

2 Neurodevelopmental Movements: Foundation for Function, Remedy for Developmental Trauma

We live in an age of epidemics. Over the last few decades, the rates of physical, mental, emotional, and behavioral illnesses have skyrocketed. “Developmental disabilities are common and were reported in 1 in 6 children in the United States in 2006–2008” (Boyle et al., 2011). Children in modern societies are especially vulnerable because of compromises to their development in the womb and early infancy. One of the most fundamental components of development is movement: **Infants require innate neurodevelopmental movements to properly develop the brain, body and sensory systems. Too often these intricate innate movements are thwarted, rendering the child’s foundation for proper functioning incomplete.** When severe, interference in development may lead to challenges like autism, ADHD, learning delays, mental illness, behavior problems, and sensory processing disorders.

There are numerous factors merging to create the “perfect storm” leading to the compromised development of children. The many suspected causes*, especially when combined, can interfere with innate movements and the growth of our children in the womb and early infancy.

Compromised development appears to be a problem for the vast majority of children

in modern society. Individuals dealing with more severe dysfunction often experience immense stress and suffering—both physical and emotional. Even children who are “neuro-typical” and academically skilled often experience underlying anxiety, emotional imbalances, sensory processing glitches, physical challenges, and excessive daily struggle. In short, normal human development appears to be fundamentally awry in the modern world at this time. Current drug-based medical intervention, which cannot replace lost development, appears to be largely ineffective for addressing these challenges (Jensen, et al., 2007; Whitaker, 2011).

Along with large-scale preventative measures, we require new tools and new ways of thinking to help the growing numbers of children and adults with challenges.

Replacing Lost Development

Among many innovative approaches, one promising solution is to apply the innate neurodevelopmental movements to replace what was missed in early infancy or to re-establish—as best we can—development that was disrupted. Neurodevelopmental

movements—primitive and postural reflexes, rhythmic movements, and the “milestones” or developmental movements—play a key role in supporting healthy human functioning at any age. They have an enormously important role to play in turning around the current situation of rampant dysfunction. Knowledge of these movements, especially when applied early enough, can prevent a great number of potential problems as children grow and develop.

The neurodevelopmental movements provide a window into the workings of the neuro-sensory-motor systems. Whether the challenges to these systems are mild or severe, very often the dysfunction is associated with underlying immaturity or disruption of innate movement. For example, retained primitive reflex patterns and/or underdeveloped postural reflexes are associated with hypotonia, hypertonia, balance impairments and dyscoordination (Bobath, 1991). Motor dysfunction is also a core characteristic of autism, ADHD, sensory processing disorders, learning challenges, cognitive delays, and anxiety (Hilton, Zhang, Whilte, Klohr, & Constantino, 2012; Konicarova, Bob, & Raboch, 2013; Kopp, Beckung, & Gillberg, 2010). The more we assess the neurodevelopmental movements of individuals with known mental, emotional, and physical dysfunction, the more we see the presence of delayed, deficient, or aberrant motor patterns and unintegrated reflex patterns.

The basic premise supporting the use of neurodevelopmental movements for addressing dysfunction is that the brain and body recognize and respond to these movements because they are part of the innate human template for development.

In other words, because these neurodevelopmental movements stimulate the growth and myelination of neuro-sensory-motor and brain pathways, we can use these movements at any age to create the same effects that we see in infancy—more brain and sensory maturity, better strength, improved balance, emotional regulation, coordination, speech, and cognitive skills.

Though more research is required, it is highly likely that research will confirm what we see consistently in clinical situations: Innate neurodevelopmental movements of infancy have far-reaching beneficial effects for individuals with challenges.

Promoting Health and Well-being with Neurodevelopmental Movements

Because the innate neurodevelopmental movements are the foundation for fundamental skills and because the development of so many children is disrupted in the womb and early infancy*, it warrants the use of these unique movements on a large scale. These neurodevelopmental movements already are proving highly useful to parents and to a wide variety of professionals, including occupational therapists, physical therapists, mental health therapists, educators, speech and language pathologists, developmental optometrists, vision therapists, lactation consultants, healthcare providers, psychologists, social workers, yoga therapists, acupuncturists, pain specialists, tutors, midwives, doulas, massage therapists, trauma specialists, and addiction counselors.

That these movements are effective in such a large variety of applications reveals their fundamental importance in our development and also that they are supportive throughout the human lifespan.

It is the inherent nature of neurodevelopmental movements to promote brain and sensory maturity. They are the “alphabet of movement” and the foundation of function.**

*The causes for compromised development in modern societies are numerous, complex, and are most likely a combination of exposure to some or all of the following environmental and physical traumas: electromagnetic radiation, herbicides (glyphosate, atrazine, etc.), pesticides, plastic and heavy metal toxins, drugs, alcohol, caesarean section or traumatic birth, vaccination, ultrasound, genetically modified organisms (GMOs) in food and gut dysbiosis. Cultural practices that may also contribute to poor development are: lack of support for pregnant mothers, clamping and cutting of the umbilical cord at birth, lack of support for natural birthing, lack of bonding and breastfeeding, lack of tummy time, swaddling past the age of two months, baby carriers that restrict movement, babies sleeping and lying supine instead of prone and excessive screen time.

**Bonnie Bainbridge Cohen (2012) describes innate infant reflexes as “the alphabet of movement”.