

A Young Man on the Go

And the comprehensive team that helped him

Ryan Martin, ATP, of United Seating & Mobility (now called Numotion) and Andy Wirick met a few years ago at the Muscular Dystrophy Clinic at Nationwide Children's Hospital in Columbus, OH. The young man with Duchenne's muscular dystrophy was experiencing significant trunk weakness and scoliosis, typical of the condition. Due to the extent of the positioning issues this presented, Ryan referred Andy to the Ohio State University Clinic for a full assessment. "We wanted the opportunity to have a comprehensive clinic approach for Andrew," says Ryan. "We've had the clinic team involved every step of the way, starting with the evaluation all the way through the trials, delivery and implementation."



Ryan Martin, ATP

At the time, the primary goal was increased postural support, so Ryan outfitted him with a manual tilt in space chair with a custom Aspen Ride Design backrest. Last August, Andy came back to begin the process to replace his power wheelchair. It took approximately six months from start to finish to formulate the chair, including equipment trials and molding the backrest. Finally, just a few weeks ago in March, Andy received his new chair.

Before Photos



Andy had been using a donated Invacare wheelchair, which he received when he was in grade school over a decade earlier. His posture had declined to the point where he was leaning so far forward, he couldn't control the joystick mechanism and had trouble stopping. "We wanted him to be able to sit upright; he has digestive problems, and we knew that would help," says his mother, Christine Wirick. "He's now 20 and out of school, so he needs his independence and to feel better about maneuvering himself."

Andy was also tiring easily when using his old chair. This meant that family members had to help him, which was difficult logistically. “The joystick was at the front of the chair, so you would have to stand next to him to help him control it,” explains Christine. “This made it really difficult to go through doorways and maneuver in tight spaces.”

Proper positioning was the key. “Andy is completely non-ambulatory and has severe orthopedic issues,” says Ryan. “He’s pretty flexible, but he collapses, and he gets tired during the course of the day.”

Carmen DiGiovine, PhD, ATP/SMS, RET and Laura Fisher, PT, DPT at The Ohio State University Wexler Medical Center collaborated with Ryan to develop a custom seating system for Andy. “Laura was wonderful,” says Christine. “She made sure that Andy was always comfortable, and would try any idea we suggested.”

“The biggest thing about Andy is that he was collapsed so far forward with his trunk, he had no postural stability and no arm movement except a little bit in his fingers,” says Laura Fisher. “We quickly realized he didn’t need a backrest; he needed a front rest.”

Laura experimented with correcting Andy’s posture using foam blocks and gate belts for anterior support while trialing the equipment, but nothing gave him the stability he needed to be able to drive himself. The team decided that once again the Aspen Ride Design custom back with the abdominal binder was the best solution.

“The clinic team completed the mold for the customized backrest, and also recommended an abdominal panel to help with his posture,” said Ryan. “For the rest, we’re using standard controls and platforms, adjusted to fit him.” Mike Mulesky, a seating technician at United Seating & Mobility, handled the delivery and final fitting. *(Editor’s note: see the full equipment list and Ryan’s case notes at the end of this article.)*

“We were able to give him back function he had lost. He went from being able to go only forward and in one direction, to being able to turn in all directions and go backwards.”

The difference was immediate. “We were able to give him back function that he had lost,” explains Laura. “He went from being able to only go forward and in one direction, to being able to turn in all directions and go backwards.”

After Photos



The new chair also included features that help with several obstacles that Andy encountered with his previous chair. “This chair can tilt, so he can relax in different positions,” says Christine. “It also can rise up, so Andy can be eye-to-eye with us, which helps him interact more. We realized on a family trip to the zoo that he couldn’t see anything, due to the height of his chair. Now, he’ll be able to see everything.”

“When we showed Andy the seat elevator, that was the biggest grin I’ve ever seen in two years of working with him,” says Laura. “He really loves being on the same level as everyone else.”

The chair is also able to maneuver better over bumps, small rises, and doorjamb, making Andy even more independent. It has a joystick at the back of the chair, so if he gets tired, family members can easily control the chair without having to awkwardly position themselves next to him. “This new joystick is thinner, more like a pencil, so he has to spend some time practicing with it,” says Christine. “But it’s amazing how quickly he is picking it up. He was able to maneuver so much better in church on Easter Sunday.”

The assessment, fittings, customization and equipment purchase were funded through Medicare, Anthem Blue Cross/Blue Shield and private pay.

Ask Andy how he likes his new chair, and he breaks out into a huge grin. “When he drove the mobility course at OSU for the first time in his new chair, he just beamed,” says his mother.

Special thanks to:

Andrew Wirick and his parents, Christine and Dennis Wirick, for agreeing to share their story.

Andy and the team



From left to right: Ryan Martin and Mike Mulesky, United Seating & Mobility; Laura Fisher, Ohio State University Seating Clinic

Ryan Martin Case Notes and Equipment List

Main Issue

Client with Duchenne's Muscular Dystrophy. He is completely non-ambulatory and presents with severe orthopedic issues. Client presents with significant trunk weakness, anteriorly tilted pelvis, flexible anterior rotation of 1", and left superior obliquity of 2." He also presents with an "S" shaped scoliosis with right superior apex and left inferior apex. Client was previously

Resource Links

[United Seating & Mobility](#)

[The Ohio State Wexler Medical Center Wheelchair Seating Clinic](#)

[Find an ATP](#) - search function on RESNA website that allows you to search for ATPs via a number of different criteria

RESNA Position Papers:

[Application of Seat Elevating Devices](#)

[Application of Tilt, Recline, and Elevating Legrests for Wheelchairs](#)

[Muscular Dystrophy Association](#)

[Cure Duchennes](#)

Want to contact Ryan?

Rmartin@unitedseating.com

known to this clinic and vendor. We have met and consulted with client over a period of two years. He initially came to this clinic with goal of improved positioning in October of 2011. At that time powered mobility was discussed with family but primary goal was a manual tilt in space chair with Ride Design backrest for increased postural support, the implementation of which was successful. During the implementation of this system the client was still driving a donated rear wheel drive Invacare power chair with right hand joystick (client was positioned on a ROHO with severe anterior collapse of the trunk and dependent on support of an anterior chest support).

MAIN ISSUE: goal for powered mobility for increased independence. Client presented with progression and increased muscular weakness. He was no longer able to independently operate the donated power chair with right hand joystick. He was extremely dependent with executing certain directions on the joystick, and incapable of moving the joystick depending on time of day and level of fatigue. Challenge to the clinic team was how to provide optimal trial for drive controls with severe positioning challenges.

2. AT Recommended

- Quantum Q6 Edge power wheelchair
- Ride Design Custom backrest with abdominal support panel
- Roho Quatro Cushion
- Power tilt in space
- Power seat elevator
- Full length height adjustable armrests
- Bilateral AEL arm troughs with POSAlinc mounting hardware
- Right MEC joystick
- Stealth MEC mounting platform with Midline Gatlin mount
- Micro lite switch with goose neck mounting hardware (left hand placement)
- Stealth headrest with removable hardware
- Swing away leg rests with angle adjustable footplates
- One piece padded and angle adjustable foot box
- Seat belt
- Anterior chest support (H-Harness)
- Flat free tires
- Alternative drive control display with swing away hardware
- Batteries
- Attendant Control with mounting hardware
- ROHO Quatro cushion

3. How AT was adapted and customized

Client was molded for the Custom backrest from Ride Design's custom seating. Clinic team completed the mold and experimented with supine versus mold while in sitting at the edge of the Mat. Abdominal panel was specified to provide increased abdominal support and keep the client from collapsing from posterior shape. AEL arm troughs were recommended to improve bilateral upper extremity positioning and improve right hand posture with driving independence. Combination of these arm troughs, POSAlinc hardware for arm troughs and stealth MEC driving

platform provided optimal positioning of the arm and MEC joystick. Client remained on a ROHO Quatro secondary to client history on this cushion with success in skin protection and comfort. Left hand was positioned through AEL arm trough and Micro lite switch was placed at distal end of trough with client able to activate switch through trace finger movement. Power tilt in space was recommended for client's independent repositioning within his power wheelchair. Finally, padded foot box was provided with custom padding to the bottom of the footbox in order to accommodate bilateral foot contractures