

Balance and Gait Training: Critical for Child Development

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From the time a baby first lifts his or her head for the very first time, to when an individual is well into his or her senior years, balance capability plays a critical role in being able to accomplish functional goals of daily living. Sitting requires balance. Picking up a dropped object requires balance. Feeding one's self requires balance. Dressing requires balance. This list of balance tasks is almost endless. Locomotion, whether independent walking, crutching walking, using a walker, or even driving a motorized wheelchair also requires balance, as well as object manipulation, mental focus, perceptual-motor skills, physical fitness, concentration, and motivation.

Some children develop balance and gait while progressing through normal developmental stages. Other children do not progress in a timely manner through these same levels. Physical disability, obviously, can interfere with development of balance and, subsequently, gait. Developmental delay, auditory as well as visual impairment, learning disability including perceptual-motor deficit, attention deficit disorder, hyperactivity, and a wide variety of neurobiological disabilities can also have a negative affect on balance and gait. Cognitive disability can impair mental processing necessary for solving movement problems, including gait challenges. Low fitness, inappropriate muscle tone, and/or obesity can affect development of balance and/or gait. Children so affected need therapeutic intervention.

Childhood is the time when the growing individual will develop most of the basic motor skills he or she will use for the rest of his or her life. Balance and gait are foundational to most other motor tasks. In addition, balance is an important component of perceptual-motor development, influencing laterality, directionality, and spatial orientation. Providing therapeutic intervention through balance and gait training will benefit almost every child, regardless of degree or type of disability.

Because movement in the aquatic medium is easier than movement on land, the pool is a wonderful venue for implementation of balance and gait training. Water depth can be varied from shoulder depth providing maximum body support to hip or knee depth closely approximating land activity. A pool wall can provide stationary support. Flotation equipment can be used to vary support and increase self-reliance in the child, while still providing some physical security.

Water means a softer landing if balance is lost. With the weight reduction associated with submersion, it is easier to sustain movement and build cardiorespiratory fitness. Working against the resistance of the water helps build strength. Many times low physical fitness is a deterrent to land-based gait training. Activity in water can help build fitness, while also facilitating balance and gait.

Many aquatic balance and gait activities, such as underwater balance beam, poly trails, aqua steps, and locomotor patterning set the stage for transfer of learning. As the child develops the physical fitness and focus of attention necessary for that activity, transition to land performance becomes easier as the child is already familiar with the tasks. For example, using an aqua step, placed next to a pool wall for single-handed support, can be a lead-up activity to stair climbing. That aqua step can be used for step-ups, as well as for step-downs.

Even without equipment, movement exploration and problem solving activities can provide opportunities for a child to learn motor planning and task accomplishment, both important for functioning in school and community environments. Successful engagement will also foster self-esteem. Remember, falling down in the pool means a nice, soft water landing, more fun than the same painful fall on land.

Balance isn't just a standing activity. Sitting, kneeling, crouching, and four-point support all involve balance. Balance platforms, such as cutouts, the aqua skate, and inflatable sit-upons all provide opportunities for developing balance. Improvement in balance, in turn, generates improvement in mental focus and impulse

control. For the child with hyperactivity and/or attention deficit disorder focus and motor control learned when developing balance can carry over into many aspects of schoolwork and daily life at home or in community.

Equipment used for balance and gait training is engaging and challenging for children. Poly equipment is colorful to see and user friendly to handle. Balance can be practiced on a wonderboard, inflatable kayak, rescue board, or beach ball. A spin jammer will not only challenge focus during a balance task, but also facilitate hand use and finger dexterity.

Adding music to the mix capitalizes on entrainment, letting the rhythm guide motor performance. Rhythmic movement in water can be as easy as a polka, where the music sets the beat and movement can be almost any locomotor pattern, or as difficult as a line dance, where the specifics of heel and toe, can greatly facilitate focus on foot placement and weight shifting. Direction following, moving in concert with other people, and social interaction can be facilitated through music.

Music can very often touch autistic children where no other therapeutic modality can. Combine music with aquatic activity for balance and gait training and multiple purposes can be met. Capitalize on a child's ability to mimic and/or mirror an activity, without verbal directions. Let characteristics of music dictate the movement and allow a child's natural responses come out. We balance as we move, no matter what the movement. Engagement the movement and balance practice is automatic.

Because children are constantly changing as they grow and develop, a therapist needs a wide variety of activities to meet constantly changing goals. Avoiding the "We did that last time" whine, or the "I already know that" stubbornness can be difficult. Designing task appropriate in-water assessments can be equally challenging, as motivating child participation is often the key to a successful assessment. If you work with children, or adults at the functional level of children, a broad selection of balance and gait training activities are an important part of your therapeutic resource file.

Three activity packed hours of balance and gait training are included in the ATRI Pediatric Certificate Training being held May 29 through May 31 in Chicago, IL. For more information on this intensive certificate training go to www.atri.org. Unable to attend the workshop? Looking for move ideas? *Functional and Creative Activities for Balance and Gait Training*, a 100 page book on CD is available for \$20 +\$3 shipping and handling from Aquatic Consulting & Education Resources, 7252 W. Wabash Avenue, Milwaukee, WI 53223.

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