

Child's Name: Jeremy
Date of Birth: 4-27-88
Date: 5-2-03

Powered Mobility and Seating Evaluation Medical Justification for Equipment

Identification of Need:

Jeremy is a 15 year old male with diagnosis of Spastic Quadriplegia Cerebral Palsy. He is unable to walk, nor manually propel a wheelchair. An Invacare TDX5 with power seat functions of tilt, recline, seat elevator, and elevating legrest is being recommended to provide Jeremy independence with mobility.

Motor Status:

Jeremy presents with high tone throughout, hindering his ability to participate in daily functions. He requires support to maintain a sitting position and is unable to shift his position without assistance. When provided with adequate postural support, Jeremy is able to use his right upper extremity to participate in functional activities within his capabilities. When items are placed close in his functional range, Jeremy is able to eat with setup, brush his own teeth, and use a joystick to drive a power wheelchair. Both active and passive ranges are limited throughout. Contractures at his knee are particularly painful, especially from static positioning. He is unable to accept weight through his lower extremities and requires total assist for transfers. He needs max assistance for general ADL's including bathing, toileting, and dressing.

Current Means of Mobility:

Jeremy's power wheelchair is not functioning and cannot be repaired. As a result, he is using a demo chair set up temporarily for his use as he awaits approval for a new one. This chair is sufficient for short term use, but is not meeting Jeremy's medical needs. Not only does he slide out, resulting in shearing forces, but also his lower extremities are not appropriately supported. He also complains of back and leg pain frequently from the static posturing. He is anxious to receive a new chair and specifically requested a chair that not only moves to get from place to place, but one that he can independently move "within" as well.

Equipment Trial:

Jeremy tried several chairs both at school and in the home to determine which would adequately meet his medical needs. These were various chairs manufactured by Pride, Permobil, and Invacare—a mixture of front wheel, midwheel, and rear wheel drive chairs. Because of Jeremy's tight living space, the rear wheel drive wheelchairs were eliminated. Jeremy was not able to make the turns in his home without outside assistance—his dad had to lift up on the power chair to fit through the space. Jeremy was nervous and felt unstable in the Pride wheelchair, especially over uneven terrain. The chair would tip forward when he stopped, eliciting his startle reaction. In order for the "tippiness" to be minimized, the front antitippers would need to be lowered—this would interfere with his ground clearance and hinder his independence.

Jeremy and his father participated in the decision making process. Many factors were considered, including maneuverability in small spaces and tight turns, handling on unlevel terrain, suspension, programmability of the electronics to match his physical capabilities, ability to add power seat functions, and cost effectiveness. The possibilities narrowed to two, a midwheel drive by Invacare and a frontwheel drive by Permobil. Both would adequately meet his needs both at home and in the community and were comparable in cost. Of the two, the Invacare midwheel drive proceeded through his house easier than the Permobil, with slightly more clearance, especially through doorways. Jeremy was also more successful navigating unlevel terrain with the Invacare. Because all wheels maintain contact with the surface and torque/power level can be adjusted, it is not necessary to take a “running” start to clear obstacles—obstacles are proceeded over more smoothly with less jerky movements. As a result, Jeremy’s hand could maintain contact with the joystick and not be “thrown” off as he drove.

Transportation of Power Wheelchair:

The bus will take Jeremy to and from school. The Easy Rider local transportation system will be used to take Jeremy to and from medical visits, grocery store, etc. A set of lightweight ramps is being recommended to ramp the steps and threshold entering his home.

Medical Equipment Components with Justification:

Invacare Products including TDX5 base:

The TDX5 has a combination of many features, including Stability Lock, True Track, SureStep, Centerwheel drive, and Mark V electronics. These features contribute to the chair’s ability to negotiate tight spaces, unlevel terrain, inclines, and thresholds while remaining stable and requiring less veer correction—minimizing Jeremy’s startle reaction, keeping him in control of the chair. As the chair progresses forward, each wheel maintains contact with the ground, reducing the “tippiness” that can affect an individual’s positioning and the chair’s stability. With Invacare’s electronics, parameters can be adjusted to match Jeremy’s physical needs. Speed, acceleration/deceleration, turn sensitivity, torque, power level, among others can all be adjusted using the programmer to adequately meet Jeremy’s driving needs now and modified as he gains experience with this chair.

Jeremy is capable of using the standard MPJ joystick. This joystick has the tiller in the rear for placing it closer to Jeremy for better functional positioning. The joystick will be mounted on a retractable/midline mount to be swung out of the way for getting close to tables, items, etc. and for transferring Jeremy in and out of the chair.

Motion Concepts Power Seat Functions and Seating Components

Power Tilt, Recline, Seat Elevator, Elevating Footrest:

Because Jeremy is unable to transfer in and out independently and spends his waking hours in the chair, Jeremy needs a means to change his positioning, not only for comfort and pressure redistribution, but also to assist with participation in functional activities.

Power seat functions will provide Jeremy with the ability to perform many independent tasks. These seat functions will include power tilt/recline, elevating legrest,

and seat elevator. Jeremy has a history of pressure sores and currently has one near his coccyx. Because Jeremy is unable to shift his weight, power seat functions will provide Jeremy with an unassisted way to redistribute pressure. He will be able to make frequent adjustments for comfort and pain management. With power tilt, Jeremy will be able to tilt back, using gravity to assist him back into position. Jeremy becomes noticeably worried when maneuvering over terrain other than level surfaces, feeling unstable. Because of the stability lock, surestep, and true track features of the TDX 5, Jeremy's nervousness was lessened. Used in combination with power tilt, Jeremy will be able to tilt back when proceeding over unlevel areas or when going down a ramp for stability as well. Because Jeremy uses his noninvolved upper extremity for driving, he is unable to carry or hold items. With power tilt, Jeremy will be able to tilt to stabilize the object on his lap for greater functional involvement with ADL's.

Jeremy presents with decreased endurance and needs to rest throughout the day. With power tilt and recline, Jeremy will be able to periodically rest, minimizing the active need for his muscles to constantly "hold" him in position. Tilt and recline will allow Jeremy to change his position frequently throughout the day and be supported in whichever position he chooses. Having tilt begin anterior and having recline begin at a closed back angle, Jeremy will be able to assume a "functional task position"—be supported when leaning forward to eat, work, wash his hands, etc. To accommodate for his kyphotic posturing, Jeremy can anterior tilt and open his back angle up slightly, maintaining a more upright position. The anterior tilt will assist with transfers and be used for getting under tables, sinks, etc. for eating, cleaning as well. He will be able to change the position of his pelvis from anterior (working position) to posterior (resting) as we all do, facilitating dynamic movement and flexibility. Due to Jeremy's current kyphotic posturing, not only is his diaphragm "collapsed", compromising respiration, but he must strain to look up and speak with those standing up. With tilt and recline, gravity will assist with thoracic expansion for influencing respiratory functions. With tilt and seat elevator, Jeremy will be able to change his visual field orientation instead of experiencing discomfort as he attempts to maintain eye contact. Because Jeremy presents with limited functional range, seat elevator will allow him to reach items previously unavailable to him. Seat elevator will also be used to even out transfer surfaces for improving safety for both Jeremy and his caregiver.

Because Jeremy experiences lower extremity edema and pain from static positioning, he will be able to tilt back and elevate his legrest for venous return. Jeremy frequently requests assistance to reposition his feet, experiencing pain when others are not gentle as he requests—power elevating legrest will return this control to him—promoting flexibility and circulation.

Seating components were chosen based on Jeremy's medical need and orthopedic involvement. A slightly contoured back pan with a flat cushion is being recommended—additional pressure relieving foam has been included to accommodate for Jeremy's kyphotic posture. A flat pressure relieving foam seat cushion is being recommended—this will velcro to a solid seat insert. Adjustable and quick release hardware will mount the seat insert and the back to the frame.

Miscellaneous Seating Components:

Currently, Jeremy does not have hip guides or laterals. As a result, he shifts out of position, unable to recover. Once his hips shift, he leans excessively until repositioned. Hip guides and laterals are being recommended to adequately support him for performing daily tasks. Jeremy is unable to maintain a sitting position safely without pelvic support. A Bodypoint belt is included with the seating components. A Dynaform chest support will be used intermittently when fatigued or when being transported to assist him maintain a more upright position. A headrest will be used as Jeremy accesses his tilt and recline seat functions.

Jeremy is using a Gemini to assist with communication. A Daessy mount will attach this device to his chair and allow it to be positioned where Jeremy is successful accessing it. A drink holder has also been included to increase Jeremy's water/liquid intake for urinary function. In order for Jeremy to become more independent, a catheter with legbag is being recommended. The other recommended Medcover bag will be used to hold these medical supplies. Both have a mechanism that "pops" open and closed, minimizing the fine motor needed to access.

Equipment Components:

Invacare:

Midwheel TDX5 base only with Mark IV electronics

Flat Free Tires

MPJ Standard Joystick

Quad Link Retractable

Easy Remote Programmer

Auxillary Module for 3 and 4

Wheel Locks

Motion Concepts:

Power Tilt, Recline, Seat Elevator, Elevating Legrest

Seating Components-viscoelastic back, seat, solid seat insert, flip back armrests, hip guides, laterals, hardware, custom adaptations

Stealth:

Gatlin Midline Joystick Mount

Headrest with Swingaway/Removable mount

Adaptive Engineering Labs:

Dynaform Chest Support

Bodypoint:

Pelvic Belt

Therafin:

Upper Extremity support with easel

CF Rehab:

Portable Ramps

Daedalus Technologies:

Daessy Mount with Eval/Adapter Plate

Medcovers:

Drink Holder

Medical Supplies

Rehab Supplier of Choice:

The family chose _____ in Parkersburg.

Contact Name:

Phone #:

****Please note:** The above components are brand specific and were chosen based on Jeremy's medical needs and should not be changed. Jeremy and his father were actively involved in the decision making process. Many factors were considered.

Jeremy tried many chairs before deciding on the one to adequately meet his needs. Because he was more successful and confident driving the Invacare midwheel drive over the others, it was chosen. Jeremy was able to safely negotiate both indoor and outdoor situations using this chair. He was less fearful with uneven terrain because he could proceed cautiously, not needing to have a "running start" to be successful. The chair tracked straight despite changes in terrain, slopes, etc. Features that match Jeremy's needs were priority. Jeremy needs to have a system that will allow him to move, not only to reach a destination, but also to change his posture depending on the activity. Static posture leads to decreased circulation, flexibility, respiratory and digestive functions, and increased pain and risk for pressure dilemmas. Providing Jeremy with dynamic capabilities is necessary to reduce these factors, especially as he ages. Because Motion Concepts was the **only** company to manufacturer all these power seat functions for an Invacare base, it was consequently included on the itemized list. Jeremy relies on his power wheelchair to actively participate in school, community, and home activities. Not having mobility would directly interfere with his independence. Please consider the above request promptly, as his demo chair is having motor and gear problems and is no longer reliable.

Thank you,

Christina Mayer, PT
Physical Therapist

Physician Signature
****no substitutions, no deletions
of above prescribed equipment**