

INFANT REFLEXES AND ADULT DEVELOPMENT

Sensory Integration through Movement

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According to varied research on infant reflexes, babies come into life having a specific movement program. Through these reflexes, babies in utero know how to turn over, to kick, and to propel themselves through the birth canal. The instinctual knowledge of infants includes taking the first breath. Infants know how to take in nourishment with their mouths as they nurse, and they bond with their mother by looking into her eyes. They know how to reach with their hands and to begin the motions that lead to crawling, creeping, and walking. These automatic movement patterns, essential for survival, are hard-wired to the brainstem. Infant reflexes are as highly organized and precisely structured as chemical compounds. Research on infant reflexes forms an increasingly important tool for understanding human development.

The movement patterns we call “infant reflexes” are instinctual, universal, and extremely specific. Many reflexes appear while the baby is still in the womb. For example, the *Touch Reflex* can be seen as early as one week *in utero*, in the embryo’s instinctual movement away from contact with the uterine wall. Many infant reflexes continue into toddlerhood and some stay with us all of our lives. One of these enduring reflexes is the *Adult Startle Response* that develops from the *Moro Reflex*. The *Moro Reflex* develops during the last trimester in utero in response to the head falling backwards, causing the chest to expand and the limbs to extend. The *Moro Reflex* is evident as the baby’s head falls back as the newborn is emerging from the birth canal. The *Moro* opens the lungs as the infant takes the first breath. The reflex matures into the *Startle Response*, a lifelong reflex manifest in a sudden involuntary backwards move in the presence of perceived danger.

The *Asymmetrical Tonic Neck Reflex* begins with head turning to one side, and the arm and leg following. If the movement does not begin with the head, the reflex is not activated. To experience this reflex, first turn your head to one side and let your arm follow in an open gesture. Notice the ease of motion. Next, try these movements in the opposite order: begin the movement with your arm then turn your head. Most people report that leading with the head feels natural and fluid, while leading with the arm feels mechanical and stiff.

The *Asymmetrical Tonic Neck Reflex*, or *ATNR*, affects a baby’s ability to survive and thrive. “Lying on his back, the baby hears a sound. Turning his head to hear and see, his arm extends toward it. . . Head turning activates the vestibular system through shifting the fluids in the inner ears . . . The gift of the *ATNR* is in providing the exquisite complex of coordination needed to turn

thought into language. . . Listening with the right ear, the baby encourages language recognition and expression to develop in the left hemisphere, where Wernike's and Broca's areas are located."¹

Infant reflex movements are not the result of a conscious choice. If the *ATNR* is active when the head turns, the arm automatically extends. As babies grow and develop these movements gain freedom from the automatic reflex response and become integrated into the higher functions of the brain.

Various forms of trauma can inhibit the normal integration of reflexes. Factors that may inhibit the development of normal movement patterns include injuries at birth or after, drugs ingested in utero or through breast milk, allergies, physical and emotional overstimulation, an unsafe environment, blinking lights and media overload. A significant inhibitor of normal development is the simple lack of opportunity for movement. Babies carried around constantly in plastic car seats or other forms of bodily restraint do not gain the necessary practice time to develop normal movement patterns.

Older children may manifest unintegrated reflexes in the use of their bodies. For example, children who flop to one side at their desks, reading or doing their work with their heads resting on an arm, are manifesting an unintegrated *Asymmetrical Tonic Neck Reflex*. They place themselves in this physical position in order to concentrate. On occasion these children may actually fall sideways out of their chairs. The movements are reflexive, and thus the children lack the choice of "sitting up straight." As they attempt to process information sitting appropriately they must assume a compensatory mode that creates tensions and other difficulties. When tired or anxious adults and children may return to unconscious movement patterns. An example of the *Asymmetrical Tonic Neck Reflex* may be seen when observing a driver turning his or her head to the left and then automatically moving the steering wheel in that direction.

I have found that working with reflex movements can be astonishingly effective. The client is guided to revisit the original movement program of infant reflexes, stimulating the brain/body system to remember and return to its natural developmental progression. Simply by moving through the reflex patterns, an individual can work through all kinds of residual developmental issues that may continue to have an influence in adult life.

I once worked with a thirteen year-old having a tense writing grip that allowed no flexible opposable motion of the thumb. Although the boy loved to read, he hated writing, and had never written more than a few sentences at one time. At the end of our first session, during which we worked through three infant reflex movement patterns, he was holding the pencil normally. After our second session, I received an email from his mother informing me that her son had just written a

¹ Eve Kodiak. *Rappin' on the Reflexes*. Temple N.H.: *SOUND INTELLIGENCE Productions*, 2006, 81.

four-page paper. He seemed unimpressed by her enthusiasm and responded with: “Whatever.” Once a reflex is integrated, it feels natural, as if things have always been this way.

The Robinson Grasp Reflex is a reflex that integrates fine motor coordination like that in handwriting. To re-establish this reflex, the practitioner opens the hand in the appropriate developmental sequence the baby’s hand normally goes through, returning movement to a natural ease. To experience this, write your name and notice how it feels. Notice any subtle tensions in your body, and notice your emotional response as you write. Now grip your hands in the five positions of the *Robinson Grasp Reflex*:

1. Thumb tucked inside fist.
2. Thumb out in front of your fingers.
3. Thumb positioned atop your index finger. Wiggle. (This is the first experience of the opposable thumb!)
4. Thumb and index finger make a pincer grip. Flat fingers, open and close.
5. Thumb and index finger round in the “OK” symbol. Press each finger in turn against the thumb.

Now, write your name again. What do you notice?

Rappin’ on the Reflexes turns these motions into a finger game. The two hands have a dialogue, as they move through these five motions, and “shake” at the end.

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| 1. “I’m shy.” | “Me, too.” |
| 2. “Think I’ll take a peek.” | “Me, too.” |
| 3. “Think I’ll say hello.” | “Me, too.” |
| 4. “Hi, how are you?” | “Fine, and you?” |
| 5. “I’m great!” | “Me, too.” |
| 6. “Let’s shake!” | “Me and you.” |

Reflexes can be integrated at any age. During a recent workshop, one of the participants described the consequences of a car accident some years ago. Her grip was impaired and her hands now become numb when she drives. “I’m doing the “I’m Shy” exercise four or five times a day,” she related. “It really helps!”

Jean Ayres’ pioneering work on Sensory Integration relies on an understanding of infant reflexes. In 1979 Ayers recognized innate responses existing in “a total body motor pattern” and manifest as “automatic reactions.” She observed: “These built-in responses provide building blocks for the development of more advanced abilities.”² Bonnie Bainbridge Cohen uses infant reflexes extensively in the modality she developed called *Mind Body Centering*, which has become part of many

² A. Jean Ayres. *Sensory Integration and the Child*. Los Angeles CA: Western Psychological Services: 1979, 1994: 16.

dance and movement therapy programs. Teachers from various disciplines incorporate infant reflex research into their curriculum and practice of Educational Kinesiology. They include Paul Dennison, PhD., neurobiologist Carla Hannaford, PhD., psychologist Dr. Svetlana Masgutova, occupational therapist Rita Edwards, and kinesiologist Renate Wennekes.

Not every child has the opportunity to integrate the reflexes one-on-one with a practitioner. For that reason, I wrote and recorded the CD/Book set, *Rappin' on the Reflexes*. In it the infant reflex movements are choreographed to simple songs and raps. Any teacher or parent can play the CD and do reflex movements with their children by simply following the lyrics. When in doubt, parents can refer to the photos in the book. If more information is needed, there are essays and teaching tips for each reflex. An index of conditions indicates the different reflexes that may be applicable in working with children having special needs, such as those of autism and dyslexia.

When a child *does* have the opportunity to work with me one-on-one, I often add the technique of craniosacral therapy to the reflex work. Craniosacral therapy uses very light manual pressure to “track” the flow of cerebrospinal fluid. This fluid is enclosed by tough tissue called *dura*, and together these form a closed hydraulic system that protects the brain and spinal column. The cerebrospinal fluid creates a slow pulse as it flows between sacrum and cranium, a body rhythm that is independent of respiration. When this flow is interrupted – usually through physical or emotional trauma - neural signals can also be interrupted, and information may not travel along appropriate, efficient pathways.

I find that craniosacral therapy can often enhance or even repair a system’s ability to process information, making subsequent reflex work more effective. Conversely, sometimes reflex work opens pathways that make craniosacral techniques more effective. Reflex work is part of a whole developmental picture, and can enhance many other modalities.

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For more information about CranioSacral therapy, go to www.upledger.com (The Upledger Institute, founded by John Upledger, D.O.)

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