

Introduction

The primitive reflexes are a set of movement patterns in the newborn that emerge during the prenatal period. These primitive reflexes are present at birth and provide an indication of the neurological development of the newborn. The reflexes are movements that are automatic and do not require thinking.

The reflexes:

- Help in the birthing process.
- They help the newborn adjust to its new environment outside the womb.
- Help to build a foundation for motor and cognitive skills.

The reflexes involve changes in the level and distribution of tone which primarily can affect posture and movement. These reflexes along with postural control are basic developmental patterns. They are integrated and modified into the more complex patterns which lead to voluntary movement and skills. These are integrated by the higher centres of the brain.

Lack of integration of these primitive reflexes can lead to poor eye movements and poor fixation from far to near. In addition, one may have difficulty with visual coordination, hand-eye coordination and visual memory.

When an infant is delayed in the integration of these reflexes, developmentally appropriate treatment plans should be considered. Traditionally older children can self-direct themselves through treatment programs that will provide them with the opportunity to integrate the reflexes. Infants and developmentally delayed toddlers do not have the opportunity to follow these activities secondary to their lack of development.

Therefore, an integration program can be initiated that can include activities in which the caregiver or therapist can move the infant through the activities as needed. This can provide an opportunity for the infant to develop more appropriately and within the developmental sequence.

Retained Reflexes

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Description of the most common primitive retained reflexes

The Moro Reflex

The Moro Reflex is triggered by any sudden unexpected occurrence, such as a change in head posture, loud or unpleasant noises, change in light level or visual movement, change in temperature, pain or other tactile stimulation. These responses cause the release of adrenaline and cortisol, leading to increased breathing rate (hyperventilation), increased heart rate and can lead to an outburst of anger or tears.

Children with a retained Moro often suffer with motion sickness, tend to have poor balance and co-ordination and difficulty in fixing on one word within a text, tending to look at what is around in the word. They have poor pupil reflex and tire easily under fluorescent light. Sometimes they have difficulty with black text on white paper. They can be hypersensitive to certain sounds and find it hard to pick out information given verbally within a noisy environment.

These children tend to be hyperactive, have mood swings and dislike changes in routine, criticism is hard to accept because this means change and they often have low self esteem.

The Asymmetric Tonic Neck Reflex (ATNR)

Retention of this reflex leads to poor balance, particularly when turning the head from side to side. Problems crossing body midline. Poor eye pursuits, particularly across the midline. They have mixed laterality, poor handwriting and difficulty expressing ideas in written form. Handwriting varies across the page. As the head turns to follow the writing the ATNR causes the arm to extend and leads to the writing becoming larger. Poor visual motor integration problems link with this reflex. There are visual perceptual problems especially with symmetry.

The Symmetric Tonic Neck Reflex (STNR)

Retention of the STNR leads to poor posture generally and when sitting on the floor tend to do so in the W leg position. They tend to be clumsy and messy eaters. They have difficulty in changing from distance to near focus leading to problems copying off the board. They are slow at copying things down. There is difficulty with synchronised movements such as swimming and dancing. Sitting is often uncomfortable and they tend to continually shift position.

The Tonic Labyrinth Reflex (TLR)

Retention of TLR is reflected in poor posture – vestibular related problems affecting balance, co-ordination and causing tendency for motion sickness. Dislike of sports or PE. Oculomotor dysfunction, visual perception difficulties, spatial problems and difficulty with figure ground discrimination. Problems walking up or down open staircases, or a bridge where you can see the ground beneath. Some problems focusing from distance to near and therefore copying from the blackboard is a problem. Weak muscle tone and a poor sense of time. There is unusual muscle tone, either weak and hypotonus, or a stiff and jerky muscle, hypertonus muscles. These children dislike heights because of balance issues. They fatigue easily and in physical activities cannot hold their arms up for any length of time. Dislike of uneven surfaces to walk on.

The Spinal Galant Reflex (SGR)

Retention of SGR causes a fidgeting inability to sit still, constantly wriggling and changing position. There can be a link with bedwetting. These children have poor concentration and poor short term memory, often rotating on one or both hips when walking.

Final Notes

If the reflexes are tested and found to be persistent beyond the normal period, a reflex integration program can be started. This program involves specific repetitive movement patterns practiced five to ten minutes per day for a period of 4-6 months. In the infant and young developmentally delayed child, the patient must be moved through the pattern vs. self guiding themselves. The reflex movements are based on a thorough understanding of the primitive reflex sequence of development and normal child maturity.

It should also be noted that many of these reflexes can inhibit various activities in the older child and when treated appropriately may improve academic and other areas of function.

NB. This information should be read as a guideline only and should not be used for specific diagnosis.

What kind of Optometrist do I need?

The Optometrist you need to visit is a professional interested in helping patients improve the functioning of their entire visual system. These specialists, spend years in post-graduate education learning how to best help their patients achieve their goals.

Not all Optometrists choose to become involved in providing extensive visual skill assessments. To help you make sure that your Optometrist is someone who promotes vision care, directed at your whole visual process, you may want to discuss the following questions with them or their reception staff:

- Do you provide school or work-related visual perception tests?
- Do you provide a full series of near point vision tests?
- Do you provide full vision care and vision therapy in your practice or, will you refer me to someone else if necessary?
- Will you see me again to determine my progress?

With this information, you can then feel confident that your vision needs will be addressed by your Behavioural Optometrist.