DIRECTIONS

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Travel & Recreation

REHAB CASE STUDY

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Standers of yesteryear were more like mini torture chambers...

Stefanie Laurence
B.Sc.Ot, OT Reg. (Ont)
Julie Keon, RSSW

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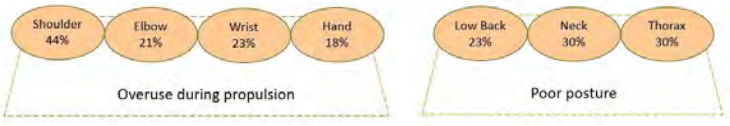
CLINICAL PERSPECTIVE - CEU ARTICLE

CEU ARTICLE REVIEW

Working with Wheelchair Users in Pain

Musculoskeletal Pain in Wheelchair Users



Anna Sokol
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iNRRTS

IN THIS ISSUE

FROM THE EDITOR-IN-CHIEF

As we end 2025, I want to thank the iNRRTS Registrants, our incredible board of directors and the iNRRTS staff — Andrea Madsen, Bill Noelting, Kathy Fisher, Lois Bodiford, Sandi Noelting and Weesie Walker. Your iNRRTS staff truly cares about the Registry and works hard to ensure all needs are met. I love working with each of them and all of you. Happy holidays to all!

Amy Odom, BS

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FROM THE NRRTS OFFICE

Letting Others Light Their Candles:
The Power of Shared Knowledge

WRITTEN BY: Jason Kelln, ATP, CRTS®

Margaret Fuller once wrote, "If you have knowledge, let others light their candles in it."

In just a few words, she captured a timeless truth: Knowledge grows more valuable when it is shared, not stored away. Yet many of us still treat what we know as something to guard —something that, if given freely, might somehow diminish our own advantage. But history, innovation and human experience all point to the same conclusion: Keeping knowledge hidden limits everyone, while sharing it can transform the world.

Knowledge is Not a Finite Resource

Unlike material possessions, knowledge does not decrease when we give it away. A single flame can light thousands of candles and lose nothing of itself. When we share what we know — skills, experiences, insights — we ignite curiosity, support growth, and empower others to reach higher than they could alone.

Human progress has always depended on this principle. Scientific breakthroughs, technological revolutions, and social movements all flourish when information flows freely. Each new idea builds on the sparks lit by others.

Sharing Knowledge Strengthens Us All

Teaching someone else deepens our own understanding. Mentorship builds connections and trust. Open collaboration accelerates progress far beyond what any one person can achieve alone.

Sharing knowledge is also an act of generosity and empathy as we help our fellow employees

At the heart of it, when we do well and our company does well. The client will benefit.

Lighting the Way Forward

Today's world gives us more ways than ever to share what we know through writing, teaching, mentoring, creating or simply offering advice when someone needs it. You never know whose life you might change with even a small piece of insight. Your experience may be the spark that ignites someone else's passion, confidence or creativity.

When we let others light their candles from our flame, we don't lose anything. Instead, we help fill the world with more light — more ideas, more solutions, more hope.

Education: The Cornerstone of iNRRTS in 2026

As iNRRTS looks ahead to 2026, education stands as a fundamental pillar shaping our future. The world-class instruction offered through our organization truly distinguishes an iNRRTS Registrant. Our ongoing monthly educational sessions and the Supplier Certificate Program play a vital role in spreading knowledge — whether it's to our colleagues at work or to the clients we serve. By sharing what we know, we help ignite the flame of learning and growth in others, continuing the tradition of collective advancement.

Reflecting on the Year and Expressing Gratitude

As we read this article, we find ourselves in the midst of the holiday season — a time when year-end reflections naturally arise. It is a period to consider lists, achievements and the progress made over the past 12 months. Personally, I am deeply thankful to the many people who have been integral and instrumental in my life, both personally and professionally.

My appreciation extends to the iNRRTS Board, whose members selflessly dedicate their time to help guide our organization in the right direction. I am grateful to the mentors who generously offer their time and advice whenever needed and to my work colleagues who consistently provide support through both good times and challenges.

Acknowledging Support and Teamwork

Serving as iNRRTS president fills me with immense pride. It is often said that such a role cannot be fulfilled alone, and I wholeheartedly agree. I am grateful for Andrea Madsen and the entire executive team, including Tom Simon Anne Kieschnik, Dave Nix and Darell Mullen whose collaboration and commitment make our progress possible.

FROM THE NRRTS OFFICE

Above all, my deepest gratitude goes to my wife, Lia, and our children, whose unwavering support means the world to me. I am thankful for them and for the lessons I continue to learn from their example.

Closing Thoughts

I encourage everyone to make the most of this wonderful season. Spend quality time with those you cherish, and continue to share your light — spreading knowledge, kindness and inspiration wherever you go.

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Jason Kelln, ATP, CRTS®, is president of iNRRTS and became the first Canadian iNRRTS Registrant in 2018. He is the recipient of multiple recognitions, including iNRRTS' Simon Margolis Fellow and Distinguished Service awards and the Queen Elizabeth Platinum Jubilee (Sask) Medal Recipient. Kelln has been an owner of PrairieHeart Mobility since 2022.

LIFE ON WHEELS

Todd Hargroder Drives Innovation in Wheelchair Mobility

WRITTEN BY: Rosa Walston Latimer

In a world brimming with challenges, Todd Hargroder stands as a beacon of determination and innovation. He's known as a "serial entrepreneur" and has dedicated over three decades to transforming the landscape of wheelchair mobility products. Hargroder's journey from promising motocross racer to innovative entrepreneur living with a spinal cord injury powerfully illustrates resilience in the face of adversity.

Todd Hargroder in the early workspace of Accessible Designs Inc. — the company he started in 1993 in his parents' garage.

Todd Hargroder competing in a motocross event in Hurricane Mills, Tennessee, in 1985.

Growing up in the countryside near San Antonio, Texas, Hargroder developed a knack for mechanics early in life, inspired by his father's construction business and his love for motorcycles. Hargroder's life took a dramatic turn at the age of 19 when he sustained a spinal cord injury in a motocross accident on June 11, 1986 — a date forever etched in his memory. "Bad stuff happens fast," he said, "I knew in a second, my life had changed forever."

Following his injury, Hargroder spent considerable time in rehab, which he now reflects on as a crucial period for his recovery. With the strong support of his family and friends, he emerged with a steadfast resolve to adapt. "For a guy in a chair, I have it probably as good as anybody can," Hargroder said. "But I've worked my butt off to be here!"

Drawing on his natural mechanical inclination and the knowledge he gained from years spent around his father's construction company and racing buddies, Hargroder began modifying equipment to enhance his independence. What started as a necessity to adapt to his new life evolved into a business idea. "People started asking, 'Hey, where did you get that? Can I get one?'" This type of interaction sparked the inception of Accessible Designs Inc. in 1993, founded in Hargroder's parents' garage.

Over two decades, Hargroder transformed Accessible Designs Inc. into a leader in wheelchair mobility. He introduced several industry firsts, such as carbon-fiber backrests and wheelchair disc brakes. "I don't design for codes. I design for the users' needs," he said, emphasizing his commitment to functional innovation. Hargroder's products always focus on improving the user experience, a testament to his understanding as a wheelchair user.

After selling Accessible Designs Inc. to Stealth Products in 2015, Hargroder spent four years working with Stealth R&D. In 2022, Hargroder founded Soul Mobility Inc., a company dedicated to continuing his mission to bring user-inspired designs to the mobility market. The Soul Mobility Inc. flagship product, the Power-Flex, transforms manual wheelchairs into lightweight power chairs in less than 30 seconds, without tools or adapters, giving users the flexibility to choose their mode of mobility based on their needs.

"I pushed a manual chair full time for over 35 years," Hargroder said. "Even with the best equipment in the world, pushing a wheelchair is hard." This common challenge faced by many wheelchair users inspired him to close the disparity between the need for power assistance and the desire for a more compact solution that aligns with his active lifestyle. "Many manual users don't want to shift to a large power chair because it disrupts their lifestyle and environment," Hargroder said. "Throughout my life on wheels, I have experienced firsthand the gaps in the wheelchair industry and have been blessed with the mind and ability to design solutions to fulfill my needs and the needs of many other wheelchair users worldwide."

Despite his success, Hargroder has encountered significant

barriers in his ongoing quest for innovation. “The Food and Drug Administration’s regulatory process for bringing new technology to the mobility market, while partially necessary to ensure the users’ safety, is overly complex and a huge burden in time, fees and resources for companies. This process stifles or even kills a lot of great innovations within the start-up ecosystems. And after a company survives the regulatory process, they face another significant barrier to innovation — the daunting and often unclear path of reimbursement and navigating HCPC (Healthcare Common Procedure Coding System) codes,” he said. “The health care industry has to be the only industry I can think of where consumer demand for a product can be exceptionally strong, but if CMS (the Centers for Medicare and Medicaid Services) doesn’t have an existing code or adequate reimbursement, it will fail and not be made available to the end consumers needing it the most! If we want to truly support innovation, there is an urgent need for reform in these areas to facilitate the emergence of new ideas and new companies.”

Hargroder's work at Soul Mobility Inc. is not just about products; it also advances a broader mission to improve access, inclusion, and independence for wheelchair users globally at work, school and home. For the past five years, as an adjunct faculty member at the University of Pittsburgh School of Rehabilitation Science and Technology, Hargroder has shared his industry insights and lived experiences with students, shaping the next generation of innovators.

"I try to encourage students not to overthink a problem, hoping to instill a sense of creativity that can transcend barriers," he said. "Students often bring fresh perspectives to challenges I've encountered in my own life." Hargroder encourages his students to brainstorm and experiment, leading to innovative solutions that can be implemented in real-world applications. "Because of my limited hand function, one student saw the need to design a custom drawer pull for me that made a significant difference in my daily life." These interactions not only provide valuable learning experiences for the students but also inspire Hargroder in his own endeavors. "It's a two-way street — I feel I've learned as much from them as they might have learned from me."

Reflecting on his own journey, Hargroder recognizes the importance of collaboration and community engagement. He is a firm believer in the power of shared experiences. "We can only make a difference if we show up," he said, highlighting his participation in events like the recent NCART, U.S. Rehab

Todd Hargroder takes in the warm atmosphere of the Cayman Islands.

Todd Hargroder utilizes the PFX SoCal Manual Tilt, a product of Soul Mobility Inc.

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LIFE ON WHEELS | CONTINUED FROM PAGE 7

and iNRRTS Washington, D.C., Congressional Fly-In, meeting with representatives from the House and Senate to advocate for crucial issues affecting the complex rehab industry.

Hargroder seeks to balance work commitments with his life needs. In his free time, he enjoys road trips through the Texas Hill Country and down to the beaches, as well as the adventure of traveling throughout the Caribbean, where he can enjoy the warm atmosphere. Music is another passion, as he enjoys immersing himself in Texas's diverse music scene. Living along the San Antonio River, Hargroder takes advantage of his surroundings and can roll right out to enjoy the local sights, sounds and vibrant community interactions. "San Antonio is that big city with a small-town feel."

A dedicated and dynamic entrepreneur, Hargroder's reputation is built on an unwavering optimism and a commitment to solving problems. His philosophy is straightforward: "You don't get over it; you get through it." With each innovative product and initiative, Hargroder continues to exemplify the spirit of determination that defines his life and work, inspiring many individuals within and outside the disability community.

In the coming years, Hargroder plans to expand Soul Mobility Inc. and its impact on the mobility industry, leveraging his experience and insights to empower others. "If we can't do it, who can?" he said, embodying the tenacity that characterizes his entrepreneurial journey.

As he approaches his 59th birthday, Hargroder carries with him the lessons learned from a life spent on wheels. In his world, innovation is not just making a product; it is a testament to resilience and ultimately redefining the possibilities for wheelchair users around the world.

CONTACT

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Todd Hargroder, who lives in San Antonio, Texas, is an entrepreneur and innovator in the wheelchair mobility industry with over 35 years of experience. After a spinal cord injury, he founded Accessible Designs Inc., which became a global leader in adaptive products. After selling the company in 2015, Hargroder founded Soul Mobility Inc. (https://www.soul-mobility.com/), focusing on creating innovative solutions such as the Power-Flex power-assist device for manual wheelchair users. He is also an adjunct faculty member at the University of Pittsburgh School of Rehabilitation Science and Technology.

Todd Hargroder (second from left), founder of Soul Mobility Inc., accepts the BexarBio Innovation Summit award.

Todd Hargroder accepting the RESNA IMPACT Award in 2023.

Todd Hargroder is a dynamic innovator in wheelchair mobility.

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MOMENTS WITH MADSEN

Honoring Commitment and Community

WRITTEN BY: Andrea Madsen, ATP

As I reflect on this past year at iNRRTS, I am continually reminded that our organization's strength rests in the dedication of the people who support and advance its mission. Our progress is not the product of any single accomplishment; it is the collective result of decades of leadership, professional commitment and a deep belief in the essential role of Complex Rehab Technology.

iNRRTS has always been, at its core, a community-driven organization. From its earliest beginnings, the Registry was built by people who recognized that high-quality CRT provision depends on a foundation of professional standards, competency and accountability. Today, our mission remains grounded in those principles, strengthened by the remarkable individuals who have shaped our past and continue to propel our future: our board members, registrants, industry partners, educational contributors and the dedicated staff who keep the organization thriving.

This message is, above all, one of gratitude, for the commitment, collaboration and heart that define the iNRRTS community.

Honoring Our History and Simon Margolis' Legacy

No reflection on the journey of iNRRTS would be complete without recognizing the extraordinary leadership and vision of Simon Margolis. His contributions to CRT and to iNRRTS were foundational. He believed deeply in elevating professional standards and the CRT supplier's professional role, and he championed the idea that those who provide complex rehab equipment should be recognized for the specialized expertise and responsibility their work demands.

Margolis' dedication shaped the Registry's culture, one rooted in ethics, education and advocacy. His influence continues to guide our values, and his legacy lives on in every Registrant who commits to excellence, every educational initiative we undertake and in every effort to strengthen the professional identity of CRT suppliers.

We owe a profound debt of gratitude to Margolis. His leadership paved the way for the work we do today, and his vision continues to inspire the mission-driven spirit of iNRRTS.

Leadership that Stewards Our Mission Forward

Our board members carry forward that same spirit of service and purpose. Their work often takes place behind the scenes, yet their influence is visible in every advancement the Registry makes. This year, as in years past, they have provided thoughtful governance, strategic direction and unwavering commitment to the values that define iNRRTS.

Board members balance their responsibilities to the Registry with demanding roles in practice. Their willingness to share their expertise and invest their time exemplifies true leadership. Their work ensures that iNRRTS remains relevant, effective and grounded in the needs of the CRT community.

Our Registrants: The Foundation of Professionalism in CRT

The registrants of iNRRTS are the heart of our organization. Each one has chosen to pursue a path of professionalism, accountability and continual learning in a field where technical knowledge and compassion must work hand in hand. Their daily work is challenging, requiring complex problem-solving, clinical collaboration and persistent advocacy for individuals with significant disabilities.

By aligning with the Registry, Registrants affirm their commitment to ethical practice, competency and ongoing education. They contribute to a culture that elevates CRT as a profession and strengthens the credibility of the supplier role within the broader health care system. Their dedication is visible in the quality of service they provide and in the positive outcomes they support for the individuals and families who rely on CRT.

Partnerships that Strengthen Our Community

iNRRTS continues to be supported by corporate, association and individual "Friends of iNRRTS" as well as educational contributors whose partnerships enhance the value we deliver to Registrants. These organizations and individuals understand that professional development and ethical standards are essential to sustaining excellence in CRT.

Our "Friends of iNRRTS" provides critical support that allows us to expand educational opportunities, maintain operational stability and develop new initiatives that benefit the entire CRT community. Their investment demonstrates a shared belief in the importance of empowering suppliers through knowledge and accountability.

Our educational contributors: clinicians, suppliers, researchers and thought leaders share expertise that enriches the continuing education we offer. Their work ensures that our education programs remain current, practical and deeply relevant to the issues facing CRT professionals today.

The Staff Who Bring Our Mission to Life

Behind every successful program, event and initiative is a team of dedicated staff who keep iNRRTS running with professionalism and care. Their work is often invisible but always essential. They manage communications, support Registrants, coordinate educational activities, oversee operations and ensure that the mission of the Registry is reflected in every detail.

Our staff demonstrates exceptional commitment to the organization and the community we serve. Their reliability and passion provide continuity and stability, allowing us to remain focused on strengthening the CRT supplier profession. I am profoundly grateful for their daily efforts. My sincere thanks to the staff: Amy Odom, Bill Noelting, Kathy Fisher, Weesie Walker, Sandi Noelting and Lois Bodiford.

Reflecting with Gratitude, Moving Forward with Purpose

The past year has offered opportunities for growth, collaboration and renewed focus. As we look back, we do so with deep appreciation for the people who shaped our journey, from the trailblazing leadership of Margolis and the steadfast commitment and stalwart leadership of Walker to the ongoing dedication of today's board, Registrants, partners and staff.

Looking ahead, our commitment remains clear:

- Support the professional identity of CRT suppliers,
- Elevate education and ethical practice,
- Foster collaboration within the industry, and
- Continue building a strong, connected CRT community grounded in shared values.

A Community United by Mission and Heart

I am honored to work alongside such an exceptional and committed community. The people of iNRRTS, past and present, have built something remarkable: an organization defined not only by standards and professionalism but also by purpose, integrity and genuine care for the individuals who rely on CRT.

To our board members, Registrants, Friends of iNRRTS, educational contributors and dedicated staff: Thank you. Your commitment sustains our organization and strengthens the future of our profession.

Together, we will continue to honor the legacy of those who built this organization, while advancing the mission of iNRRTS with vision, collaboration and heart.

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Andrea Madsen, ATP, is the executive director of iNRRTS, the International Registry of Rehabilitation Technology Suppliers. She has over 20 years' experience providing Complex Rehabilitation Technology to adult and pediatric patients in Southern Minnesota, Western Wisconsin, Northern Iowa and internationally through her work with the Mayo Clinic. She holds a Bachelor of Science in business management and finance, is a credentialed Assistive Technology Professional and has been a Certified Complex Rehabilitation Technology Supplier®. She served for 10 years on the iNRRTS board of directors and as committee chair for the Midwest Association of Medical Equipment Services. She has lectured for the University of Minnesota Rochester, University of Wisconsin La Crosse, the Mayo Clinic College of Medicine and Science and at the International Seating Symposium.

NOTES FROM THE FIELD

Meet Your Board

WRITTEN BY: Amy Odom

President

Jason Kelln, ATP, CRTS®, is a sales manager and an Assistive Technology Professional with PrairieHeart Mobility, a Saskatchewan-owned mobility products company.

Having entered the industry in February 1999, he has had a varied career from

complex rehab with spinal cord injury, multiple sclerosis, Amyotrophic Lateral Sclerosis, and pediatrics. Kelln has a passion for the industry and is a 2020 CAOT/SSOT Citation Award recipient. He has presented papers at CSMC and ISS. Kelln, an iNRRTS Registrant since 2018, was the first Canadian to become an iNRRTS Registrant and is a recipient of the Simon Margolis Fellow Award.

President-Elect

Tom Simon, ATP, CRTS®, is an Assistive Technology Professional and works for Numotion in Dallas, Texas. Simon has been in the Complex Rehab Technology industry for more than 20 years. He has been the review chair for Region A, secretary and vice president on the Executive Board and involved throughout the entire organization. Simon has been serving the ALS population from the beginning by attending both ALS Clinics in the Dallas-Fort Worth area, Texas Neurology and UT Southwestern Medical Center. He has been a Registrant since 2005 and a CRTS® since 2007.

Vice-President

Darrell Mullen, RRTS®, works for Tango Medical in Moncton, New Brunswick. His passion for the industry was sparked after his father had a stroke and required the use of a wheelchair. He entered the industry in 2006 as a service technician and now specializes in custom seating and solution design/fabrication. In 2013, Mullen received the Citation Award from the Canadian Association of Occupational Therapists for his contribution to the health and wellness of Canadians. Never content with the status quo, he enjoys pushing innovation with product research and development. He became an iNRRTS Registrant in January 2021.

Treasurer

Anne Kieschnik, BSW, ATP, CRTS®, has extensive experience in Complex Rehab Technology, spanning direct service provision, program direction, service management and business ownership. She has been deeply involved in the development and promotion of the Assistive Technology Professional and Certified Complex Rehabilitation Technology Supplier® certifications, maintaining both throughout her career. Kieschnik has been an iNRRTS Registrant since its inception in 1993 and has previously served on the board of directors as vice-president and director at large. She has contributed significantly to the Registry's growth and governance over her more than three decades of experience.

Secretary

Dave Nix, ATP, CRTS®, has been serving wheelchair users since his high school days in Tampa, Florida, when Everest and Jennings was the only viable manufacturer. He grew up serving patients and realized early that this vocation fulfilled his desire to help people who relied on assistive technology. He still loves taking care of clients and can be found changing batteries on a customer's kitchen floor in Chicago, fitting a pediatric wheelchair in Wisconsin or helping a Michigan customer learn how to operate a new device while making friends with her friendly terrier. He loves to fit and modify wheeled mobility for international users and has traveled to Romania, Jordan, Guatemala, and northern Iraq to serve. "What may end up in our U.S. dumpsters is received with gratitude in some countries. It's humbling and gives me great joy." Dave has been an iNRRTS Registrant since 2000.

At-Large Directors

Chad Filer, CEAC, ATP/SMS, CRTS®, is a RESNA-certified Assistive Technology Professional and Seating and Mobility Specialist. He has been an iNRRTS Registrant since 2013 and a CRTS® since 2015. Filer holds a bachelor's degree from Embry-Riddle Aeronautical University in management and a master's degree from Northeastern University in leadership and organizational communication. Filer works for Carolina's Home Medical Equipment in Matthews, North Carolina.

Denise Harmon, ATP, CRTS®, brings 30 years of experience as a professional Complex Rehab Technology Supplier, dedicated to serving communities across Illinois. A committed leader within the Registry, Harmon has been an iNRRTS Registrant since its inception in 1993, making her one of the organization's longest-standing members. Over the decades, she has contributed significantly to the growth and governance of the Registry, serving on the iNRRTS Board in multiple leadership roles, including president, past-president, and director at large, and as an advisor through the Past-Presidents Committee. Her unwavering dedication reflects not only her professional expertise but also her deep commitment to advancing the mission and values of iNRRTS

and supporting the CRT community.

Brian Coltman, ATP/SMS, CRTS®, has been employed by Michigan Medicine/University of Michigan Wheelchair Seating Service in Ann Arbor, Michigan, for 14 years. He is a member of the Michigan Medicine Pranger ALS Clinic/ALS Center of Excellence and PM&R physician wheelchair clinic. Coltman provides consultation and supplier coordination, detailed evaluation for and provision of power and manual mobility systems, custom seating and complex rehab equipment. He has over 40 years of experience in direct patient care for durable medical equipment and Complex Rehab Technology. In his personal life, he enjoys family, hunting, fishing, physical activity, and all things outdoors. Coltman has been an iNRRTS Registrant since August 1996 and a CRTS® since 1998.

Michelle Harvey, BSC HONS OT, RRTS®, has over 18 years in the mobility and accessibility industry, with a background in occupational therapy. Harvey is currently the chief operating officer at HME in British Columbia. She has been a speaker at the International Seating Symposium, the European Seating Symposium and the Canadian Seating and Mobility Conference. Additionally, Harvey is certified in Ride's Custom Seating and Manual Handling. She serves on the Canadian Advisory Committee and became an iNRRTS Registrant in 2021.

U.S. Review Chair, Region A

Jeff Decker, ATP/SMS, CRTS®, is an Assistive Technology Professional and a Seating and Mobility Specialist for National Seating & Mobility. He has more than 20 years of experience in serving some of the most complex pediatric and adult mobility patients with neurological, spinal cord and skeletal asymmetry diagnoses. Decker has been an iNRRTS Registrant since 2011 and a Complex Rehabilitation Technology Supplier® since 2013.

U.S. Review Chair, Region B

Kathy Fallon, ATP/SMS, CRTS®, is a member of the complex rehab team at Kennebec Pharmacy & Home Care, now National Seating & Mobility, where she has worked for many years. With 30 years of industry experience, she has a vast knowledge of durable medical equipment and specializes in custom and manual power wheelchairs, seating systems, standers and bath safety for all ages. Fallon earned her Assistive Technology Professional certification in 2003 and her Seating and Mobility Specialist certification in 2025. She has been an iNRRTS Registrant since 2000 and a Complex Rehabilitation Technology Supplier® since 2003. Fallon currently helps serve the communities of Central and Southern Maine, from Augusta to Saco.

U.S. Review Chair, Region C

Parker Fadler, ATP, CRTS®, is a RESNA-certified Assistive Technology Professional with 14 years in the CRT industry. He holds a bachelor's degree in Fisheries and Wildlife Management and Forestry with a minor in Biology. Fadler has been an

iNRRTS Registrant and a Complex Rehabilitation Technology Supplier® since 2019. Most recently, he was an at-large director on the iNRRTS Board. He works for Alliance Rehab and Medical Equipment in Columbia, Missouri.

U.S. Review Chair, Region D

Kristen Decker, ATP, CRTS®, is the rehab field manager at Handi Medical Supply, a durable medical equipment provider founded and based in St. Paul, Minnesota. She leads a team of Assistive Technology Professional suppliers and complex rehab technicians delivering rehab and mobility solutions. With nearly a decade of experience in the DME industry, Decker focuses on advancing customer experience, streamlining operations and strengthening partnerships with clinical teams. She is passionate about coverage advocacy, community education on rehab solutions and fostering collaborative, whole-person care. Decker has been an iNRRTS Registrant since 2021, earning her Complex Rehabilitation Technology Supplier ® certification in 2023.

Canadian Review Chairs

Region A:

Robbie Scott, RRTS®, has lived in Clyde River, Prince Edward Island, Canada, his entire life. He began his career as a plant manager at a truss plant before transitioning into the medical equipment field in 2008, starting as a technician with Harding Medical. After several years with Lawtons Drugs in a similar role, Scott returned to Harding Medical in 2012, initially splitting his time between sales and technical work before moving into full-time sales, where he continues to serve clients today. In addition to his professional work, Scott operates a body shop for car repairs. Outside of work, he enjoys golf, hockey and exploring the Island on his four-wheeler and Spyder with his wife, Pauline, and their son, Liam. He has been an iNRRTS Registrant since 2021.

Region B:

Michael Joyce, RRTS®, began his career in 2003 with Creative Mobility in Okanagan, British Columbia, Canada, as a sales representative specializing in Complex Rehab Technology and pediatrics, often taking a hands-on approach by performing technical work in rural areas. In 2010, he became co-owner of Creative Mobility, gaining experience across all departments, including service, accounting, purchasing, sales and contract management. Following the sale of Creative

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Mobility, Joyce spent nearly five years in management with Motion Specialties, supporting multiple aspects of the business. He later joined HME Home Health in British Columbia, where his primary roles include product education, serving as a corporate programs liaison, and supporting sales, service and systems. Throughout his career, Joyce has built strong relationships with manufacturers, distributors, therapists, funders and even competitors, reflecting his commitment to collaboration and industry advancement. Joyce has been an iNRRTS Registrant since 2022.

Region C:

Stefanie Sukstorf Laurence, B.Sc. OT, OT Reg.(Ont.), RRTS®, is an occupational therapist and the clinical educator for Motion (formerly Motion Specialties) across Canada. Laurence has been working with people with special needs since 1980, when she was a camp counselor for Easter Seals. She spent 16 years at Bloorview Children's Hospital (now part of Holland Bloorview Kids Rehabilitation Hospital) as the coordinator of seating, equipment and mobility, in charge of all durable medical equipment for inpatients and transition to home. Laurence joined Motion Specialties in 2005 and combined teaching with hands-on involvement in durable medical equipment prescription. She was on the planning committee for the Canadian Seating & Mobility Conference. Laurence has been an iNRRTS Registrant since 2021.

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Amy Odom, director of operations for iNRRTS, has been with the organization since 2002. She has more than 30 years of experience in the marketing and operations fields. Odom earned an agricultural communications degree from Texas Tech University. She resides in Lubbock, Texas, and is a proud Texas Tech Red Raider.

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One Size Fits None:
Why Modern Seating Must Adapt to Infinite Needs

WRITTEN BY: Tim Balz, CEO and founder, Kalogon

One of our customers, Anne*, a 39-year-old mentor, fisher and outdoor enthusiast living with an incomplete spinal cord injury at the C1–C2 level and Brown-Sequard Syndrome, could only sit comfortably for 30 minutes to an hour before needing to recline for hours or exit her chair completely. This recline dependency limited her ability to drive safely and made it difficult to participate fully in daily life. After two decades of cycling through every cushion on the market, she had resigned herself to choosing between pain and participation.

Anne's experience illustrates a fundamental problem in the Complex Rehab Technology industry: Seating systems optimized for one activity inevitably sacrifice performance in others, often forcing users into impossible trade-offs between clinical safety and functional goals.

The "Average User" Fallacy

Assistive Technology Professionals and clinicians work hard to understand users' primary activities, functional goals and the environments they navigate daily. The assessment process aims to identify features that meet needs across all areas of life.

However, the features needed to address a goal in one area frequently conflict with those required in another.

A cushion height that provides optimal pressure relief might prevent someone from fitting under their dining table. Firmness ideal for transfers might compromise comfort during prolonged sitting. When products can't address all goals simultaneously, prioritization becomes necessary.

Assessment limitations can compound the problem: Pressure mapping occurs only in clinical settings (if at all), evaluations can only capture limited positions and activities rather than the real-world complexity and trial periods are often inadequate or nonexistent.

The consequences extend beyond discomfort. We've had to remake cushions because users needed more height to reach kitchen cabinets or less height in their thighs to fit under their dining room table. These aren't just edge cases. They're the everyday realities where clients have to prioritize their goals and make trade-offs.

When prescribed seating doesn't meet real needs, users improvise. They cut sections out of cushions, add donut pillows on top or glue their own foam together for extra firmness. These do-it-yourself workarounds create service issues, compromise pressure management and often make problems worse. But they reveal something important — users are desperately seeking adaptability that their equipment doesn't provide.

Understanding the Spectrum of Daily Needs

Different activities demand fundamentally different support. Eating requires lowering thigh height to fit under tables. Different shoe heights change pressure distribution. Some users need maximum firmness for side transfers, while others use entirely different techniques. The variables are endless, yet we've been providing single-configuration solutions.

Manual adjustments aren't the answer. They require a cognitive load users don't have bandwidth for, physical capabilities many lack and time that daily life doesn't allow. When adjustments require tools, caregiver assistance or complex procedures, they simply don't happen, even when they're clinically necessary.

Technology Advancements Making Adaptive Seating a Reality

The convergence of sensor technology, advanced materials and mobile apps is finally making truly adaptive, completely customized seating possible.

Sensor technology provides the foundation through real-time pressure-distribution tracking, which automatically maintains ideal settings and adjusts across a range of activities. Unlike one-time clinical pressure mapping, which most wheelchair users have never even experienced, continuous monitoring has the potential to catch problems before they become injuries.

Advanced materials make physical adaptation possible. Programmable air bladders adjust firmness and support zones on demand. Unlike static foam that simply reacts to body weight, smart materials respond to commands and adapt to physical and weight changes over time. This means seating systems that maintain clinical effectiveness throughout the day and across years of use.

Mobile applications put control in users' hands, which is critically important for people whose agency is too often removed from their care. One-touch transitions between configurations let users shift from desk work to transport to recreation without manual adjustments. Customizable presets remember optimal settings for frequently performed activities, while usage data shows what actually works in real-world conditions. In the near future, the same connectivity can enable clinicians, ATPs, and technicians to adjust settings without requiring users to travel for appointments.

Automation ties it together through learning algorithms that recognize patterns and adjust based on detected activities. System diagnostics continuously monitor performance, alerting clients to maintenance needs when failures occur.

Adaptive Seating in Practice

For Anne, adaptive technology changed everything. After finding a custom smart cushion, she gained consistent relief for the first time in 20 years. When hypersensitivity flares up, she uses the app to make small adjustments, usually once every one to two weeks. These real-time, user-controlled pressure changes allow her to stay in her chair all day with minimal discomfort, a dramatic improvement from her previous routine of frequent, hours-long reclines.

She can drive safely. She can participate in activities without planning around recline schedules. She has autonomy and flexibility that manual, caregiver-dependent cushions never provided. Now Anne can do what she loves — being outside whenever the temperature dips below 90 — with a seating solution that finally keeps up with her life.

New Opportunities for ATPs and Technicians

Adaptive seating technology represents more than better outcomes for users. It's a new value proposition for ATPs and technicians in an increasingly competitive market.

Instead of selecting the single "best compromise" solution, ATPs can configure multiple activity profiles that match users' actual lifestyles. They can set safe parameter ranges for different use cases and access real-world usage data to optimize configurations over time. This ongoing optimization relationship creates value far beyond traditional one-time evaluations: It reduces re-orders and increases client satisfaction tenfold.

The opportunity extends industrywide. Users accustomed to adaptive technology in phones, cars and smart homes now expect the same from mobility devices. Demonstrating value through better outcomes strengthens reimbursement cases. And equipment that prevents complications rather than treating them shifts the value proposition from cost to investment.

Technology That Matches Real Life

Static seating solutions haven't matched the dynamic lives of wheelchair users for decades. Fortunately, technology now exists to eliminate the false choice between clinical safety and functional participation.

For ATPs and technicians, this represents an opportunity to move the industry forward by developing new skills, offering new services, and evolving from equipment providers to technology partners. In turn, we can deliver better outcomes and empower users to live fully without compromise.

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Tim Balz, CEO and founder of Kalogon, is a former SpaceX engineer with a proven passion and a patent portfolio focused on improving sitting. Through empathy-driven design, he leads his team in developing products that help everyone live an active, seated life. Balz has been working with individuals with a variety of mobility disabilities for almost 15 years, focusing on providing technology access for independence. In addition to a nonprofit he started in high school, Balz created the first smart wheelchair in partnership with Intel, which was endorsed by Stephen Hawking and named the No. 1 IOT device of 2014. He is the co-inventor on an all-terrain wheelchair patent and has designed a wheelchair suspension system for the world's largest wheelchair company, Permobil.

CLINICAL PERSPECTIVE

Working with Wheelchair Users in Pain

CEU ARTICLE REVIEW

WRITTEN BY: Anna Sokol, RN, MN, BScN, BScKin, WOCC(C)

I am not comfortable ...

I am in pain ... I feel everything ...

I tried so many things, and nothing works ... Leave me alone ...

There is no cushion/back out there that helps ... I am still in pain

I have to cancel ... Can't do it today ... Can't even move ...

Wheelchair mobility vendors often remember the names of their most "challenging" clients years after assisting them. For these consumers, pain is such a critical factor that, when systematically assessed, measured and tracked, even a single perceptible increase can trigger a cascade of negative physiological responses — potentially leading to weeks of lost function and mobility.

"Sensitive" is a common term vendors and clinicians use to describe clients experiencing pain. "Emotional roller coaster" is another phrase used to convey the client's psychological state. These individuals may appear elated when their pain subsides yet can quickly shift into frustration or depression when comfort fades or when their wheelchair setup fails to meet expectations.

Such clients often require multiple equipment trials when selecting their wheelchair systems and other assistive devices. They may even consult several clinicians and vendors in pursuit of comfort. For them, comfort is not an added bonus of mobility — it is defined as a pain level low enough to allow a certain degree of independence. Their functional capacity may depend on sitting tolerance, which is sometimes measured in minutes rather than hours.

In this article, we will discuss what pain is, explore the latest developments in pain research and share practical tips you may find helpful when working with clients who experience pain.

What is Pain?

Pain is an unpleasant sensory and emotional experience associated with, or resembling, the state of actual or potential tissue damage. Typically, acute pain acts as a defense mechanism whose purpose is to identify an area requiring attention, prompting the person to take action to restore homeostasis or protect the affected body part from further injury.

Chronic pain, in contrast, is a long-term and distressing experience associated with chronic conditions or injuries involving the peripheral nerves or central nervous system. It can trigger a myriad of physiological, psychological and social consequences (Cao et al., 2024).

According to the latest research literature, pain can be categorized as **nociceptive, neuropathic** or **nociplastic**. Before exploring these categories in detail, let's first understand what these terms mean.

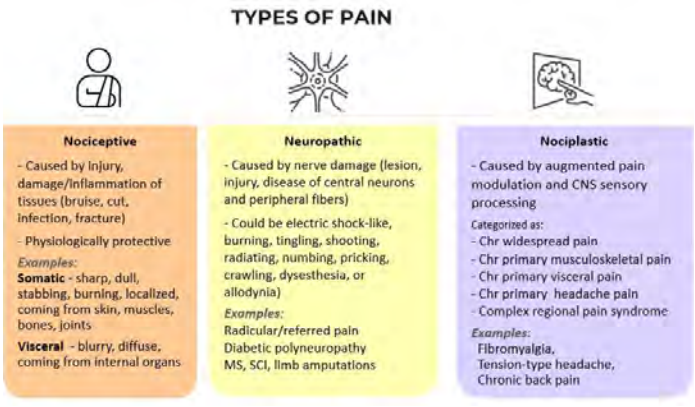
Nociceptive is derived from the Latin word *nocere*, meaning "to hurt" or "to harm." The Latin root *recept* comes from *receptus*, meaning "received." Thus, *nociceptive* refers to the ability to sense potentially harmful stimuli.

Neuropathic originates from the Greek words *neuron* ("nerve") and *pathos* ("suffering" or "disease"). Therefore, *neuropathic* pain literally refers to pain arising from nerve disease or injury.

The term **nociplastic** combines the Latin *nocere* ("to harm") and the Greek *plastikos* ("to mold" or "form"). It describes pain that results from altered pain processing rather than from tissue damage or nerve injury. *Plasticity* here refers to modulation, adaptation and change in how the nervous system processes sensory input.

Nociceptive pain results from injury, inflammation or damage to body tissues, such as bruises, cuts, infections, fractures, ligament tears or internal organ injury. It can be further classified as **somatic** or **visceral**.

- *Somatic nociceptive pain* is typically localized and may be described as strong, sharp, dull, stabbing or burning. It originates from the skin, soft tissues, muscles, bones or joints.
- *Visceral nociceptive pain* is often diffuse, poorly localized, or referred and arises from internal organs (viscera).



Types of pain.

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Neuropathic pain signals nerve damage resulting from injury, lesion or disease affecting the peripheral or central nervous system. Individuals may describe it as burning, tingling, shooting, radiating, numbing, pricking, crawling or otherwise unusual sensations. Some experience abnormal perceptions such as a feeling of wetness without moisture or a pulling sensation when nothing physically moves the skin. Phantom pain is a well-known example in which an individual feels pain in an absent limb, such as a toe, after a leg amputation. Neuropathic pain commonly occurs in individuals with neuropathies, herniated discs, spinal cord injuries, neurodegenerative disorders, extensive trauma with nerve severance, major surgeries or limb amputations.

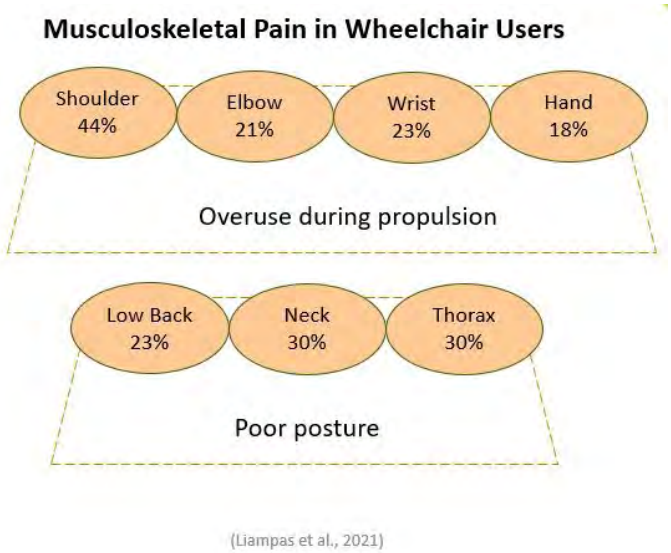
Nociplastic pain arises from dysregulated pain modulation within the central nervous system. In this case, the brain interprets complex sensory and psychological inputs as pain, even in the absence of tissue or nerve injury. Psychological state, level of alertness, cognitive interpretation, memories and environmental triggers all influence this process. Although some might dismiss nociplastic pain as "imagined," it is very real and often debilitating for clients with conditions such as fibromyalgia, post-traumatic stress disorder, migraines, chronic back pain and complex regional pain syndrome (Cao et al., 2024; Rajkumar et al., 2022).

Wheelchair Users in Pain

Whether they are new riders or decades-long wheelchair users, almost all of our clients experience pain. More often than not, when a clinician conducts a comprehensive assessment, all three types of pain are reported by the client. Pain is the most common complication in spinal cord injury, with burning, tingling or pins-and-needles–type neuropathic pain below the level of injury reported by 79% to 91% of patients. This pain is often described as intense and disruptive to daily life, sleep and mood (Mashola et al., 2025; Todd et al., 2024).

Musculoskeletal pain is also reported by the majority of wheelchair users, most commonly in the shoulders, elbows, wrists and hands due to overuse during wheelchair propulsion. Low- and mid-back and neck pain are almost always linked to poor posture (Liampas et al., 2021). In addition, spasms and spasticity contribute to moderate to severe pain in wheelchair users with diabetic and non-diabetic neuropathies, strokes, neurodegenerative disorders affecting upper and lower motor neurons, and traumatic brain injuries (Pergolizzi et al., 2025).

It is well established that individuals with disabilities — particularly wheelchair users — experience elevated levels of depression associated with chronic pain, restricted mobility, environmental barriers, societal stigma and perceived invisibility. Moreover, the persistent questioning of their functional capacity, often encountered on a daily basis, further exacerbates psychological distress (Saia et al., 2024). The sustained activation of the nervous system resulting from these stressors contributes to a heightened state of arousal, thereby perpetuating nociplastic pain mechanisms.



Causes of musculoskeletal pain in wheelchair users.

Evolution, Nerve Regeneration and Tricky Behavior of Nerve Cells

While almost all wheelchair users live with pain, some cope relatively well, whereas others struggle to an extreme degree. How is it that clients with similar diagnoses report such different levels of pain intensity? The answer lies in the latest research.

Active nerve regeneration has been associated with pain. Whether nerve damage results from a chronic condition or an acute injury, each affected nerve cell attempts to connect with nearby cells. During this process, the cell sends molecular "messages" that are detected by nociceptors, the nerve fibers responsible for transmitting pain signals. In generally healthy individuals, both dendrites and axons can regenerate following injury, although regeneration is more successful in peripheral nerves due to a more favorable environment.

In an attempt to reconnect with other neurons, injured nerves may form neuromas — thickened or nodular masses comprised of Schwann cells and disorganized connective

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tissue. Two types of neuromas have been described: spindle and terminal. Spindle neuromas appear as a web of collateral branches along the main nerve on MRI images. Pain occurs when the nerve is compressed or stretched, often due to surrounding scar tissue resulting from chronic friction, irritation or repetitive microtrauma. Terminal neuromas are characterized by bulbous swelling at the site of total nerve transection caused by injury, amputation, or surgical resection (Baldassarre et al., 2016).

Human evolution has favored the ability to sense pain, which serves a protective function. Pain encourages activity restriction, allowing the body to repair itself. However, heightened sensitivity to pain is now prevalent. Research indicates that humans have developed an increased propensity for chronic pain, linked to hypervigilance and anxiety, which are associated with persistent nociceptor hyperactivity. In practical terms, we now experience higher levels of pain in response to relatively mild triggers, largely because our nervous systems are continuously on alert (Walters et al., 2023).

Pain and inflammation are closely linked in peripheral nerve damage. Inflammatory mechanisms, intended to be protective and restorative, are activated around affected nerves. When a nerve is injured, local inflammation signals the brain that repair is needed. Historically, macrophages were thought to arrive from circulating blood; however, recent research demonstrates the continuous presence of macrophages in peripheral sensory ganglia. This indicates that pro-inflammatory cytokines such as TNF and IL-1β are activated locally. Whereas other tissues may take minutes or hours to relay pain signals, nerve cells can call for help immediately. In chronic degenerative conditions, nerve repair is often incomplete, leading to persistent inflammation and amplified pain signaling (Guimaraes et al., 2023).

Neurodegenerative autoimmune disorders are characterized by ongoing inflammation. Individuals with multiple sclerosis often experience diverse and widespread pain, including chronic headache, Lhermitte's sign (sudden, taser-like neck pain), trigeminal neuralgia, extremity pain, and temperature hypersensitivity (Uhthoff's phenomenon). This is due to sensitization in both the peripheral and central nervous systems. In healthy individuals, TNFβ receptors R1 (pro-inflammatory, promoting cell death) and R2 (pro-homeostatic, reparative) are activated in a regulated sequence. In multiple sclerosis, R1 receptor activity predominates, leading to continuous inflammation and neuronal damage (Maguire et al., 2021). Similar mechanisms occur in Parkinson's and Alzheimer's diseases, where neuroinflammation and progressive neuronal loss are associated with aberrant protein aggregation that disrupts normal homeostasis and regeneration (Ahmed & Gaber, 2025).

Central neuropathic pain in stroke survivors is caused by nociceptor hyperexcitability and impaired antinociceptive mechanisms. Maladaptive plasticity within spinal and brain circuits leads to nociplastic pain, which may respond to interventions targeting the mind's capacity to modulate pain perception (Rosner et al., 2023). It is also important to recognize that stroke survivors with reduced mobility often experience musculoskeletal nociceptive pain due to suboptimal positioning, spasticity, skin issues and musculoskeletal strains, as well as neuropathic pain resulting from immobilization, impaired blood flow and peripheral ischemia related to swelling.

In short, chronic pain in wheelchair users results from a combination of nerve injury, inflammation, heightened sensitivity and secondary effects of limited mobility. Importantly, exploring and addressing these underlying causes can alter how pain is perceived. Factors such as medical and pharmaceutical interventions, physiotherapy, disease progression, environmental conditions, timely access to care and appropriate assistive devices, and social engagement can either increase or decrease pain. This helps explain why some individuals cope better than others, even with similar diagnoses. Understanding these mechanisms can guide more effective pain management and ultimately improve quality of life.

Too Complicated? Let's Simplify.

When working with wheelchair users, it is important to explore the types of pain, their locations and possible triggers.

Visceral (internal organ) pain may be triggered by changes in position, such as moving from upright sitting to full tilt. It can also be related to internal medical issues, such as a kidney stone, and may worsen with movement in the wheelchair. Identifying the cause and making prompt referrals is critical, especially if the client has not yet been medically evaluated. Activities such as pulling a urinary catheter during a transfer can also provoke intense visceral pain if the client's sensory network is intact. Special attention is needed for clients with spinal cord injury who have lost sensation, as visceral triggers may still provoke autonomic dysreflexia even without perceived pain.

Somatic (musculoskeletal) pain may involve joints and muscles. Spasticity triggered by wheelchair recline, particularly if hip range of motion is limited, is one possible cause. Overuse injuries can occur if a manual wheelchair is too heavy or poorly configured. Somatic skin pain can result from pressure under bony prominences if cushions provide insufficient immersion or offloading. Friction-related injuries, such as lacerations or skin tears, may also occur due to coarse cover materials or altered microclimates, causing maceration.

Neuropathic pain requires careful attention to activity-related triggers. Even when the underlying pathology is known, it is important to ask which movements or positions aggravate symptoms. Selecting wheelchair and seating interventions to reduce these triggers can improve comfort and help clients understand what to avoid. For example, if weak pelvic muscles and prolonged sitting worsen pain, a positioning cushion that levels the pelvis and prevents posterior tilt may reduce discomfort and extend sitting tolerance. In autoimmune conditions causing neuropathic pain, timely referral for pharmacological treatment is essential.

Nociplastic pain involves the central nervous system and may occur in areas without direct pathology. Mirror neurons can create painful sensations in the healthy limb opposite the affected area. Psychological triggers, such as anxiety or painful memories associated with certain stimuli, should be identified in advance to plan effective workarounds. For instance, if sundown triggers painful memories, scheduling equipment trials earlier in the day may help. Similarly, avoiding clothing colors that elicit negative reactions can reduce distress. While this article does not review CNS-level interventions (such as CBT or EMDR for PTSD), discussing professional supportive services can indicate whether referral to a therapist or support group is appropriate.

Finally, clients should be reminded to take all prescribed medications before an assistive equipment trial. Spasmolytics, anti-inflammatory drugs, painkillers and anti-anxiety medications are particularly important, as missed doses may necessitate cancelling or shortening the appointment before an optimal prescription can be determined.

Client-Centered Practical Recommendations When Pain is a Main Concern

In the context of assistive technology provision, clinicians and vendors can take specific steps to reduce discomfort and better understand how to support clients experiencing pain.

1. **It is vital to include a comprehensive pain evaluation as part of a client assessment.**

Key aspects to assess include: location (where is the pain, and does it radiate?), quality (sharp, dull, etc.), intensity (ideally on a 0–10 scale), duration and timing (how long has the client been experiencing it; is it continuous or intermittent?), triggers (what initiates it?), alleviating and aggravating factors (what makes it better or worse?), associated symptoms, and the impact on daily activities. Although the numerical scale may seem to be more precise, many clients have difficulty assigning a number to their pain intensity and respond better to the facial pain scale. Combination scales that use both numbers 0-10 and the associated facial representations have been validated as effective subjective assessment tools.

For clients using wheelchairs, it is also important to ask whether any specific pain occurs only while seated in the wheelchair. Pain or pressure that is wheelchair-specific may indicate the need to adjust the seating system or the wheelchair's overall setup.

2. **Wheelchair-related issues causing discomfort must be explored and addressed.**

If the issue is **pressure**, interventions should focus on pressure redistribution, offloading, cushioning, and protecting the skin from hard points on the wheelchair frame. If the client experiences **overuse pain in the upper extremities** from propelling a manual wheelchair, the system may need adjustments, such as reducing weight, checking the center of gravity, and optimizing the position of axles, wheel and caster diameters, materials and arm-to-rim distances.

Rigid edge of the power wheelchair base exposed due to insufficient cushion depth, resulting in circulatory problems and ischemic skin changes in the lower limbs.

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Cushion too deep prompted use of a pillow and loss of proper PSIS/ lumbar support.

Excessive dorsiflexion caused by the wrong angle of the footplates, resulting in obstruction of lymph flow.

Complaints of **fatigue or postural changes** related to prolonged sitting may indicate the need to evaluate pelvic rotation (posterior or anterior tilt), lumbar support or anterior trunk positioning accessories. System angles should also be checked — seat-to-back angles, footplate and hanger positions must match the client's needs. Proper alignment is also crucial to prevent setups that could trigger spasms.

Swelling in certain areas should prompt an assessment for overextended or overflexed joints to prevent or address potential blockages in arteriovenous or lymphatic flow. It is also important to check whether any postural support devices or accessories are pressing or pinching the skin excessively.

When wheelchair or seating interventions are implemented, **follow-up clinical evaluation** is essential. Comparing the client's previous setup with the new configuration using pain assessment scales helps determine the intervention's success. Follow-up visits are particularly valuable after clients have used the new or adjusted seating system for several weeks.

3. The overall objective of a wheelchair setup — postural support or accommodation — should be determined with pain reduction goals in mind.

For some clients, postural support may be the primary goal. This could include an active individual aiming to reduce fatigue, optimize pelvic alignment and decrease the frequency and intensity of spasms, enabling them to complete a full 9-to-5 workday. For others, achieving optimal functional posture may be less important than easing pain and increasing overall pain tolerance. In such cases, accommodation using comfortable interface materials, automated functions and a seating system carefully matched to the client's body, including angles, rotation, depth and the type and position of hardware, can be highly effective. This approach may reduce the need for pain medication and help the client remain more alert throughout the day. Ultimately, the goals of a seating intervention should always be client-centered.

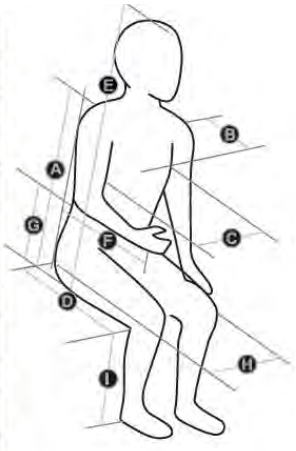
4. Interventions should be designed to match the identified clinical goals.

When multiple goals are identified, especially if they conflict, it is helpful to prioritize them according to the client's preferences and the degree to which they affect their quality of life. In cases where the client is dependent on caregivers, the family may also be considered part of the care unit; however, the client's safety, comfort and well-being must always remain the primary objectives. Clear communication with both the client and caregivers about the rationale for prioritization can improve adherence to interventions, support decision-making and help manage expectations. By aligning interventions with the client's most important goals, clinicians can maximize functional outcomes while minimizing discomfort and risk.

5. Check your measurements!

Accurate linear measurements of various body parts are essential for determining the proper widths, lengths, heights and depths of both manual and power wheelchair

Client Height*	
Client Weight (lbs)*	
A. Seat to Shoulder	
B. Trunk Depth	
C. Chest Width	
D. Knee to Back	
E. Seat to Top of Head	
F. Back to Joystick	
G. Seat to Elbow	
H. Hip Width	
I. Knee to Heel*	
Cushion Thickness*	



Measurements required for ordering power wheelchair system (Motion Concepts, Invacare).

frames and seating. While this article is not intended to provide exhaustive guidance on all required measurements, some key examples are highlighted here.

The distance from the popliteal crease behind the knee to the back of the hips helps determine the appropriate cushion depth. The distance from the knee to the heel, taking into account the person's ability to foot-propel, indicates the seat-to-floor height of the wheelchair frame, including the thickness of the seat cushion when loaded. The thigh-to-trunk angle informs the degree of recline needed in the seating system. Measurement of trunk height, distance to any kyphosis, and the level of back support required guides the selection of the most suitable backrest model, as well as its size and vertical position on the wheelchair canes.

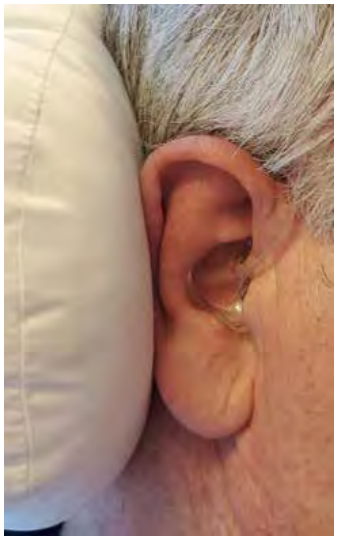
Incorrect measurements can have serious consequences. They may inadvertently translate to obstruction of respiratory function, impeded arterio-venous or lymphatic circulation, excessive pressure points, pinched peripheral nerves, restricted chest movements required for breathing or compressed internal organs. Careful measurement ensures safety, comfort and optimal functioning for the client.

6. Select appropriate seating product design and interface materials.

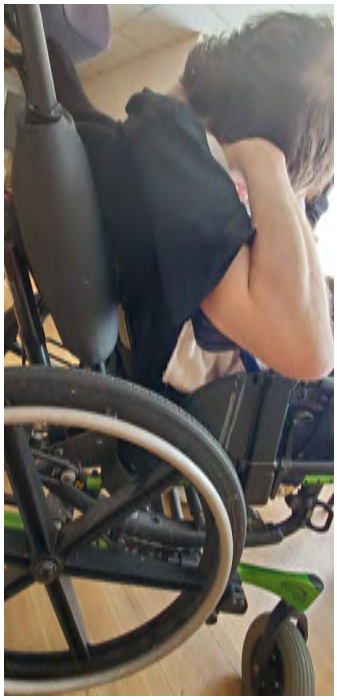
The choice of interface material — whether soft and immersive or supportive and resilient — should be guided by the client's clinical status and goals. Consider whether inserts such as polymers, fluid, viscoelastic foam or air could be beneficial. While the clinician is responsible for recommending the most suitable product, vendors are often the most knowledgeable about the range of products currently available on the market.

For clients with a wound or a history of pressure injuries, it is particularly important to recommend products from the skin protection category. Fluid, polymer or air-based cushions can help reduce shear forces within soft tissues, as these materials themselves have high shear properties. Cushions designed primarily for positioning provide superior anterior-posterior and lateral stability and may be recommended for clients with fall-prevention and postural-support needs.

There are numerous off-the-shelf options for skin protection and positioning cushions that are customizable and can serve as highly adaptable alternatives to fully custom seating. For example, recent developments in headrest pads and hardware allow adjustments to headrest angles, alignment of hardware under asymmetric loading, lateral wing positions for uneven surface contact and even options to mount the headrest hardware further from the midline of the back



Conformable headrest pad interface for client with hearing aid (Motion Concepts, Invacare).



Padded wheelchair cane for client at high risk of injury.

support. Vendors should also remind clients and clinicians that covers for back supports, cushions and headrest pads can often be customized not only for colors and patterns, but also to enhance functionality — using more stretchable materials, surfaces that are easier to clean or wipe, or designs that allow for the addition of accessories.

7. Final Check Before Leaving the Client.

Before leaving the client, perform a thorough check for pressure points and the proper setup of wheelchair locks and anti-tippers. Are there any hard components of the wheelchair frame contacting the client? How is the back support positioned in relation to the wheelchair canes? If the canes touch the client, additional padding may be needed. Is the chair stable or do components need adjustment to ensure the client's center of gravity is properly supported? Is the height of the frame canes appropriate? In some cases, when a backrest is mounted, the canes may need to be trimmed to prevent pinching of soft tissues. Ensuring locks function correctly and anti-tippers are properly set up is essential for fall prevention.

8. Take the client's mind off the pain.

Every bit of pain reduction matters, whether targeting

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nociceptive, neuropathic or nociplastic pain. Mobilization itself is a powerful pain modulator: When clients regain mobility, more activities become accessible, and more activities provide natural distraction from pain. Self-efficacy and enjoyment can further reduce pain. Distractions such as music, jokes, fun clothing, TV (avoid the news!), favorite toys, pets or snacks can be valuable tools during appointments that require time for equipment trials and adjustments.

Pain and function are closely intertwined: Less pain can promote greater function, and engaging in functional activities can, in turn, reduce pain. Enabling mobility, easing transfers and improving access are among the most empowering and rewarding outcomes we can offer our clients. Participation in enjoyable activities may be the most effective temporary pain reliever.

Nonetheless, pain is real, and assessing the effectiveness of seating interventions through pain outcomes provides valuable insight into where further help may be needed. Beyond fulfilling your professional responsibilities, conversations with clients and their families can also highlight the need for recommendations or referrals to other specialists. Interdisciplinary collaboration is a mighty tool for solving complex problems.

It is helpful to educate clients about the brain's remarkable capacity to amplify or diminish pain perception. When programs such as CBT, meditation, yoga or interventions for PTSD or depression have not yet been explored, they may be recommended or referrals made. For clients, the journey is not a sprint but a marathon: Every small effort matters, and even minor reductions in pain can open new possibilities and improve quality of life.

Summary

Pain is more than just a physical sensation — it is a complex experience shaped by the body, the brain and emotions. Whether stemming from tissue injury, nerve damage or changes in pain processing, understanding the different types of pain allows us to find better ways to manage it and support those who live with it every day.

While pain reduction is not the only objective of seating assessments and wheelchair seating selection, it can serve as an important indicator of intervention success. The majority of wheelchair users live with chronic pain of multiple origins, and understanding the types and causes of pain helps guide clinicians in providing more effective support during seating assessments and equipment trials.

Incorporating pain assessments into both initial and follow-up visits ensures that critical issues affecting the client are not overlooked. This article does not suggest replacing traditional seating assessments with a pain-centered approach. Rather, it emphasizes that, at times, pain reduction goals may take precedence over functional goals — or that addressing pain first can be an effective starting point. With less pain, clients may gain longer sitting tolerance, improved stamina and the capacity to pursue positional, functional or athletic goals more successfully.

Finally, conducting a thorough "pain check" at the conclusion of a client visit, especially after providing a new wheelchair or adjusted seating system, can identify potential issues before they lead to negative outcomes. Prioritizing pain reduction is not just about comfort; it directly contributes to client safety, well-being and the overall success of wheelchair interventions.

By approaching seating and mobility interventions with empathy, attention and responsiveness to pain, clinicians and vendors can empower clients to regain independence, participate more fully in daily life and feel confident that their unique needs are recognized and addressed. Every thoughtful adjustment, careful observation and small win in reducing pain can serve as a tipping point — sparking hope, bringing a smile or giving clients the confidence to pursue what matters most to them.

Different interface materials for wheelchair backs (Motion Concepts, Invacare).

Client with above-the knee amputation may complain of pain in the missing knee and in the healthy leg; pain in wrists, shoulders, and back is aggravated by use of wheelchair.

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CLINICAL EDITORIAL

Unlocking Mobility:
The Case for Accessible Rental Vehicles

WRITTEN BY: Bill Noelting

In an era where convenience and customization define transportation, one segment remains chronically underserved: individuals with mobility challenges seeking short-term access to wheelchair-accessible or adapted vehicles. Accessible rental vehicles — those modified to accommodate wheelchairs, scooters or other assistive devices — are not just a niche offering. They are a civil rights imperative, a business opportunity and a litmus test for how inclusive our mobility infrastructure truly is.

The Promise of Accessible Rentals

For many people with disabilities, owning a modified vehicle is cost-prohibitive. Rental options offer a flexible alternative for travel, medical appointments, family visits or vacations. These vehicles often include features like lowered floors, ramps or lifts, hand controls, and securement systems. When available, they restore autonomy and reduce reliance on paratransit or caregiver transport.

The market is growing. According to recent forecasts, the global accessible vehicle rental service market is projected to expand from $1.2 billion in 2024 to $2.5 billion by 2033,1 driven by rising demand for inclusive travel solutions and supportive legislation. Yet this growth is uneven, with availability concentrated in urban centers and major airports, leaving rural and suburban users stranded.

Barriers to Access

Despite the promise, several barriers persist:

- **Limited inventory:** Most mainstream rental companies offer few accessible vehicles, often requiring days of advance notice.
- **High costs:** Daily rates for accessible vans can be double or triple those of standard vehicles, with insurance and mileage caps adding to the burden.
- **Opaque booking systems:** Online platforms rarely allow users to filter for accessibility features, forcing them to call or email for confirmation.
- **Lack of awareness:** Many travelers with disabilities don't know accessible rentals exist or assume they're unavailable.

These gaps reflect a broader failure to integrate accessibility into the core business model of transportation services. Accessibility should not be a special request — it should be a standard offering.

Innovation and Inclusion

Some companies are leading the way. Startups and niche providers like MobilityWorks, Wheelchair Getaways and BraunAbility Rentals offer fleets of accessible vans with nationwide delivery options. Ride-hailing platforms like Uber and Lyft have experimented with WAV (wheelchair-accessible vehicle) programs, though coverage remains spotty.

Technology can help. Mobile apps with real-time inventory, adaptive vehicle specs and transparent pricing could revolutionize the booking experience. Partnerships with health care providers, tourism boards and disability advocacy groups could expand reach and trust.

Policy also plays a role. Tax incentives for fleet operators, grants for vehicle conversion and ADA enforcement in the rental sector could accelerate adoption. The Americans with Disabilities Act mandates equal access, but enforcement in the rental space is inconsistent.

A Call to Action

Accessible rental vehicles are not just about transportation — they're about participation. They enable people to attend weddings, job interviews, graduations and funerals. They allow spontaneous travel, not just scheduled paratransit. They affirm that mobility is a right, not a privilege.

To realize this vision, we need:

- **Fleet diversification:** Rental companies must invest in accessible inventory across regions.
- **Transparent platforms:** Booking systems should clearly display accessibility features and availability.
- **Affordability measures:** Subsidies, insurance reform and competitive pricing can reduce cost barriers.
- **Public-private partnerships:** Collaboration between government, industry and advocacy groups can drive systemic change.

Navigating the System: Tips for Securing Accessible Rental Vehicles

For disabled travelers, securing an accessible rental vehicle can feel like solving a puzzle

with missing pieces. But with preparation and persistence, it's possible to unlock mobility on your terms. Here are some practical tips to help take control of your journey.

Plan Ahead — But Stay Flexible

- **Book early:** Accessible vehicles are often in limited supply. Reserve at least seven to 10 days in advance, especially around holidays or peak travel seasons.
- **Call directly:** Don't rely solely on online booking platforms. Speak with a rental agent to confirm vehicle specs, availability and pickup logistics.
- **Ask about delivery:** Some providers will deliver the vehicle to your home, hotel or airport —especially helpful if local branches lack inventory.

Know What You Need

- **Specify features:** Clarify whether you need a side-entry ramp, rear-entry lift, hand controls, transfer seats or scooter compatibility.
- **Bring measurements:** Know the dimensions of your wheelchair or mobility device to ensure proper fit and securement.
- **Request a demo:** If possible, ask for a walkthrough of the vehicle's features before driving off.

Understand the Costs

- **Compare providers:** Rates vary widely. Check both national chains and local mobility specialists.
- **Ask about insurance:** Verify coverage for adapted equipment and accessible modifications.
- **Look for discounts:** Some companies offer reduced rates for veterans, seniors or ADA-qualified renters.

Use Tech to Your Advantage

- **Download apps:** Some rental companies offer mobile apps with real-time inventory and booking options.
- **Enable alerts:** Sign up for notifications when accessible vehicles become available in your area.
- **Use GPS and accessibility tools:** Apps like Wheelmap or AccessNow can help you plan routes and destinations compatible with your mobility needs.

Leverage Community Support

- **Tap advocacy networks:** Organizations like United Spinal, Easterseals and local disability councils often maintain lists of trusted rental providers.
- **Share feedback:** If you encounter barriers or exceptional service, let others know by leaving reviews or posting on social media.
- **Know your rights:** Under the ADA, rental companies must provide reasonable accommodations. If you face discrimination, document the incident and report it.

Overview

Accessible rental vehicles are a critical yet underdeveloped link in the mobility chain — offering independence, dignity and inclusion to millions, but still facing systemic gaps in availability, affordability and awareness. Careful planning can help you take control of your journey.

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CLINICALLY SPEAKING

Jessica Pedersen's Career Focus on Seating and Mobility

WRITTEN BY: Rosa Walston Latimer

For more than four decades, occupational therapist and educator Jessica Pedersen, OTD, MBA, ATP/SMS has helped shape the landscape of seating and mobility—clinically, academically, and through national leadership. From her early days at the Rehabilitation Institute of Chicago to her current role leading clinical education at Sunrise Medical, Pedersen's journey reflects a career dedicated to improving mobility and function for people of all ages.

Jessica Presperin Pedersen, OTD, MBA, ATP/SMS, Director Clinical Education North America with Sunrise Medical.

Jessica Pedersen with her Sunrise Medical team: Christy Natale, Karla Sonderland, Lindsey Veety.

(l to r) Illinois State Representative Hauter; Lobbyist Ted Malkowski; Illinois State Representative La Ha; Jessica Pedersen, Sunrise Medical; Julie Piriano and Wayne Grau, NCART.

What initially drew you to this career and how did you get your start?

I was naturally drawn to science, math, and hands-on activities, especially crafts. Occupational therapy offered a perfect blend. After graduating with a BS in Occupational Therapy from the University of Illinois in 1979, I began my career at the Rehabilitation Institute of Chicago, an incredible environment with 78 occupational therapists, 96 physical therapists, and countless opportunities to learn from colleagues and patients.

I started on the spinal cord injury team, then moved to pediatrics. A pivotal moment came when I worked with a child post-drowning. After facilitating her relaxation for an hour, she curled up in her stroller, igniting my interest in seating. A colleague introduced me to Adrienne Bergen, who taught how to build seating inserts for children. I contacted Adrienne long before the internet existed, and she became my first seating mentor. She faxed me instructions and photos for creating tri-wall seating inserts, and I soon began fabricating plywood and foam systems, despite my initial lack of skill. I later collaborated with Ken Kozole, a clinical rehabilitation engineer and occupational therapist at RIC/Northwestern, who designed innovative seating systems for both adults and children. At that time, options were limited to chrome E&J wheelchairs, a few cushions like ROHO, and pediatric positioning chairs that doubled as car seats.

What initiatives have you been involved in that have helped shape the industry?

Joining RESNA, co-developing Chicago's first seating center, and meeting leaders like Elaine Trefler, Doug Hobson, and Joan Bergman helped me gain confidence in presenting and sharing my work. Over the years, I chaired committees, served on the board, and earned Fellowship status in the 1990s. I've presented at RESNA or ISS every year since 1985 and co-authored the second edition of Positioning for Function in 1991.

In the late 1980s and early 1990s, we sought to distinguish "dealers" from suppliers who

Jessica Pedersen with her sons, Graham (l) and Dylan.

Go Baby Go Project with the Illinois Spina Bifida Association and St. Patrick High School STEM program.

collaborated with therapists on evaluations and complex equipment. We established the title Rehabilitation Technology Supplier and founded NRRTS, with Adrienne Bergen as president, Simon Margolis as vice president, and me as the first secretary. I also helped develop the original ATP and ATS credentials, which were later combined into the ATP certification.

My career has encompassed rehab centers, pediatric clinics, schools, home health, nursing homes, and facilities for those with cognitive and developmental disabilities—always focusing on mobility and seating. I've collaborated with manufacturers, taught clinicians how to shape custom seating, and co-founded CREATE, an education company focused on assistive technology.

Was there a turning point that helped you realize this was truly your calling?

Seating and mobility provide immediate feedback—something either works or it doesn't. Deliveries taught me just as much as evaluations, allowing me to see firsthand when my original ideas needed adjustment. Problem-solving with suppliers kept me motivated.

As technology advanced, I knew there would always be something new to learn. I've traveled the world and found my "tribe"—people passionate about helping others through mobility. Sharing experiences and learning from others continues to energize me.

Tell us about your current work.

Three years ago, I joined Sunrise Medical as the Director of Clinical Education. I saw an opportunity to create education that could be easily shared across all wheelchair and seating practices. Since then, I've built a team of five clinicians serving North America and collaborating closely with colleagues in Europe and Australia.

What is your favorite part of your work?

I love traveling throughout North America and occasionally Europe to meet professionals interested in wheelchairs and seating. It's rewarding to work with riders and families, help match them with the right equipment, and later hear their stories about the impact on their lives.

I also enjoy participating in the development of new products. It's exciting to witness an idea grow from concept to launch. The creativity and ingenuity in this field never fail to amaze me.

What keeps you engaged after more than 45 years in this industry?

The constant changes and evolution of the field. There are many product options now, and I'm inspired by younger professionals entering the industry. Passing the baton is important to me. Though funding and policy continue to be challenges, they unite us in ensuring people have access to life-changing equipment.

What do you enjoy outside of work?

Crafts have always been a passion—one reason I entered OT in the first place. I recently moved to the center of Chicago, near Millennium Park and The Bean. I enjoy exploring the city, walking along the lake, admiring architecture, visiting museums, and sampling food

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and cultural offerings. I also love walking and hiking while traveling. Recently, I joined a neighborhood choir and am preparing for our first concert.

Are there volunteer or charitable organizations that are meaningful to you?

I'm passionate about on-time mobility for children. Before GoBabyGo (https://gobabygo.eu/pages/about) existed, I fabricated adapted cars, and once the program emerged, I became heavily involved in group build events.

Currently, I partner with the Illinois Spina Bifida Association and New Trier High School, where over 120 students build adapted cars and joystick-operated devices for children with disabilities. More than 40 devices are made each year, with families traveling from across Illinois and northwest Indiana for the two-day delivery event. I also work with the team to expand this program into other schools and colleges.

I support Tim Caruso, PT, and the Kids Equipment Network (TKEN), which recycles, refurbishes, and redistributes equipment for children. Therapists and suppliers volunteer monthly to ensure proper fit and condition. When I retire, I plan to dedicate more time to this exceptional organization.

What advice would you offer to someone just beginning in your field?

I want young professionals to know this career is wonderfully rewarding and a lifelong learning experience. Attend conferences and get involved in policy and advocacy. Stay active throughout the process—from evaluation to delivery—because that's how you truly learn seating and confirm whether your recommendations work.

Always get consent to take photos and share experiences. Everyone is so beautifully different, and there are many perspectives to benefit from. Learning together is one of the most enjoyable aspects of this profession.

Jessica Pedersen finds meaning in both the challenges and joys of this industry. Her dedication is rooted in the people whose lives intersect with hers—clinicians finding their footing, families navigating new possibilities, and individuals discovering comfort and independence through mobility. After decades in the profession, Jessica carries the same curiosity that first drew her to it and a generosity that invites others to learn beside her. It is clear that Jessica's influence lives in the connections she builds and the encouragement she offers to those who will carry the work forward.

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INDUSTRY LEADER

Advocating for Access:
The Steady Hand of Jay Witter

WRITTEN BY: Rosa Walston Latimer

The world of health care policy is a complex, ever-changing arena. Regulations shift, reimbursement models fluctuate and access to medically necessary equipment often depends on a web of decision-makers, insurers and federal legislative processes. For individuals who rely on mobility devices, respiratory support or other home equipment, these policy decisions determine their level of care, independence, safety and quality of life.

As the senior vice president of public policy for the American Association for Homecare (AAHomecare), Jay Witter serves as a liaison at the intersection of legislation and patient access. With three decades of experience, Witter brings a steady and capable understanding of both the broader scope of policy development and the everyday realities of affected individuals. He sees advocacy as long-term relationship-building rooted in trust.

"Policymakers have immense responsibilities," he said. "They cannot specialize in every area of health care. Along with the AAHomecare team, I help translate data from our AAHomecare members into real-world implications. We keep goals focused and constructive to ensure that federal policymakers understand the real impact of regulatory decisions on those who use and supply home medical equipment, including Complex Rehab Technology."

With personal stakes and slow timelines often at play, Witter's calm persistence, shaped by his years of experience, helps maintain relationships that are key to moving policy forward.

AAHomecare (https://aahomecare.org/) represents a wide range of home medical equipment providers, supporting those who supply oxygen, ventilators, seating systems, power wheelchairs and CRT components. The mission is clear: improve access to quality home-based care equipment and services. Achieving this requires coordinated efforts at the federal and state levels, consistent communication with Medicare and Medicaid, engagement with private payers and collaboration with other health care organizations.

Given the constantly shifting environment, Witter grounds his priorities in real-time needs. He emphasizes that these priorities emerge not from abstract goals but from direct challenges faced by providers, clinicians and state-level partners, including delayed authorizations, reimbursement cuts, inconsistent coverage criteria or regulatory ambiguities affecting access. By translating these experiences into policy recommendations, Witter ensures his work is always tied to practical needs.

Health care lobbyist Jay Witter readies for an energizing ride on his dirt bike.

That translation involves more than just information. Witter stresses that meaningful progress relies on mutual trust among all parties. “Legislators and agency officials must view AAHomecare and its members as reliable partners — consistently returning to discussions, addressing difficult questions and sharing data and real stories without dramatization,” he said. “With genuine trust in place, conversations progress from identifying barriers to exploring workable solutions.”

Witter’s approach is intentional and steady. He has learned that sincere, authentic engagement fosters stronger allies in Congress. Today, more policymakers than ever understand the importance of home-based care. This progress has come not only through sudden leaps but also through steady education, dialogue and determination, creating true champions for the industry in Washington, D.C. One area where this advocacy is crucial is Medicare Advantage. Enrollment continues to rise, altering the coverage landscape for those who rely on home medical equipment and CRT. Yet the program’s growth has led to irregular rules for authorizations, reimbursements and repair approvals.

INDUSTRY LEADER

AAHomecare is committed to addressing these challenges and bringing about accountability to ensure systems work effectively in practice. Witter and the AAHomecare teamwork with legislators to promote oversight, transparency and clearer standards. These initiatives aim to prevent delays in equipment access, ensuring individuals receive clinically appropriate support without bureaucratic hurdles that compromise health and independence.

(l to r) Jay Witter with Pennsylvania Rep. Dan Meuser and AAHomecare CEO and President Tom Ryan.

Jay Witer, senior vice president of public policy for the American Association for Homecare.

Within this context, the CRT sector holds a distinct position. CRT requires individualized evaluation, clinician involvement and specialized configuration. It cannot be treated like standard equipment, as delays in accessing CRT can severely impact mobility and health stability. Witter emphasizes this difference in policy discussions, highlighting the importance of matching individuals to the correct equipment and the critical need for service and repair support. Ensuring lawmakers understand these distinctions has been a long-term priority. Sustained advocacy has built awareness around the clinical nuances of CRT, leading to more informed conversations about appropriate support and reimbursement structures that reflect its specialized nature.

While AAHomecare's public policy team engages in structured relationship-building and strategic messaging, Witter believes advocacy should not be confined to organizations alone. Personal stories are powerful in shaping how access issues are perceived. When providers convey how reimbursement levels impact their service teams, or when wheelchair users illustrate the consequences of repair delays, these realities resonate more profoundly than mere data.

"The right to share these stories with Congress is foundational," Witter said. "It is essential for the home medical and CRT communities to voice their experiences. My role is to amplify these voices by helping shape messages, connecting advocates with stakeholders and ensuring their narratives reach decision-makers. While politics may change, our message stays the same."

Considering the current landscape, Witter is optimistic. "Increasingly, home-based care is recognized as a core component of the health care system, not just a cost," he said. Policymakers are realizing that supporting access to home medical equipment leads to better outcomes, greater independence and reduced long-term costs for patients and the health care system.

Witter's work is grounded in the belief that health care policy must reflect the lived experiences of those it affects. "My responsibilities are pretty much 24/7, but I enjoy the work tremendously," he said. "The needs of individuals relying on home-based equipment are ongoing, and we must be consistent with our communication with policymakers."

While Witter is deeply committed to his work, he and his wife — also a lobbyist — make time to unwind with friends and, whenever possible, take invigorating rides on their motorcycles.

Personal stories shape the conversations that Witter facilitates daily. He knows that the voice of a wheelchair user discussing a delayed repair or a provider explaining reimbursement strains can clarify issues for policymakers in ways no chart or briefing memo ever could. These stories bring real-life needs into the rooms where decisions are made. And thanks to dedicated leaders like Witter, the industry can be assured that an effective liaison with decision-makers remains firm and resolute.

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DIRECTIONS CANADA

Improving Air Travel Accessibility

WRITTEN BY: Tilak Dutta and Linda Norton, B.Sc.OT, M.Sc.CH, Ph.D., OT Reg. (Ont)

Air travel can provide efficient access to many experiences that offer a wide range of benefits including broadening the opportunities to receive health care, education, professional development and business opportunities as well as leisure. However, many people with disabilities have difficulty realizing these benefits because of a lack of accessibility in the air travel industry.

The KITE Research Institute hosted the Accessible Air Travel Forum, on September 11, 2025, to highlight the existing accessibility problems and to shine a spotlight on people and organizations working on promising solutions. Attendees included representatives of airlines (Air Canada, Westjet, Jazz, Perimeter) and airports (the Greater Toronto Airport Authority, the Ottawa International Airport Authority), wheelchair vendors (Motion), regulators (Canadian Transport Agency, the International Air Transport Association), researchers (Université Laval, University of Toronto and the KITE Research Institute), standards organizations (Accessibility Standards Canada), disability organizations (Rick Hansen, AccessNow), federal government representatives (Canada's Chief Accessibility Officer, Stephanie Cadieaux) as well as people with lived experience.

Keynote talks were given by Cadieaux and Maayan Ziv, with both underscoring many of the negative impacts of accessibility barriers during air travel as well as the surprising lack of empathy from staff that is encountered too often. Additionally, the Forum featured 20 short (10 min) presentations from a wide range of stakeholders.

Key themes that emerged from the day included the need for better training to raise awareness of the accessibility barriers that exist, better communication, improving accessibility of airports/aircraft of the future and to consider the global nature of the problem, including the challenges faced by passengers with disabilities in remote areas. Presenters also highlighted the need for more time for passengers with disabilities during boarding an aircraft and that social media can be a powerful tool to highlight problems when problems are not addressed appropriately.

A number of successful approaches for improving accessibility were shared, including the hidden disabilities sunflower lanyard program used by Air Canada, the Ready Set Fly program run by the Greater Toronto Airport Authority and the Check and Give Protection To red tag program used by WestJet that Julie Sawchuk described, sharing how much it reduce her fear and anxiety about her wheelchair when she travels by air. Finally, Christopher Wood from Air4All highlighted a solution that could address many accessibility barriers if incorporated in the next generation of aircraft. He described the design of a prototype airline seat created by Delta Flight Products that folds out of the way to create space, allowing wheelchair users to stay in their chairs during air travel. Videos from the event can be viewed at engineeringhealth.ca/airtravel.

While a broad range of accessibility barriers were discussed, a key focus of the Accessible Air Travel Forum was to address the risk of wheelchairs being damaged or lost during air travel. A number of presenters highlighted the range of negative impacts a lost or damaged device can have for its owner, including the loss of independence and risk of pressure injuries. Asha Buliung, a youth advocate, shared that she chooses to travel with a manual chair instead of her power wheelchair, even though it means she loses her independence, because of the fear of her power chair being damaged. Linda Norton and Stacey Burnett from Motion underscored the fact that wheelchairs are highly customized, expensive devices that take a long time to replace and leave the user at risk of pressure injuries while they remain without a replacement. Tilak Dutta also gave an overview of his four-year project to identify and address the causes of damage mobility devices in wheelchairs and shared four preliminary recommendations for how wheelchairs should be loaded/unloaded and secured inside aircraft cargo spaces to reduce the risk of damage. These recommendations will be used to inform a new federal air travel accessibility standard created by Accessibility Standards Canada.

The success of the Forum highlighted the need to create a working group for those interested in improving air travel accessibility and a longer three-day conference to bring together more relevant

organizations. The KITE Research Institute is planning to run the 2027 International Conference on Air Travel Accessibility during National AccessAbility Week (May 25-27, 2027). You can sign up for updates on this conference at engineeringhealth.ca/airtravel. In particular, two additional groups that we hope will attend the conference are wheelchair manufacturers and companies that specialize in securing wheelchairs for transportation (e.g., Q'straint). Please email Tilak Dutta (Tilak.Dutta@uhn.ca) if you belong to these or other groups and would be willing to provide your expertise to help prevent damage to wheelchairs during air travel.

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Tilak Dutta is a senior scientist at KITE Research Institute, the research arm of Toronto Rehabilitation Institute, University Health Network, and holds an appointment as an associate professor at the University of Toronto at the Institute of Biomedical Engineering and the Rehabilitation Sciences Institute. The goal of Dutta's team is to give individuals with disabilities and their caregivers the tools they need to realize their full potential. His team's ongoing projects include preventing falls in icy winter weather through developing and evaluating winter footwear with advanced slip resistance, improving pedestrian safety at intersections and on sidewalks using computer vision, preventing back pain for paid and unpaid caregivers using wearable devices like PostureCoach and removing stubborn barriers to accessibility.

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Linda Norton, B.Sc.OT, MSc. CH, Ph.D., OT Reg (ONT) is an Occupational Therapist who is passionate about the provision of appropriate seating and mobility equipment and the prevention of chronic wounds. Her diverse experience in various settings including hospital, community, and industry; and in various roles including clinician, educator, manager, and researcher, gives Linda a unique perspective. Wound prevention and management are also Linda's passions. She has completed the International Interprofessional Wound Care Course (IIWCC), a Master's in Community Health focusing on pressure injury prevention, and a Ph.D. in Occupational Science focusing on chronic wounds.

REHAB CASE STUDY

A Letter to an Airline:
Case Study Highlights When Policy Undermines Access

WRITTEN BY: Jason Kelln, ATP, CRTS®

In this issue of DIRECTIONS, we spotlight a firsthand account that underscores the unintended consequences of airline policy on disability access. The following letter, addressed to a major carrier (name redacted), was written by iNRRTS president Jason Kelln, ATP, CRTS®, in response to a newly imposed weight restriction on power wheelchairs, a policy that threatens the mobility, dignity and travel rights of individuals who rely on Complex Rehabilitation Technology. Presented here as a case study, the letter reflects how power wheelchair users are confronting systemic barriers and invites broader dialogue on how transportation infrastructure must evolve to meet the needs of all passengers.

Dear Airline Company,

Accessing and engaging with one's environment is a fundamental aspect of independence and quality of life. For individuals with complex disabilities, Complex Rehab Technology can be transformative in several ways:

- **Mobility and Independence:** CRT wheelchairs and mobility devices enable users to move freely within their homes, schools, workplaces and communities, reducing reliance on caregivers and increasing participation.
- **Environmental Interaction:** Through ECUs and adaptive controls, individuals can independently manage daily tasks such as opening doors, adjusting thermostats or making phone calls, fostering autonomy and confidence.
- **Health and Well-being:** Proper seating and positioning minimize the risk of pressure, support respiratory and digestive health, and enhance comfort, further enabling active engagement in daily life.
- **Social Integration:** By facilitating access to transportation, public spaces and communication devices, CRT helps users participate in social, educational and vocational activities, reducing isolation and promoting inclusion.

Your recent decision to impose a 300 lb. (approximately 136 kg) weight limit for power wheelchairs transported on your aircraft raises significant concerns. Air travel is already challenging for individuals who rely on power wheelchairs, especially those with advanced features such as powered seating systems, which often result in wheelchairs exceeding this weight threshold.

Power wheelchairs are engineered to provide robust mobility solutions for people with severe impairments. Features like motorized seating adjustments, tilt-in-space, recline functions and complex pressure management systems, while essential for comfort and medical safety, contribute substantially to the overall weight of these devices. As a result, power wheelchairs are significantly heavier than manual wheelchairs.

Due to their size and weight, most power wheelchairs cannot be conveniently stored or transported in the cargo hold of commercial aircraft. This limitation forces individuals to choose between travelling and preserving their health and independence.

The inability to travel with a personal power wheelchair can lead to serious medical consequences. Many individuals require powered seating systems to perform regular pressure relief and positioning adjustments throughout the day. Without these features, there is an increased risk of developing pressure injuries, such as pressure ulcers, that can result in severe pain, infection and long-term health complications.

Apart from medical concerns, being compelled to leave behind essential equipment can create feelings of exclusion, anxiety and frustration. The lack of equitable access to air travel restricts opportunities for employment,

leisure and participation in family and community events, further contributing to the isolation of those with mobility impairments.

The considerable weight and specialized requirements of power wheelchairs currently present significant obstacles to air travel for many people with disabilities. Overcoming these challenges will require advocacy, technological innovation and policy reform to ensure all individuals can travel safely with the equipment they need to maintain their health and independence. We urge you to take the lead in this area and pursue solutions that enable the safe transport of power wheelchairs.

Enforcing this weight restriction has a profound effect on those who depend on Complex Rehab equipment. Thanks to advances in mobility technology, these individuals are no longer restricted to their homes or local communities; they can travel and participate in broader society. Their engagement enriches the communities they visit and offers valuable perspectives.

Restricting access to certain aircraft types will inevitably limit their mobility, freedom and overall quality of life.

We respectfully request that your power wheelchair policy be reviewed and revised. There are numerous articles and alternative solutions available for the safe transport of power wheelchairs, enabling individuals with mobility needs to travel and participate fully in society.

Currently, yours is the only airline in North America enforcing such a restriction. While industry leadership is often positive, in this case, it may lead to negative perceptions of your airline and its partners.

Thank you for your attention to this important matter. We hope your airline will reconsider and adjust its policy to better serve all travelers who depend on Complex Rehab Technology.

Sincerely,
Jason Kelln, ATP, CRTS®
President, iNRRTS

Complex Rehab Technology Reference:

Complex Rehab Technology refers to specialized medical equipment and devices designed to meet the unique and often highly individualized needs of people living with significant disabilities or mobility impairments. Unlike standard mobility aids such as basic wheelchairs or walkers, CRT encompasses custom-configured solutions, including power wheelchairs, manual wheelchairs with advanced features, adaptive seating systems, environmental controls and other assistive technologies tailored specifically to an individual's medical, functional and environmental requirements.

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Jason Kelln, ATP, CRTS®, is president of iNRRTS and became the first Canadian iNRRTS Registrant in 2018. He is the recipient of multiple recognitions, including iNRRTS' Simon Margolis Fellow and Distinguished Service awards and the Queen Elizabeth Platinum Jubilee (Sask) Medal Recipient. Kelln has been an owner of PrairieHeart Mobility since 2022.

REHAB CASE STUDY

Meredith's Story:
A Standing Frame, Caring Team and Family's Love WHAT?

WRITTEN BY: Stefanie Laurence, B.Sc.OT, OT Reg.(Ont), with Julie Keon, RSSW

Sponsored by Motion

Meredith.

Motion's goal is always to provide an exceptional client experience. It is on a mission to deliver solutions that make a difference in people's lives while fostering relationships that last. This mission is evident from the many positive client testimonials received and the client stories shared. This is one of those stories shared by Julie Keon.

Our incredible 22-year-old daughter, Meredith, was diagnosed with severe cerebral palsy just days after her birth in 2003. An MRI determined she had suffered a profound brain injury due to a hypoxic event during labour. As a result, her care has been astounding, and we have relied on countless professionals to support us along the way.

Due to her disabilities, Meredith has required lots of therapies and equipment. One of these items is a standing frame, which she started using as soon as she was able to bear weight. Standers of yesteryear were more like mini torture chambers, and so she despised them for good reason.

In 2020, Meredith had a rare but remarkable growth spurt, and her stander at that time was no longer comfortable or workable. After trying the Leckey Horizon Stander in July 2021, we knew it was the one that could make a world of difference for Meredith. This dream was short-lived as the COVID-19 pandemic dragged on. By the time the pandemic started to wind down, the vendor who had promised to help us had essentially ghosted us. In the meantime, Meredith transitioned into the adult world, and the funding we had secured for her new stander was no longer available.

Meredith in her first stander (2005).

And that's where this story takes a turn. After a desperate call to Motion, Harrison was assigned to the task and quickly arrived to assess the situation.

Harrison works on Meredith's new stander.

Naturally, our expectations were low after so many disappointments and dead ends. [LAST NAME] arrived that day with enthusiasm, genuine concern, kindness, positivity and tremendous insight, skill and experience. After spending a good amount of time measuring, considering, troubleshooting, brainstorming and listening to everything about Meredith and her unique needs, he returned with a plan in mind and the reassurance that he would follow through. We were cautiously hopeful.

True to his words, he kept us informed with each step, including when and why delays occurred. Finally, in May 2024, we received the Cadillac of standing frames. I cannot say enough about LAST NAME and how he genuinely cares about his clients. His creativity and determination are life-changing for those who are in need. What an asset he is to Motion!

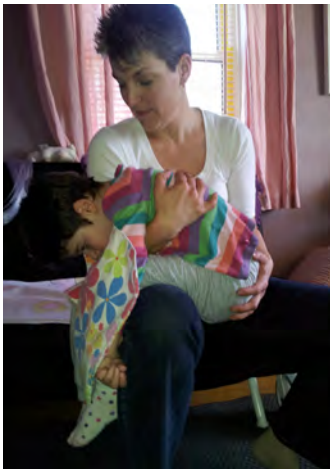
It is important to note that although the time spent with each client and family is brief, it can have a profound and lasting impact on those served. We could not provide the comfort and quality of life to Meredith without the expertise and kindness of those who do this valuable work and for that we are deeply and forever grateful.

A Note from Stefanie Laurence

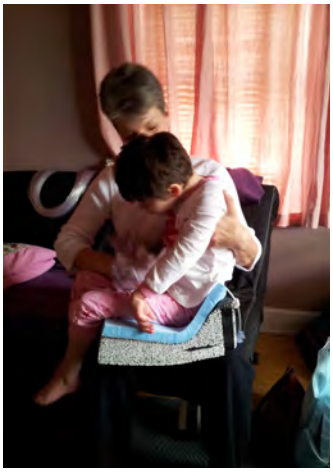
I met Meredith in 2013 at the request of the therapist and sales consultant to look at neck collars to keep her head up. She was unable to maintain a seated position. She was held most of the time and screamed if seated on a cushion (that is the first picture with her striped top). The issue was so much more than just a neck collar.

I went back with the seating components and was able to mock up a possible seating solution (those are the pictures with the pink pants). At the time, her mom laughed and called me the "Meredith Whisperer" because their little lady tried to fight being seated, but when she realized I wasn't giving in, had offloaded her butt and was giving her firm supportive seating, she settled right down. I left the potential solution with her team to follow through. Mom was so happy, she gave me a jar of the dad's homemade crab apple jelly.

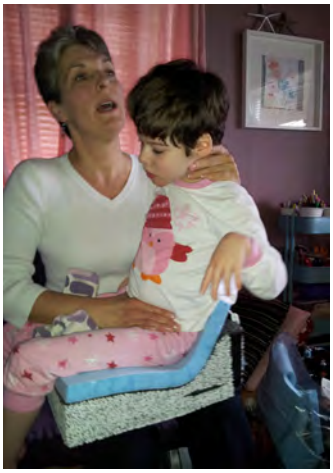
I was so touched by the love and dedication of this couple for their daughter, and the honesty the mom had about their frustrations. From time to time, I read her blog posts to see where the family is at. How fitting that their home was on Truelove Street. People talk about how much we touch people's lives by providing equipment solutions. I can honestly say there are clients who touch our lives and stay with us forever.



Getting to know Meredith - her body and preferred seated position.



Introducing Meredith to a different seating surface based on the assessment.



Providing Meredith with postural support and working with her reactions.

Translating seating into a wheelchair.

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Stefanie Laurence, B.Sc.OT, OT Reg. (Ont), wants to live in a world where every wheelchair is perfectly fitted, comfortable, functional and used correctly. As an occupational therapist and clinical educator for Motion, she's been on her soapbox for over 35 years at colleges, universities, group homes, hospitals and conferences across North America, and even as far as Europe. When she's not teaching about seating and mobility equipment, you can find her with her arms wrapped around a client, helping to create a custom seating system, or elbows deep with a team to sort out a challenge.

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Julie Keon, RSSW, is the author of "What I Would Tell You ~ One Mother's Adventure in Medical Fragility." She is dedicated to supporting families like her own and the professionals who care for them through her writing, workshops, presentations and keynote addresses. Keon resides in Ottawa Valley, Canada, with her husband and their extraordinary daughter, Meredith.

RESNA

RESNA Launches Low-Cost Webinar Bundles for ATP Recertification CEUs

WRITTEN BY: Andrea Van Hook, RESNA Executive Director

Introducing Webinar Bundles

Seeking a low-cost webinar solution for those few additional IACET CEUs needed for the Assistive Technology Professional recertification? Look no further! For a limited time, the Rehabilitative Engineering and Assistive Technology Society of North America is offering a webinar bundle: three webinars, each worth 0.1 IACET CEU, for $60. That's $20 per CEU!

Don't miss this opportunity to get up to speed on best practices in your chosen field or introduce yourself to other types of assistive technology. Hurry, the bundles will not last long!

- **Wheelchair and Seating** bundle includes the following webinars:
  - Wheelchair Skills Assessment and Training: An Evidence-Based Approach (0.1 CEU)
  - Dynamic Seating: Providing Movement for Clinical Benefit (0.1 CEU)
  - Unusual Barriers to Effective Pressure Relief for Clients with Neuro-progressive Disorders (0.1 CEU)
- **Augmentative and Alternative Communications** bundle:
  - Assistive Technology and Sensory Integration/ Processing (0.1 CEU)
  - Identifying and Overcoming Barriers to Gaining Access to AAC (0.1 CEU)
  - RERC on AAC: Progress on Research, Development, and Training Activities (0.1 CEU)
- The **Hot Topics** bundle features three expert-led webinars exploring hot trends and future directions of assistive technology.
  - Future Travel Opportunities for Wheelchair Users in Automated Vehicles and Aircraft (0.1 CEU)
  - AT in Healthy Aging (0.1 CEU)
  - Current Trends and Innovations in Adaptive Video Gaming (0.1 CEU)
- The **Latest Trio** focuses on practical, evidence-based insights.
  - 3D Printing Sports and Recreation Equipment (0.1 CEU)
  - What are Robotics Wheelchairs? Trends and Design Considerations to Enhance Assistive Mobility Technology (0.1 CEU)
  - Maintaining Independence with Assistive Technology for Boys with Duchenne Muscular Dystrophy (0.1 CEU)

Coming in 2026

RESNA is proud to join iNRRTS and other partners at two Abilities International professional conferences in 2026, one on the West Coast and one on the East Coast.

- Los Angeles Metro: March 26 – 27, 2026
- New York Metro: April 30 – May 1, 2026

RESNA will offer a day-and-a-half of continuing education sessions and participate in plenary sessions at each conference. The professional conference starts the day before the Abilities Expo opens to the public. With a single low-priced ticket, attendees can choose from three education streams: Adapted Living, Business Optimization and Improving Patient Outcomes.

The early-bird discount for the Los Angeles conference ends December 31! Go to (abilitiesconference.com) for more information.

Holiday Closure

The RESNA office will close for the holidays starting Dec. 24, 2025, and will reopen on Friday, Jan. 2, 2026.

Certification staff will continue to process applications and renewals during this time, but email and phone customer service will not be available. If you are waiting on your renewal, please check your record in the "Find an ATP" directory on the RESNA homepage (https://www.resna.org/). Your record will be updated once your renewal is processed.

Certificates will be sent out via email by Jan. 16. If you do not see your certificate in your inbox, please check your spam folder before contacting the office.

Happy Holidays!

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Andrea Van Hook is executive director of RESNA. She has more than 20 years of experience in nonprofit association management and lives and works in Washington, D.C.

CRT UPDATE

iNRRTS Article December 2025

WRITTEN BY: Wayne Grau

CRT Industry Focuses on the Consumer

As we work to bring about positive changes for the Complex Rehab Technology industry, the focus should always be on what is best for the CRT consumer. The issues we face as an industry stem from the access challenges our members face in caring for their consumers.

Access can be denied in different ways:

- Outright denial of coverage by a specific payer for a specific product or product category.
- Non-defined coverage criteria that lead to misinterpretations of the medical requirements, resulting in excessive denials for new equipment.
- Inadequate reimbursement that does not cover the cost of the equipment.

All of these are items that our members and the customers we serve are facing today. The National Coalition for Assistive & Rehab Technology continues to fight battles for access so that consumers can receive what they need to lead their best lives.

Partnering to Effect Change

The CRT industry accounts for a small share of the durable medical equipment spend and a minuscule share of overall health care spending in the United States each year. This presents a challenge as we work to educate our legislators, as they are unaware of the issues affecting our consumers.

We are facing several challenges in 2026, and we must partner with the consumers to ensure they maintain their access to the proper complex rehab equipment and services. We have done this in the past as we all worked together to gain coverage for power seat elevation. By working together and educating legislators, regulators and payers, we created an incredible benefit for consumers. This is the blueprint for the future, and one we will be called upon to utilize in 2026. A partnership with consumers is the best way for us to protect access for everyone.

Preparation for the Unknown

As the holidays approach, we are beginning to look ahead to 2026 and plan our focus for next year. We know one thing: There is a lot of uncertainty ahead, but we are not sitting idly by. Industry participants have been meeting to identify threats to access and funding posed by the proposed Medicaid cuts.

We are developing tools and resources for all CRT industry members to utilize to push back on changes to Medicaid rules. NCART will update our public-facing website to make these resources available to everyone. We will be making many announcements over the next few months to highlight resources, issues and educational pieces that will assist you and your consumers in advocating for and protecting CRT. We are all in this together, and we need to work together!

Thank You

I want to take this opportunity to thank all the rehab technicians who go out each day to address consumers' service needs. I have worked on CRT chairs in my past, and until you have turned a wrench or two, you can't really appreciate the complicated process that it takes to fix CRT wheelchairs. Our rehab technicians not only need technical skills but also need to be good people with a great attitude to provide excellent customer service. We want to thank them for all they do and make sure they get the recognition they deserve. THANK YOU.

Advocacy Quotes

"Change will not come if we wait for some other person or some other time. We are the ones we've been waiting for."
— Barack Obama

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Wayne Grau is the executive director of NCART. His career in the Complex Rehab Technology industry spans more than 30 years and includes working in rehab industry affairs and later exclusively with complex rehab companies. Grau graduated from Baylor University with an MBA in health care. He's excited to be working exclusively with complex rehab manufacturers, providers and the individuals we serve who use CRT equipment.

CLINICIAN TASK FORCE

Accessible Adventures Await:
CTF Spotlights on Recreation and CRT

WRITTEN BY: Amber Ward, MS, OTR/L, BCPR, ATP/SMS, FAOTA; Tabatha James ATP/SMS, OTR; and Leslie Jackson, OTD, OTR/L, ATP, CEASIII, LSVT BIG Certified

"The world is your playground — play with a sense of destiny." — Edward Boyen

This quote embodies the spirit of adventure and encourages us to pursue activities that fuel the mind, body and soul. Creating community among others and improving health and quality of life are among the many benefits when we participate in meaningful leisure activities. This heartfelt article highlights unique recreational and travel activities using specialized equipment and encourages Complex Rehab Technology stakeholders to get involved.

One fun way to start is with the Adaptive Surf Project. This amazing project is an inclusive surfing and community access program started in Myrtle Beach, South Carolina, and now reaches individuals as far as Costa Rica and Puerto Rico. The program began with a group of surfers taking three friends with spinal cord injuries out to surf. The program has developed over the last 12 years to serve 80 surfers at six major events per year. The program now has custom surfboards made by a skilled shaper in Florida to accommodate a variety of surfers in prone, sitting, kneeling and supported-stand positions. The program is run by volunteers in the community, both young and old. Volunteers may coordinate registration, organize food, take photographs, assist with surfing or provide in-water assistance.

An Adaptive Surf Project volunteer guides a boy through the water. (Photo courtesy of Jennifer Lewis for Adaptive Surf Project)

The group is also passionate about inclusive access to beaches for all individuals. Co-founding Director Luke Sharp states, "If you can't access the beach, you can't surf either way."

The group is now using a $200,000 grant to lay beach mats and provide beach wheelchairs across coastal North and South Carolina, and has also laid mats in Puerto Rico.

In addition to the Adaptive Surf Project, the group also hosts adaptive bike rides. They have a variety of adapted bikes and provide support to individuals and families for biking on planned bike rides, with 10 organized bike rides per year. Children and adults with varying abilities may participate in the bike rides.

Trish Toole shared her experiences traveling to Sydney, Australia, with her family. She notes traveling to and around another continent with a medically complex person was an adventure. From Trish and her son, Alex: "Oh, the places I have taken my wheels!" As a family, they found a number of accessible destinations that made inclusion effortless. Trish notes that the first photo is from the boardwalk at Curly Beach and has titled it "Travelin' Light."

A boardwalk provides access to Australia's Curly Beach. (Photo courtesy of Trish Toole)

Alex soaks in the view of Australia's Curly Beach. (Photo courtesy of Trish Toole)

Alex, Trish and their dog enjoy the Australian coast. (Photo courtesy of Trish Toole)

In 2018, the Toole family relocated from Seattle, Washington, to Sydney, Australia, with two of their sons, one dog, a lot of gear and a great sense of adventure. According to Trish:

"We found friendly people and beautiful beaches. Traveling with a large, heavy electric wheelchair introduced us to all the wheelchair-friendly opportunities in and around Sydney, including the Opera House, harbor ferries, buses, trains and shoreline walking trails. We also found many old-school cafes, one step up from the street, and wev continue to cheer on our Aussie brothers and sisters on wheels in their fight for universal access. I didn't include the ugly pictures from mashed toes that got too hot in shoes, or our four-day stay in the intensive care unit with pneumonia, but even then, we sought out and found the help we needed with no more drama and trauma than at home. We traveled heavy, with 10 medical carry-ons, oxygen (yes, on the flight),

two wheelchairs (manual and power), a Raz shower commode chair and eight checked bags — but we found help where we needed it in the airports and in the sky from Alaska, Qantas and British Air. There were times when we didn't know whether we would go forward, only to be met with "these are all medical bags, it's not a problem."

Trish notes her overwhelming takeaway is a deep gratitude for the kindness of strangers who became friends. When they were stuck, their need became a point of connection and friendship, as others helped them on their journey.

You see, when it comes to life and living, leisure isn't just a "nice to have;" it's a necessity. In these moments, we are allowed (encouraged even!) to regulate and reset our nervous systems, soak up the sun, access rich sensory experiences, try something new or take the road less traveled. Experiences beyond our routine are opportunities to learn, flex our neuroplasticity pathways and experience the joys of life while connecting with others in memorable ways.

Leisure offers restoration, connection and the chance to slow down and spend meaningful time with our communities, loved ones and friends. Access to leisure is a fundamental human need — essential for people of all abilities — and it helps us build networks that extend far beyond our working roles. When we invest in shared experiences, we create space for friendships to form in ways where the terms "client, customer, patient or provider" naturally fall away.

It should come as no surprise, then, that the research shows these experiences are genuinely good for us. The physiological, psychosocial and communal benefits recognized in participants of adaptive sports research can be generalized to anyone involved in pleasurable activities, from athletes and participants to their care teams, even, and maybe especially, when taking in a concert at the Sydney Opera House.

An orchestra performs inside the beautiful Sydney Opera House. (Photo courtesy of Trish Toole)

Traveling with life-sustaining equipment facilitates and bolsters independence, increases institutional and structural awareness, and in so doing, invites some risk. Much can be said for improvements made and needed for accessible travel; it's also important to acknowledge the differing perspectives of individuals accessing leisure and travel and the unknowns that come with "firsts" for individuals who require mobility equipment.

For individuals with lifelong equipment needs, the opportunity to travel means being able to set off on solo adventures, developing a sense of self, exploring accessible beaches and building a more robust lexicon of problem-solving tools and techniques, and more. It also means confronting environmental and self-imposed barriers, perceived limitations, advocating for accessibility and building confidence not only in wheelchair skills but also in systems knowledge and policy.

Individuals with acquired disabilities may face a steeper learning curve when returning to beloved activities, re-entering public spaces or discovering previously unnoticed barriers. Communities and members from both groups come together to support and learn from the life-changing, clinically significant events that occur during leisure and travel experiences.

Both populations become skilled planners, as air travel can be challenging and wheelchair damage is a real concern (though improving). It takes extra energy to find accessible ramps and plan for various scenarios. Some may be coping with grief while building a new identity, mastering new wheelchair skills, undergoing physical reconditioning and permitting themselves to set new goals without constant comparison to their previous selves. In all cases, community support and immersion are critical to well-being. Research literature and personal experiences indicate that the integration of travel and leisure unequivocally facilitates joy as a demonstrable, heart-led, clinically proven outcome.

Research Findings

Engagement in adaptive sports showed a positive impact on the mental quality of life among adults with physical disabilities.
Isidoro-Cabañas E et al., 2023

Participation in adaptive sports programs leads to improvements in emotional well-being, social integration, personal empowerment, cognitive functions, and adaptive coping strategies.
Bulut S et al, 2024

Adaptive sports programs significantly enhance emotional resilience and empathy development, which in turn positively influence social inclusion and cognitive flexibility.
Shao J, Cui Z, Bao Y, 2025

As an avid travel blogger, Cory Lee, a Guinness World Record holder who has traveled to over 100 countries using a wheelchair, reflects on the

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CLINICIAN TASK FORCE | CONTINUED FROM PAGE 43

reality of accessible travel: "It's scary, anxiety-inducing, frustrating, discouraging and infuriating at times. But it's also rewarding, life-changing and confidence-boosting."

Lee's advice for new travelers? Arrive at airports early and call airlines ahead to set expectations, because preparation alleviates anxiety and builds the confidence needed for each subsequent adventure.

Ginny Paleg comes to us with a story about her friend, Bower. She shares about how the narrative surrounding cerebral palsy is often one of challenge and limitation, but the story of Jenn Lyman and her son, Bower, shatters these preconceptions with a joyful, high-octane celebration of life and boundless participation. As a young adult navigating the world with complex, quadriplegic CP (GMFCS Level IV), Bower's life, guided by his mother's therapeutic recreation expertise and fierce love, is a testament to the transformative power of adaptive sports, and radical inclusion. Their journey from their New Orleans home to the peaks of the Rockies and the waves of Costa Rica is an inspirational blueprint for families facing similar diagnoses, proving that a severe physical disability need not be a barrier to incredible, meaningful and exhilarating recreational activities.

Bower hits the slopes in a mono-ski. (Photo courtesy of Ginny Paleg)

Lyman's tireless work extends globally through her role as content manager for Cerebral Palsy Resource (https://cpresource.org/) and her advocacy with the Cerebral Palsy Foundation (CPF), where she champions research and education. Her life's work — both public and private — is a powerful statement: Disability should never preclude fun, fitness, friendship or the pursuit of adventure. Lyman hosts the podcast "Cerebral Palsy Health," a resource from the CPF that serves as a platform for conversations with leading experts about a wide range of topics related to cerebral palsy that affect health, fitness, function and participation.

One of the most thrilling activities Bower has conquered is skiing. The sheer speed, the vastness of the mountain, and the precision required seem utterly incompatible with the motor limitations of his cerebral palsy. Yet, Bower has been skiing in the Rockies, experiencing the exhilaration of the alpine sport. This incredible feat is made possible through the world of adaptive skiing, a specialized field within therapeutic recreation. For someone with Bower's mobility level, this typically involves a sit-ski or mono-ski. The sit-ski is specialized equipment consisting of a molded fiberglass or composite bucket seat mounted onto a single ski or bi-ski (two separate skis). The seated position provides the necessary trunk support that Bower cannot generate independently.

For Bower, adaptive skiing is not just a physical activity; it is a profound sensory experience. The rush of cold air, the blinding white of the snow, the feeling of speed and the majestic mountain views all contribute to a rich, stimulating and challenging form of self-expression. It is a powerful rebuttal to the notion that the highest level of physical recreation is reserved only for the able-bodied.

From feeling the rush of ocean water over surfboards, the surge of adrenaline from speeding down snow-covered slopes or exploring accessible boardwalks and beaches, everyone deserves opportunities to participate in recreation. Living with disabilities should not prohibit individuals from accessing leisure opportunities, experiencing joy, creating community and fueling their soul.

By highlighting adaptive sports and travel experiences shared by CTF members, we encourage CRT stakeholders to reflect on how our industry can integrate CRT to expand travel, leisure and adaptive sports for our clients and their families.

The world is indeed our playground. May we pursue it with the expectation of endless possibilities. It's a dance with the ocean, in that sweet spot between control and surrender that everyone deserves the chance to experience, and l iving with a disability should never disqualify us.

Bower's smile and laughs are contagious. (Photo courtesy of Ginny Paleg)

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Amber Ward has been an occupational therapist for more than 31 years, most recently in an outpatient clinic for individuals with progressive neuromuscular diseases and in a wheelchair seating clinic. She is an adjunct professor in the Occupational Therapy Assistant and master's Occupational Therapy programs at Cabarrus College of Health Sciences, in addition to working full time in the clinic. She received the RESNA (Rehabilitative Engineering and Assistive Technology Society of North America) Assistive Technology Professional certification in 2004 and the Seating Mobility Specialist certification in 2014. She is the author of numerous articles and book chapters, as well as speaking and presenting locally, regionally, nationally and internationally. Ward is also a friend of iNRRTS.

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Tabatha James, ATP/SMS, OTR is an occupational therapist with over 10 years of healthcare experience and five years specializing in Complex Rehabilitation Technology. Her expertise includes urban and rural healthcare delivery, Medicaid policy and populations, and seating and mobility services. She recently completed MIT's Applied Data Science Program and is actively exploring the intersection of ethical AI, assistive technology, healthcare, and the Internet of Things. She collaborates with RESNA and the CTF on initiatives advancing innovation and equity in CRT and is passionate about improving access to quality rehabilitation services for urban and rural communities.

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Leslie Jackson, OTD, OTR/L, ATP, CEASIII, LSVT BIG Certified, has served as an occupational therapist for over 25 years in various settings, including outpatient, acute care, home health, acute rehab and a doctoral-level academic program. She currently leads the outpatient Seating and Mobility Clinic for Marion Health and serves as an occupational therapist for the Department of Veterans Affairs. Jackson earned the Assistive Technology Professional certification from RESNA in 2008 and is certified in ergonomics and LSVT BIG, a treatment protocol for individuals living with Parkinson's disease. She volunteers as an executive board member for Services for the Visually and Hearing Impaired, a nonprofit organization providing assistive technology and education to its clients. Jackson is honored to contribute through the Clinician Task Force's advocacy and educational initiatives.

Renewed iNRRTS Registrants

The following individuals renewed their iNRRTS Registration between October 18 through November 30, 2025.

PLEASE NOTE **IF YOU RENEWED AFTER NOVEMBER 30, 2025**, YOUR NAME WILL APPEAR IN A FUTURE ISSUE OF DIRECTIONS.
IF YOU RENEWED PRIOR TO OCTOBER 18, 2025, YOUR NAME IS IN A PREVIOUS ISSUE OF DIRECTIONS.

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

Andrii Gumeniuk, ATP/SMS, CRTS®
Angela Naranjo, ATP, CRTS®
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Anton Chapman-Smith, RRTS®
Avery Smith, ATP, CRTS®
Brad Unruh, ATP, CRTS®
Brian Byler, ATP, CRTS®
Chad Amen, ATP, CRTS®
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David C. Vaughan, ATP, CRTS®
Ian Kingscote, ATP, CRTS®
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Congratulations to the following individuals who have completed Level 1 of the CRT Supplier Certificate Program.

These individuals can state they are a iNRRTS Certified CRT Supplier, Level 1.
NAMES LISTED ARE FROM OCTOBER 18, 2025, THROUGH NOVEMBER 30, 2025.

Nadege Visseyrias

Former iNRRTS Registrants

The iNRRTS board determined RRTS® and CRTS® should know who has maintained his/her registration in iNRRTS, and who has not.
NAMES INCLUDED ARE FROM OCTOBER 18, 2025, THROUGH NOVEMBER 30, 2025. FOR AN UP-TO-DATE VERIFICATION ON REGISTRANTS, VISIT WWW.NRRTS.ORG, UPDATED DAILY.

Dennis Paul Yurt, ATP
Lexington, KY

Pablo Tancredi
Lane Cove, New South Wales Australia

Douglas Hess
Savannah, GA

Katrina Yeoman
Lindsay, Ontario

Aaron McCord, ATP
Oklahoma City, OK

New iNRRTS Registrants

CONGRATULATIONS TO THE NEWEST INRRTS REGISTRANTS. NAMES INCLUDED ARE FROM OCTOBER 18, 2025, THROUGH NOVEMBER 30, 2025.

Cas Donell, ATP, CRTS®
Core Mobility
Rogers, AR

Gregory Campbell, ATP, RRTS®
Phoenix Rehab & Mobility
Chattanooga, TN

John "Caelen" Campbell, RRTS®
Independent Living Specialists
Virginia , Queensland

Michael Yates, ATP, RRTS®
Access Medical, Inc.
Burlingame, CA

Cortney Leonard, RRTS®
Bay View Homecare, Inc
Baltimore, MD

Jennifer Morrison, RRTS®
Motion
Markham, Ontario

Mark "Abe" Clark, ATP, CRTS®
ATF Medical
Newnan, GA

Paul C. Bale, ATP, RRTS®
ATF Medical
Newnan, GA

David Thompson, RRTS®
Advantage Home Health Solutions
Calgary, Alberta

New CRTS®

CONGRATULATIONS TO INRRTS REGISTRANTS RECENTLY AWARDED THE CRTS® DESIGNATION. A CRTS® RECEIVES A LAPEL PIN SIGNIFYING CRTS® OR CERTIFIED REHABILITATION TECHNOLOGY SUPPLIER® STATUS AND GUIDELINES ABOUT THE CORRECT USE OF THE DESIGNATION. THE NAMES LISTED ARE FROM OCTOBER 18, 2025, THROUGH NOVEMBER 30, 2025.

Cas Donell, ATP, CRTS®
Core Mobility
Rogers, AR

Mary McDonald, ATP, CRTS®
National Seating & Mobility, Inc.
San Diego, CA

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

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