what date of service is used? Most of my years in this business the delivery date was the shipment date, but then you would hear that it should be the date of receipt.

Effective Nov. 20th, CMS is removing the question of which date to use. CMS Change Request (CR) 10324 was published to simplify the requirements for documenting proof of delivery. It also clarified the differing oversight roles of its contractors in ensuring compliance. This means that as a provider you can no longer be dinged by one contractor for date of service when another contractor feels it was sufficient. You may use either the date of shipment or the date of receipt.

It's the end of the year and a busy time for everyone both in business and with friends and family. Being that it is November, there will likely be announcements made for the new year including updated fee schedules; new, updated or deleted HCPC codes and possible news on the next round of Competitive Bidding (which has been extremely quiet). Be sure to stay tuned-in with everything reimbursement.

CONTACT THE AUTHOR

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info@orionreimbursement.com.



NEW WEBSITE!

WRITTEN BY: WEESIE WALKER, ATP/SMS



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By now you may have noticed a new look at www.nrrts.org.

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For everyone, NRRTS makes it easy to contact your Member of Congress, watch live proceedings from Capitol Hill, understand the legislation and become an advocate. (<http://www.nrrts.org/advocacy>)

NRRTS will be highlighting sections of the website to promote the many great resources offered.

There truly is something for everyone!

But, if you are adventurous, explore it on your own.

And, as always, we look forward to your feedback and suggestions!

CONTACT THE AUTHOR

Weesie may be reached at wwalker@nrrts.org.

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AMNESTY PROGRAM

Beginning Jan. 1, 2018, until March 31, 2018, the NRRTS Board of Directors has approved an **Amnesty Program for awarding the CRTS® designation** to new or current Registrants who meet the following criteria:



- *Registrant or Applicant must have documented minimum of three years of experience providing direct service to CRT Consumers*
- *Be an ATP in good standing for minimum of three years at time of application*
- *Complete the Application for Registry or Renewal to the satisfaction of the Review Chair within the timeframe*

For more information, contact Weesie Walker at wwalker@nrrts.org

NEW NRRTS REGISTRANTS

Congratulations to the newest NRRTS Registrants. NAMES INCLUDED ARE FROM SEPT 22 THROUGH NOV 6, 2017.

Gregory Chilcott, ATP, RRTS®

Blackburn's
3242 Union Rd
Cheektowaga, NY 14227
Telephone: 716-688-8911
Fax: 716-558-7645
Registration Date: 10/24/2017

Jeffery Lucas, RRTS®

National Seating & Mobility, Inc.
1022 Walton Way Ste D
Augusta, GA 30901
Telephone: 706-828-4731
Fax: 423-803-1187
Registration Date: 10/16/2017

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 SEPT 22 THROUGH NOV 6, 2017.

Jack Badger, ATP, CRTS®

The Medical Store
South Burlington, VT

Anacleto Gutierrez, ATP, CRTS®

Bexar Care Home Medical Equipment and Supplies
San Antonio, TX

Ryan Jewell, ATP, CRTS®

National Seating & Mobility, Inc.
Broadview, IL

CURRENT NRRTS REGISTRANTS

The NRRTS board determined RRTS® and CRTS® should know who has maintained his/her registration in NRRTS, and who has not. The following individuals elected to maintain his/her registration in NRRTS.

NAMES INCLUDED ARE FROM SEPT. 22 THROUGH NOV. 6, 2017.

(Please note if you renewed after Nov 6, your name will not be listed until the next issue of DIRECTIONS.)

If you renewed prior to Sept 21, you were listed in a previous issue of DIRECTIONS.)

For an up-to-date verification on Registrants, visit www.nrnts.org, updated daily.

Thomas E. Adams, ATP, CRTS® Greenland NH
 Paul Arnold, ATP, CRTS® Plattsburgh NY
 Jack Badger, ATP, CRTS® South Burlington VT
 Michael A. Bales, ATP, CRTS® Bluefield VA
 Terrick T. Ball, ATP, CRTS® Owings Mills MD
 David Becker, ATP/SMS, CRTS® Torrance CA
 Ilan Michael Breiner, ATP, CRTS® Brooklyn Heights OH
 Jeffrey W. Brown, ATP, CRTS® Easley SC
 Robert Brown, ATP, CRTS® Sioux Falls SD
 Terry Buetow, ATP, CRTS® Bismarck ND
 James E. Cage, Jr., ATP, CRTS® Jefferson LA
 Jeffrey Lee Castle, ATP, CRTS® Johnson City TN
 Alan Channin, ATP, CRTS® Bronx NY
 Jeffrey Christianson, ATP, CRTS® Phoenix AZ
 Douglas D. Cobb, ATP, CRTS® Durham NC
 Michael Collins, ATP, CRTS® Lombard IL
 Douglas Crana, ATP, CRTS® Newburgh NY
 Brian M. Crenna, ATP, CRTS® Waite Park MN
 Ernie Culpepper, ATP, CRTS® Albany GA
 Scott Cumberland, ATP/SMS, CRTS® Flowood MS
 Craig Ejek, ATP, CRTS® Owings Mills MD
 Darren Esch, ATP, CRTS® McCook NE
 Marcel J. Farnet III, ATP, CRTS® Harahan LA
 Gail Ferrentino-Walsh, CPTA, ATP, CRTS® Plainview NY
 Chadwick Filer, ATP, CRTS® Huntersville NC
 Michael Fisher, BS, ATP, CRTS® Mooresville NC
 Tim Flanagan, ATP, CRTS® Huntington Valley PA
 Jonathan K. Ford, ATP, CRTS® Florence AL
 Matt Fremont, RRTS® Tucson AZ
 Michael A. Gartner, ATP, CRTS® Asheville NC
 Ron Gillette, BS, ATP, CRTS® Pensacola FL
 Richard M. Graver, Jr., ATP, CRTS® Reno NV
 Anacleto Gutierrez, ATP, CRTS® San Antonio TX
 Jeff Harbert, ATP, CRTS® Wichita KS
 Eric Hardy, ATP, CRTS® Omaha NE
 Mike Harris, ATP, CRTS® Tulsa OK
 Jeffery A. Hennessee, ATP, CRTS® Easley SC
 Christopher J. Henrichon, ATP, CRTS® Chicopee MA
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 Jim Howe, ATP, CRTS® Herrin IL
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 Robert Kavish, ATP, CRTS® Springfield IL
 Sean Kiepert, ATP, CRTS® Sandusky OH
 Michael O. Kitterman, ATP, CRTS® Ottumwa IA
 Rich Krause, RRTS® Wausau WI
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 Michael Kristopher Ledford, ATP/SMS, CRTS® Apex NC
 Danny Leibach, ATP, CRTS® Middleburg FL
 Sandro Leone, ATP, CRTS® Natick MA

Claude R. Levesque, ATP, CRTS® Palmyra ME
 Erik Lindblad, ATP, CRTS® Lombard IL
 John Lindstrom, RRTS® Duluth MN
 Christopher Liquori, ATP/SMS, CRTS® Newington CT
 Brian Marshall, ATP, CRTS® Bakersfield CA
 Kenneth A. McCallum, ATP, CRTS® Oak Creek WI
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 Lisa Michaels, COTA/L, ATP/SMS, CRTS® St. Paul MN
 Cynthia D. Miller, ATP, CRTS® Salem OR
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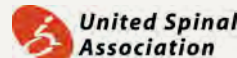
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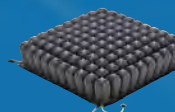
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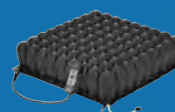
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