

Considerations for Seating, Positioning & Mobility for Children with Complex Communication, Physical Needs and CVI

Christine Wright-Ott OTR/L, MPA cwrightott@bridgeschool.org
Joy McCollum Franco, ATP jmccollu@brdgeschool.org

A Feature Driven Approach for Walker Trials: The Why, Where & What?

1. Why does the Child need to use a Support Walker? Define the Purpose/Goals. Base the walker design and features on achieving the purpose/goals.

Developmental Goals: Achieve self-initiated mobility for preschool children to reach, touch, explore, push and pull toys, carry objects, play and interact with peers.

Features of Support Walker to Consider: Hands free; minimal hardware to get close to objects/peers. Lightweight AAC devices/low tech can be mounted on the frame of walker for access by student for peer interaction (Step-by-Step, I Talk2, I pad, books.) Ability to remove supports as young child's physical abilities improve (i.e., if upper body strength and balance improves the upper body supports can be removed and the pelvic supports raised so child can lean and reach.

Access playground & peer activities: Play ball games, soccer, meet up with friends, hide and seek, chase, run, jump, tetherball, kickball, access adapted playground structure.

Features to Consider: Hands free; minimum of 6" diameter wheels for outdoors; minimal hardware in front of user to not interfere with running, kicking and ball play; frame has a place for mounting a lightweight communicator/switch that won't interfere with reaching and playing.

Access inclusive physical education: soccer on the field, exercises, relay races.

Features to Consider: Hands free. Open frame design near feet to kick balls.

Wheels larger than 6" (Pacer), large mid-wheel design (Prone Walk or KidWalk) is more capable of maneuvering over uneven terrain like fields and uneven surfaces. Design of walker must allow room for legs when running and kicking balls (soccer.) Small turn radius assists in maneuverability.

Exercise: Walk, run, jump, spin.

Features to Consider: Weight relieving, dynamic vertical movement for jumping (KidWalk, Buddy Roamer, Walkabout), room in frame for legs to move during running. Mid-wheel design for spinning (KidWalk) on own axis or 4 swivel casters (Pacer, MyWay). Minimum 6" wheels for outdoor mobility over uneven terrain.

Experience sensory motor activities: Vestibular (spinning, jumping which helps some students to attend and focus), proprioceptive and kinesthetic (jumping, walking, running).

Features to Consider: Spinning for vestibular input which some student benefit from to help them attend requires rapid turning of the walker around the user's axis (mid-wheel design or all swivel casters), vertical dynamic lift so child can jump, minimal hardware in front of legs to not interfere with running.

Improve motor control: head, trunk upper extremities, legs.

Features to Consider: Supports can be adjusted and removed as child progresses (i.e. upper body supports can be lowered then removed so only hip support is provided, which allows the user to lean and reach or pick objects from the floor.) Dynamic leg wraps or leg prompts help guide legs and reduce adduction. Custom seat width and length can encourage alignment of legs.

2. Where will the student use the support walker?

Environmental Considerations & Suggested Walker Features

Indoors over smooth surfaces

Most support walkers will work on indoor smooth surfaces, even walkers with small casters. However, the small sized walker will be more maneuverable indoors in tight spaces than a larger walker.

Indoors with limited space to maneuver

The turning radius of a support walker depends on its design and frame size. A support walker with either four swivel caster options (Pacer, Mustang, FCI) or a large mid-wheel placement (KidWalk, ProneWalk) allow the user to turn around by pivoting the upper body over the pelvis and legs, thereby rotating on the body's axis. This in turn creates a compact footprint and turning radius. In contrast, support walkers with fixed rear wheels and front swivel casters (Grillo, Buddy Roamer, Grillo), require the user to turn by pushing outwards with one leg several times, while the rear wheels stay in place and the front wheels swivel to turn. This creates a larger turning radius, and may even double the turning radius in a medium to large size walker. Support walkers with a smaller turning radius will be easier for the user and professional/care provider to assist maneuvering.

Outdoors over flat even terrain (playground)

Walkers with a minimum of 4"-6" casters or larger wheels: Pacer, Grillo, Mustang, KidWalk, ProneWalk, Buddy Roamer, Mustang will work over flat, fairly even surfaces like playgrounds. However, the frame design should not interfere with the child accessing playground activities like jumping, kicking balls, reaching for objects and peers. These activities depend on a support walker being hands-free with minimal hardware in front of the child while providing vertical, dynamic movement.

Outdoors over uneven terrain and fields

Walker should have minimum 6" wheels. A large mid-wheel design with front anti-tips work well over uneven surfaces and fields (KidWalk). Support walkers with fixed rear wheels and swivel front casters may work over uneven terrain, if the walker is large and stable, but the turning radius will be much larger than a mid-wheel design. The walker should have an open frame to allow room for running and kicking balls if playing sports such as soccer with peers is a goal.

3. What components/adaptations will the child need in the walker for support?

Seat: A seat will help the child steer a hands-free walker from the pelvis, provide alignment and a place to rest, as fatigue can set in quickly, especially when running and playing sports. Remember that "therapy" often asks for a "no seat" configuration, but unless the student is walking independently, they need a seat for walking and running as they cannot be expected to maintain hip and knee extension while focusing on peers and physical activities at recess or in physical education. No seat configurations should be supervised by a therapist in therapy.

Solid or Saddle Seat: Can be made custom for longer sides (to align legs) and wider to align legs and reduce adduction or scissoring of legs. Some seats are multi adjustable (Pacer) and others allow for leg movement with a swivel design (KidWalk.)

Soft Strap Seat: More useful for child who can maintain hip extension and leg alignment. This style is more difficult to use with children who cannot take weight on their legs during transfers.

Hip/Pelvic Support: May be adjustable separately and above the seat. Works well for students who have poor stability in the pelvis and trunk, or conversely for those who do not need upper body or trunk supports but need stability at the pelvis. Extended hip guide option can help leg alignment.

Upper Body/Chest Support: Can be firm but padded with adjustability for intimate fit or designed as a tube-like standard size that isn't adjustable or a "soft" support that wraps around the chest. If child's trunk control improves then an adjustable upper body support that can be lowered and eventually removed for leaning and reaching.

Head Support: Adjustability rearward is beneficial for more complex users who may benefit from allowing the head to be slightly behind the trunk (for low tone) and for those who may extend too stiffly into the headrest unless it is rearward. Some users with poor head control may need additional chest support designed within the headrest like a Heads-Up Headrest or H.A.W.C, so the walker should accommodate various styles of headrests.

Supine/Posterior Frame: If a child depends on a headrest in a wheelchair, then a posterior walker may be more functional. Most of the hardware is behind the child, leaving minimal interference in front. Transfers are done by facing the adult so the child is backed into the walker. This design may allow more functional use of the arms and legs for physical activities as there tends to be less hardware in front of the child. Younger users do well with this, even if they don't need a headrest, or the headrest may be removable. If rearward tilt is available in combination with a headrest, a child with low tone may benefit from the support and tilt to compensate for gravity.

Prone/Anterior Frame: The hardware tends to be in front of the user and the user is transferred by facing towards the walker. Users who have very high extensor tone may demonstrate less extension with support on the anterior surface of the body in this style of walker than supports against the back, neck and head. It is difficult to put a headrest on this style of walker, but there may be a chin support if needed for head support. It is easier to transfer larger clients into a prone walker, especially if there's a hydraulic lift where it can be lowered for transfers and raised for walking. Some frames can be adjusted to be either anterior or posterior.

Adaptations for Support: Leg Guides: If a child's leg alignment isn't fully supported with a solid seat or the ankles cross, dynamic leg wraps or ankle prompts can be evaluated and placed on the thighs or ankles.