

Module: **Developmentally Appropriate Orientation and Mobility**

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**Session 4: Motor Development and Movement**

**Handout G: Hypertonia**

Sapp, W. (2004). *Hypertonia*. Chapel Hill, NC: Early Intervention Training Center for Infants and Toddlers With Visual Impairments, FPG Child Development Institute, UNC-CH.

Postural tone is the readiness of the muscles to respond to messages from the brain (Schoen & Anderson, 1999). The most common problem with tone experienced by children with visual impairments is hypotonia, or low tone. Many children with visual impairments and additional disabilities, however, experience hypertonia, or high tone. This is especially true in children with cerebral palsy (National Institute on Neurological Disorders and Strokes, n.d.).

**Definition.** Hypertonia is a condition in which the muscles have an abnormal increase in tension and an inability to stretch. If left untreated, hypertonia can result in permanent loss of function or deformity (National Institute on Neurological Disorders and Strokes, n.d.).

**Impact on movement.** When children have hypertonia, their bodies are very stiff. They may extend and stiffen all or parts of their bodies, including the arms, legs, and back. Alternatively, they may contract their extremities, drawing in their arms and legs or fisting their hands. Children with high tone often have difficulty relaxing their muscles enough to engage in typical movement, especially if an activity is stressful or exciting.

**Intervention strategies.** *Involve a physical therapist.* If the child has an identified physical impairment, such as cerebral palsy, a physical therapist should be a part of the team. If there is no identified physical impairment, but the child is experiencing serious problems due to high tone, a physical therapist can assess the child to determine if the child qualifies for physical therapy services and to provide suggestions to the team.

*Therapeutic handling and positioning.* Therapeutic handling is defined as manipulating a child's body in such a way as to promote more natural postural tone, to facilitate upright posture, and to encourage normal movement patterns (Orelove, Sobsey, & Silberman, 2004). Positioning is placing a child in a position that will maintain normal tone, maintain proper alignment of body parts, maintain stabilization of body parts, and promote active participation (Orelove, Sobsey, & Silberman, 2004). Use of supports to encourage maintaining proper position can be helpful. Physical therapists provide information on proper handling and positioning techniques that will meet the specific needs of the child.

By working with the physical therapist, the TVI or O&M instructor can help find positions that will enhance the child's tone and provide the best opportunities for the child to use vision or touch.

*Specific techniques.* Children with high tone benefit from soothing experiences to help reduce their tone. Playing soft music, providing a massage with long, slow hand strokes, and very gentle rocking can help a child relax muscle tone. In some cases, lowering the lights may be effective, though this is not always functional if the child needs greater lighting to use vision or if the child has no light perception. Any slow, smooth movement can help reduce tone. Not all techniques will work with all children due to their individual preferences. Experiment with different movements and tactile, visual, and auditory stimuli to find what is most effective for each child.

## References

- Schoen, S.A., & Anderson, J. (1999). Neurodevelopmental treatment frame for reference. In P.K. Kramer & J. Hinojosa (Eds.), *Frames of reference for pediatric occupational therapy* (2<sup>nd</sup> ed., pp. 83-118). Philadelphia, PA: Lippincott.
- National Institute on Neurological Disorders and Strokes. (n.d.). *NINDS hypertonia disease information page*. Retrieved June 26, 2004, [http://www.ninds.nih.gov/health\\_and\\_medical/disorders/hypertonia.htm](http://www.ninds.nih.gov/health_and_medical/disorders/hypertonia.htm)
- Orelve, F.P., Sobsey, D., & Silberman, R.K. (2004). *Educating children with multiple disabilities: A collaborative approach*. Baltimore: Paul H. Brookes.