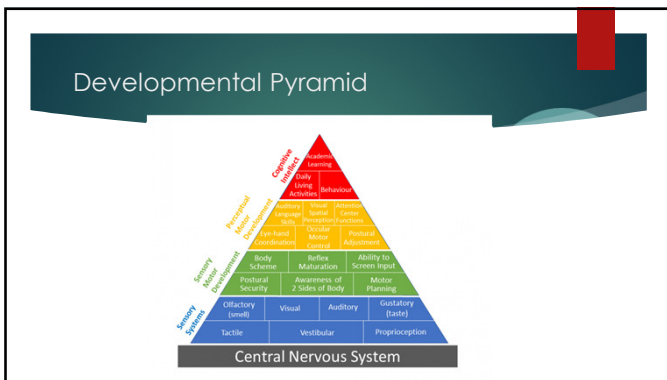


How vision and reflexes can affect your riders!

THERE'S MORE THAN MEETS THE EYES!!
 VALERIE STEVENSON, OTR/L KATIE HAVELKA, COTA/L, CTRI



Possible Signs of Unintegrated Reflexes

- ▶ Poor attention
- ▶ Poor sitting posture
- ▶ Immature grasp on writing utensils
- ▶ Asymmetrical movement patterns
- ▶ Poor balance and coordination such as difficulty riding a bike
- ▶ Learning difficulties challenges with emotional regulation
- ▶ Sensitivity to sensory input (light, sound, touch sensitivities)

ATNR (Asymmetrical Tonic Neck Reflex)

- ▶ The ATNR is a primitive reflex found in newborns and is necessary for survival. It is also known as the "fencing reflex" because of the position of the newborn's arms and head.
- ▶ The retention of the ATNR is the single most likely reflex to cause reading challenges. The ATNR is crucial for visual and auditory development.

At what age does this reflex typically mature?

- Begins 18 weeks after conception and matures at ~ 4 - 6 months



Why is this reflex important?

- ▶ The ATNR triggers kicking movements in the uterus, assists in the delivery process, hand to mouth, maintaining grasp, crawling, communication of the left and right hemisphere of the brain (crossing midline with the eyes, hands, feet), speeds up transmission of signals in the brain for reading, helps eye movement control/cooperation of the eyes for depth perception, improves writing and written expression by stimulating nerve connections.

If this reflex is present past 6 months, it may impact your child's ability to:

- ▶ Cross midline which is important for fine motor skills, reading and writing
- ▶ Learn to ride a bicycle (balance)
- ▶ Decide on hand dominance
- ▶ Common in Dyslexia, ADHD, C-section deliveries

Ways to integrate ANTR reflex using the horse

- ▶ 4 point on the horse
- ▶ Crossing m-line activities (ie., rings, jousting)
- ▶ Zombie walking: arms extended with head turn.
- ▶ Prone over the barrel head turn toward front and toward the back of the horse



STNR (Symmetric Tonic Neck Reflex) reflex

- ▶ The STNR is important for the infant to be able to get up on hands and knees to start crawling. Two important components include:
 1. When the head is tilted backward, the arms extend and legs flex.
 2. When the Head bends forward, the arms flex and legs extend.
 To crawl well, the arms and legs should not be dependent on the position of the head.
- ▶ The STNR is a transitional reflex and should have a short life span

At what age does this reflex typically mature?

- ▶ Develops at about 6-9 months, and integrates between 9-11 months



Why is this reflex important?

- ▶ The STNR helps further integrate TLR by: strengthening muscle tone of the back of the neck and back, developing proper posture, and developing upper arm and body strength. It is also important in training vision, especially accommodation.

If this reflex is present past 11 months, your child may:

- ▶ Slide on his/her bottom to move around vs crawling
- ▶ Skips crawling stage and goes from sitting stage to standing on 2 legs and walking leading to:
 - ▶ Poor body posture, slumps when reading, difficulty maintaining upright position while writing, "W" sits or wraps legs around chair when sitting, and poor accommodation (focusing near to far)
- ▶ Upper extremity weakness (poor brachiating movement, and difficulty climbing monkey bars, doing pushups, and somersaults)

Ways to Integrate STNR reflex using the horse

- Hold a ring in front you, arms extended and pretend to it's a steering wheel. Look up to the ceiling and have a visual card on the main.
- 4 point on the horse with visual cues to look up and toward your belly button
- Tacking the horse, putting blanket on and taking it off



Positions prompted by STNR

TLR Tonic Labyrinthine Reflex

- ▶ The TLR helps the infant develop equal tone in bending and straightening the body, gives early primitive reaction to gravity, allows infant to know where their body is in space (proprioception) and develops vestibular/balance systems.

At what age does this reflex typically mature?

- ▶ Forward 12 weeks after conception; fully developed by 3-4 months after delivery and will stay around until the age of 3 to help the child integrate the vestibular and proprioceptive senses and learn stability in an upright position



Why is this reflex important?

- ▶ This reflex helps develop the whole body movement system, helps to develop visual focusing and visual tracking.
- ▶ Helps the child adapt to new gravitational conditions
- ▶ Develop muscle tone and proprioception
- ▶ Practice balance

If this reflex is present past 9 months, it may impact your child in the following ways:

- ▶ Low muscle tone with over-flexible joints
- ▶ Tense muscles with a tendency to toe walk
- ▶ Difficulty judging space, distance, depth perception and speed
- ▶ Coordination/balance/walking up or down stairs
- ▶ Eye muscles do not work efficiently impacting attention/focus as well as reading skill such as keeping place on the page thus impacting reading comprehension

Ways to integrate TLR using the horse

- ▶ Hit a suspended ball with a pool noodle.
- ▶ Grooming with the brush held with both hands from the top of the shoulder and bringing it down to the knee.
- ▶ Off the horse: balloon taps, beach ball taps.

MORO

- ▶ It is our 'startle response' and excites our system. It is triggered by a strong/unpleasant stimulation of the balance, auditory, visual, tactile, or proprioceptive sense. When the MORO is activated, the defense mechanisms of the body are alerted. The stress hormones, epinephrine (adrenaline) and cortisol are secreted at this time.

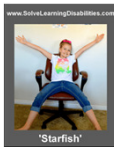
At what age does this reflex typically mature?

- ▶ 4 months



Ways to integrate Moro using the horse

- ▶ "Starfish love: arms out, chest open and then make an x across your body.
- ▶ Grab 2 pop beads extended and then bring them together at midline to put together
- ▶ Off the horse: Lying on your back lift your pelvis to do a bridge with your hand touching at midline.



Questions and Comments