The Tonic Labyrinthine Reflex

The tonic labyrinthine reflex (TLR) is closely linked to the Moro reflex in the first months of life. It is present in utero when the fetus' head is forward of the spine and all limbs pull in to create what we call the 'fetal position'. This is the closed phase of the TLR.

At birth comes a new challenge of reaching out and down the birth canal, and the head tips back in an arch to lead and facilitate the journey down and subsequent exiting of the birth canal. This triggers the extension phase of the TLR, in which limbs want to open with the extended neck. The closed phase of the TLR is also called 'flexus habitus'. The extension position is sometimes most easily seen in the infant when in the Superman position, lying on its tummy. This is the open phase of TLR.

The presence of the TLR past the newborn stage, about four months of age is also referred to as abnormal extension pattern or extensor tone.

The purpose of the TLR: The reflex helps the infant open the spine up from its curved fetal shape.

Integration of the TLR: The activities and patterns used in NDM, discussed below, as part of the fetal and post-natal sequence of patterns, facilitate the natural integration of the TLR.

Importance of integrating the TLR: A child who has not integrated the TLR may not walk with an appropriate set of the head on the spine, and easily become unbalanced, not fully asserting their weight into the earth and appropriately accommodating gravity. It is critical that the child know how they relate to gravity, orientation of their body in space, and directionality, as these are confidence-building body skills that contribute to good balance and appropriate muscle tone.

As well, our visual skills are dependent upon the head sitting properly on the spine, so even our vision will be improved once the TLR is integrated. As the TLR integrates, the infant will have more discreet control over the arms and legs, moving them independently.

Some of the symptoms associated with an unintegrated TLR include a list of issues that could be caused by any number of other challenges in the client's profile. Here is a list of symptoms commonly associated with TLR but note that *they are not diagnostic for the tonic labyrinthine reflex.*

- Poor posture
- 'W'-sitting
- Weak muscles
- Decreased balance
- Poor ocular motor skills
- Visual perceptual challenges
- Auditory processing difficulties
- Poor organization skills
- Poor sense of space and time

- Poor sequencing ability
- Spatial awareness difficulties
- Dyslexia, dyscalculia and/or dysgraphia

A deep consideration of the broad range of symptoms associated with this one reflex encourages us, as practitioners, to become much more discriminating and clear in our NDM assessments to sort or tease out the source of the above specific symptoms, since any combination of a wide range of NDM challenges may be to blame in part or in combination with other specific gaps in development.

As with all reflexes, the TLR will integrate as a consequence of going through the natural developmental sequence and does not need to be integrated separately from the other work done in an NDM program.

Reflex integration systems that do not take into account the whole Developmental Sequence suggest these activities to integrate the TLR:

- "A wide range of sensory activities"
- Tummy time to integrate the TLR
- Playing in front of a mirror
- Lying on their tummy on a therapy ball (facilitated)

And while all of these suggestions are lovely, they sidestep, with the exception of tummy-time, the activities of the developmental sequence. NeuroDevelopmental Movement can provide the specific activities that will develop and integrate this reflex in the way that nature intended, through this developmental sequence. And as postural reflexes take over, the child has five limbs (arms, legs, and head) that can all move independent of this primitive reflex's demands.

Activities that develop and integrate the TLR from the developmental sequence include:

- Lead by the eyes, the **Frog Pattern** opens the upper body in a foreshadowing of the open TLR

- **Truncal Movements**, (also known as birth patterns) begin the expression of the extension form of the TLR as the infant prepares for birth. **Truncal Movements on the Side** bring the child first into the closed form of the TLR (flexus habitus) and then into a huge opening of the body as the head leads into a whole-body extension - the open form of TLR.

- As we do the **English 5 Patterns**, which are post-natal patterns, the fourth or the **Arch** helps disconnect the lifting of the head from the extension of the legs.

- **English 5 Pattern** #5, the **Push/Pull** works to disconnect the automatic contraction of limbs as the head tilts forward, and the extension of the limbs when head tips back, by tipping the head forward while extending the legs, and pulling the head back while pulling the knees to the chest.

- **Crawling** further establishes that the legs are most functional when they are down, and bend at the knee to push against the toes into the floor, with the toes in the flexed position, even when the head is tilted up past the center line of the spine. All of this movement breaks up the commands of the TLR.

  The human body, through the developmental sequence, aims for a grounded, supportive lower body that frees the upper body for creation, expression, and relationship. When upper and lower bodies are not each doing their neurodevelopmentally assigned task, the upper can become rigid, expression can be restricted, and a sense of powerlessness ensues, as the lower body gives up its role as the grounding, supportive mechanism of the system.

No other species is created in this way, with a whole body aspect devoted to higher expression, relationship, and cognition, which is why human development is so specialized. All reflexes lead to the full development of a 'bodymind' that can reach its greatest potential.

I would like to make the argument that the unfocused 'tummy time' suggestions of traditional therapeutic approaches to the TLR integration do not fully address the specific triggers that are already provided by nature in the developmental sequence to integrate this potentially challenging primitive reflex.