

Retained Neonatal Reflexes

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Primitive Reflexes

In the womb and through the first year of life, our cortical brain is not yet fully developed. During this time we depend on automatic, instinctual, involuntary reflexes which are controlled by our brainstem. We call them *primitive reflexes* because the brainstem is the most primitive part of our brain. We rely on them for survival and development in the womb and the first few months of life. These primitive reflexes should be present and active at birth, and then be integrated back into the brainstem during the first 3 to 12 months after birth to make way for sequentially higher brain functions to develop.

Neonatal Reflexes – “Retained” or “Neonatal display of” Primitive Reflexes

Neonatal literally means “newborn”, or very young. As our higher brain centres begin to mature enough for conscious control of activity, continued display of primitive reflexes can create a nuisance that interferes with normal brain development. These primitive reflexes remain anatomically and neurologically available to respond to traumas throughout our life. But if all is well, they stay integrated back in the brainstem and do not interfere with higher centre control.

If the neonatal reflexes are retained (not properly integrated), they can disturb some or all of the functions of the higher centres, including balance, normal body movement, gross and fine motor control, structural problems, vision, hormonal problems, social cueing, emotional and academic development, anxiety, panic attacks, autistic and attention deficit spectrum symptoms, etc.

The perception of and our response to our inner and outer environment may be disturbed; that is, conscious life may be disturbed. This can be very subtle or every bit as dramatic as it sounds.

Related Structural Corrections

Structural corrections have been developed that assist the integration of retained neonatal reflexes. Most of these are cranial and sacral corrections. Cranial corrections use gentle pressures on particular places on the head in specific directions, often on a specific phase of breathing. Adjusting the sacrum or tailbone frees the lower end of the cerebrospinal fluid (CSF) drive system. These corrections help to normalise central nervous system function. Cranial and sacral motion circulates (CSF). Along with reducing the strain which structural and hydro-dynamic fixations impose, this improves the ability of CSF to carry nutrients in, wastes out, and neurotransmitter-modulated messages throughout the central nervous system (brain and spinal cord).

Thus the stigma of many “labels” like Autism (ASD), Attention Deficits (ADHD), Dyslexia, Learning and Behavioural Difficulties, may be partially a structural problem that can easily be treated by a Doctor of Chiropractic or Osteopathy who has been specially trained to work with Retained Primitive Reflexes.

Structural correction can be likened to fixing the “hardware” of a computer. After the hardware is fixed there is also the “software” to consider. Thus structural correction is only one part of a team that includes Chiropractic Neurologists, Behavioural Optometrists, Neuropsychologists, Sound Therapists, EEG Neurofeedback, Medical Practitioners, Clinical Nutritionists, Occupational Therapists, Psychologists, Speech Therapists, etc. Those trained in Retained Neonatal Reflex correction are also taught when to refer and to which other professions.

Fear Paralysis Reflex (FPR)

This is most important reflex to fix first. It is related to overdriving the parasympathetic nervous system. If this reflex is retained it can show up as withdrawal, reticence at being involved in anything new, and fear of different circumstances. It also shows up as fears and phobias, panic attacks, inability to move forward, and is present in almost all of us. It will always be present in people who have had head/neck injuries including whiplash, falls, or acquired brain injuries (stroke, TBI), and in patients with autism.

Retained Fear Paralysis Reflex may lead to any of the symptoms listed below:

- Neck, chest, or abdominal pain
- Weak immune, digestive system; "Catches every cold that comes by"
- Fatigue and Low tolerance to stress
- Anxiety seemingly unrelated to reality (fears and phobias: elevators, agoraphobia, etc.)
- Fear of social embarrassment; insecurity; lack of trust in oneself
- Hypersensitivity to touch, sound, changes in visual field
- Dislike of change or surprise; poor adaptability.
- Breath holding; Elective mutism
- Overly clingy or may be unable to accept or demonstrate affection easily
- Autistic Spectrum (including Asperger's) traits / Obsessive-Compulsive and Tourette's Disorders
- Negativism, defeatist attitude
- Immediate motor paralysis (freezes) under stress - can't think and move at the same time

Moro Reflex

The newborn's higher centres have not yet developed enough to make a rational decision about whether a circumstance is threatening or not. It is protected by an involuntary "one reflex for all occasions", one set of physical and hormonal events which cover for most eventualities.

The reflex is set off by excessive information in any of the baby's senses. For example, a loud noise, bright light, sudden rough touch, sudden stimulation of the balance mechanism such as dropping or tilting.

It is the earliest form of adrenal "fight or flight response". This response prepares for fighting or running and if not integrated leads to hyperactivity.

As the adrenal glands are a large part of our immune system; constantly being turned on can lead to adrenal fatigue and therefore asthma, allergies, and chronic illness.

Retained Moro Reflex may lead to:

- Hypersensitivity to sudden noise, light or movement; Stuck in "Fight or Flight" mode
- Sensitivity to foods, food additives, chemicals, metals, drugs, environmental toxins
- Adrenal or thyroid fatigue; allergy, asthma, chronic illness, auto-immune problems
- Anterior weight bearing posture-related problems; neck and back pain; tendency to trip and fall
- "Type A" personality; stress-driven overachiever
- Problems with focus, attention, distractibility. Difficulty staying "on-task". Lack of organization
- Performance anxiety; Difficulty with new or stimulating experiences
- Emotional and social immaturity; Reactivity disproportionate to stimuli or events; Outbursts; temper tantrums; oppositional behaviour; expressions of verbal or physical abuse; fighting
- Problems with planning, sequencing, timing, rhythm, impulsiveness; including ADD/ADHD
- Compulsively participating in risky behaviours (business, sex, gambling, substance abuse, etc.)

With a retained Moro reflex, the child may never have fully experienced the discovery phase of development, the "terrible twos". As the Moro integrates after treatment, the child (or teenager or adult) has the opportunity to pass through this important developmental phase. "Terrible twos" may not appear appropriate in later years, but it is important that this phase of development runs its course. Emotional ups and downs are common for a short period as the nervous system and hormonal system readjust, but then the benefits of correction shine through.

Juvenile Suck Reflex

The infant projects the tongue *forward* to suck a nipple. In the adult swallow reflex, the tongue moves *backwards* to push food down the throat.

If a juvenile suck reflex is not adequately integrated, the tongue projects forward before moving backward in the normal swallow. This tongue thrust continually pushes the front teeth forward, causing a narrow mouth arch and protruding upper teeth. One of the common problems requiring orthodontics or oral-facial orthopaedics, this narrowed arch has been correlated with numerous health problems over most of the past century, beginning with the work of Weston Price, DDS as early as the 1930's.

There is a link between the mouth and hands in the early months of life called the Babkin response, seen as kneading movements of the hand associated with suckling. This is a two-way response; hand movement may affect speech, chewing or speech may affect manual dexterity if the Juvenile Suck, Rooting, or Palmar reflexes are retained.

Retained Juvenile Suck Reflex may lead to:

- Speech and articulation problems
- Difficulty swallowing and chewing
- Difficulty speaking and doing manual tasks at the same time
- Involuntary tongue or mouth movements when writing or drawing
- Poor manual dexterity, especially when chewing or speaking
- Class II dental occlusion requiring dental intervention

Rooting Reflex

Light touch of the cheek near the edge of the mouth causes a baby to turn its head toward that side, open its mouth, and extend the tongue in preparation for suckling. This is called the Rooting Reflex.

If retained, there may be hypersensitivity around lips and mouth. The tongue may remain too far forward, resulting in speech and articulation problems, dribbling, difficulty swallowing and chewing. They may be fussy eaters or thumb suckers.

Correcting this reflex may promote normalization of hormonal functions in children and adults. Many cases with abnormal thyroid or adrenal function and laboratory tests have moved to normal ranges after this correction. Most importantly, the patient's hormonal imbalance symptoms have cleared. Whenever one sees a thyroid problem, possibly including autoimmune problems which affect the thyroid (e.g., Hashimoto's Thyroiditis), it is worth checking the Rooting Reflex.

Retained Rooting Reflex may lead to:

- Hypersensitivity around lips and mouth
- Tongue sits too forward in the mouth
- Dribbling
- Speech problems
- Poor manual dexterity when speaking
- Hormonal imbalances, especially involving thyroid and adrenal functions

Palmar Reflex

Normal neonates have an active Palmar, or Grasp, reflex. When the palm of the hand is touched, the three small fingers flex toward the palm to grasp. This reflex must integrate for normal prehension (holding between the thumb and fingers).

If the Palmar Reflex is retained, one often sees poor handwriting, but more importantly, a poor ability to process their ideas and then write them down. Copying words may be easy but the task of spelling words is more difficult and messy. They may classically say that they 'have a hard time getting ideas from their head down their arm to their hand'.

Independent movement of the fingers will tend to weaken other muscles. Thus the child may slump during tasks like playing piano or making models or writing at their desk. In adults, the most commonly heard complaint is "my back hurts when I sit in front of my computer" (typing requires independent finger movement).

Palmar Reflex retention may lead to:

- Poor fine motor skills and manual dexterity, including writing, drawing, throwing and catching
- Poor posture when playing piano or working with the hands
- Inappropriate pencil grip and poor handwriting
- Difficulty processing ideas from head on to paper
- Poor posture and/or back pain when working at a desk or computer
- Speech and language problems (see Suck and Rooting Reflexes above)

Plantar Reflex

The Plantar reflex is similar to the Palmar reflex in that stroking or pressing on the underside of the foot causes the foot to flex and the toes to curl, as if to grasp what touched the foot.

Plantar Reflex retention may lead to:

- Difficulty learning to walk; awkward running
- Poor balance with tendency to stumble or fall
- Toes curl under when putting on shoes or socks, with difficulty getting the foot into the shoe
- Problems with sports requiring balance and coordination while running (soccer, skiing, tennis)
- Low back pain while walking and/or standing
- Shin soreness or 'shin splints'
- Recurrent ankle twisting and spraining
- Difficulty walking in the dark or with eyes closed (vision is not able to assist balance)
- Unable to 'walk and talk' or 'think on one's feet'

Asymmetrical Tonic Neck Reflex (ATNR)

If a newborn's head is turned to one side, the arm and leg on the side to which the head is turned straighten while the opposite arm and leg pull in. It appears to assist the baby's active participation in the birthing process.

In the neonatal display of the ATNR, the hand moves in conjunction with the head. This connection between touch and vision helps establish distance perception and hand eye co-ordination. If retained, the hand and eye want to move together, making it difficult to look up at a blackboard and down to write. When walking, turning the head results in the straightening the arm and leg on the same side, upsetting balance and normal walking pattern. Looking at the hand tends to weaken other muscles. This affects ability to catch a ball and other sporting activities.

In early months, ATNR locks vision on to anything which catches the attention. If inappropriately retained, the child (or adult) is easily distracted by anything that attracts the attention.

ATNR retention may lead to:

- Poor handwriting. Awkward, excessive pencil grip
- Difficulty copying from a blackboard
- Missing parts of a line when reading
- Unable to cross the vertical midline (for example, a right-handed child may find it difficult to write on the left side of the page) and difficulty integrating left and right brain functions
- Hand-eye coordination problems. Difficulty catching or throwing a ball
- Disturbances in the development of visual tracking (necessary for reading and writing)
- Disturbed balance and judgment of distance increases trip and fall, motor vehicle, sports, and other related accidents and injuries
- Lack of Bilateral Integration (integrated use of the two sides of the body)
- Establishment of a dominant hand, eye or ear may be difficult
- Poor at sports
- In adults there can be chronic shoulder and/or neck problems

Tonic Labyrinthine Reflex (TLR)

TLR involves the vestibular system (sense of balance and position in space) and how it interacts with other senses and therefore also balance.

The child who still has a retained TLR when starting to walk cannot acquire true standing and walking security and may experience difficulty in judging space, distance, depth and speed.

Sagittal Tonic Labrynthine Reflex is activated when looking up and down, as in taking notes from a blackboard, running, driving a car and other activities which involve the anterior and posterior vestibular canals. Lateral Tonic Labrynthine Reflex is activated when flexing the head from side to side as is done in crawling, walking, most sports (sailing, baseball, skiing), and other activities that involve the horizontal vestibular canals.

There are several separate corrections related to TLR. One helps concentration when working over a desk and helps to stop slumping over the desk. Another helps the body to coordinate movement, allowing it to move more efficiently. It is rare to see a patient fail to beat their personal best after this correction has been performed. The range of problems associated with TLRs is great. A few follow.

Retained Tonic Labyrinthine Reflex can be associated with:

- A "floppy" child
- Difficulty or failure to cross-crawl; delayed and/or awkward walking
- Poor balance, possibly with vertigo
- Motion (car, sea) sickness
- Orientation and spatial difficulties
- Visual problems
- Difficulty judging space, distance, depth and speed
- Poor concentration
- Fatigue while reading (side to side) or working or studying at a desk (up and down)
- Bad posture when working over a desk
- Difficulty coordinating movement
- Sports performance below capability

Spinal Galant

In the newborn, stroking the low back on one side of the spine will result in side flexion of the lumbar (low back) spine away from that side, with raising of the hip on the same side. It appears to take an active role in the birth process, with movements of the hip helping the baby to work its way down the birth canal.

Stimulation down both sides of the spine simultaneously will activate a related reflex, which causes urination.

If the Spinal Galant reflex is retained it may be elicited at any time by light pressure on the low back region (as by a belt or waistband) causing uncontrollable spinal movement.

The stimulation of bedsheets may activate the related urination reflex, causing bedwetting long after toilet training.

Spinal Galant Reflex retention may lead to:

- Inability to sit still ("ants in the pants")
- Child who wriggles, squirms and constantly changes body position
- Attention and concentration problems
- Difficulty co-ordinating normal walking gait
- Bladder control, particularly night-time bedwetting.
- Can contribute to the development of scoliosis (curvature) of the spine
- Clumsiness while trying to manipulate objects
- May affect fluency and mobility in physical activities or sports

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This information sheet is an attempt by the authors to present some symptoms of retained neonatal reflexes. Although resourced from both literature and clinical experience, the paper remains the opinion of the authors at time of writing.

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