



Symmetrical Tonic Neck Reflex (STNR)

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- The STNR is directly related to the TLR because the STNR assists the infant with moving from prone (laying on belly) into quad (on all 4s pre crawling position), it additionally assists with integrating the TLR.
- The STNR develops between 6-9 months after birth.

The STNR should be integrated - not present - by 9-11 months of age (a very short life span compared to some of the other Primitive Reflexes).

Symmetrical Tonic Neck (STNR)





The Symmetrical Tonic Neck Reflex (STNR) appears approximately 6-9 months after birth.

It is typically inhibited / integrated by 9-11 months after birth.

There are two components to the **STRN**:

- •Flexion while in a quadruped position (on hands and knees), flexion of the head results in flexion of the arms and simultaneous extension of the legs.
- •Extension while in a quadruped position (on hands and knees), extension of the head results in extension of the arms and simultaneous flexion of the legs.



Why is it important?



- The STNR is a contributing factor in many different areas of development.
 - •Assists with moving from prone into quadruped (tummy time to crawling).
 - •Assists with inhibiting / integrating the **TLR**.
 - •Divides the body in half lower body vs. upper body, therefore assisting with *bilateral coordination*.
 - •Assists with training the eyes to move from near to far distances, thus assisting in the development of *ocular motor skills*.
 - •To align the pelvic and occipital (back of the head) regions of the spine in preparation for the upright stance;

- If the STNR is retained (meaning, it does not integrate, or go away, naturally), some signs / symptoms may look like:
 - المينارة •Refusal to crawl on hands and knees, resulting in a "funky crawl" or skipping the crawling phase entirely.
 - •Dislike of playing on the floor during infancy (before 1 year of age).
 - Unusual crawling movements, such as hands rotating, locked elbows, poor fludity, etc.
 - Challenges with visual tracking.
 - Stooped posture (slouching).
 - •Clumsy.
 - Dislike of sports.
 - Messy eater.
 - Tendency to w-sit.
 - Challenges with reading and writing.

Difficulty learning to swim.

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Symmetrical Tonic Neck (STNR)





Research has shown that a high percentage

of children with reading

difficulties actually skipped the creeping and

crawling stages of development.

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OBSERVE THE PRESNTER.



• Climical Observations:

- 1. Integrating top/bottom
- 2. Shifting weight from top to bottom
- 3. Unable to assume 4-point with equal weight bearing in equal extremities
- 4. Difficulties with vergent eye movements (convergence and divergence)
- 5. Ball skills





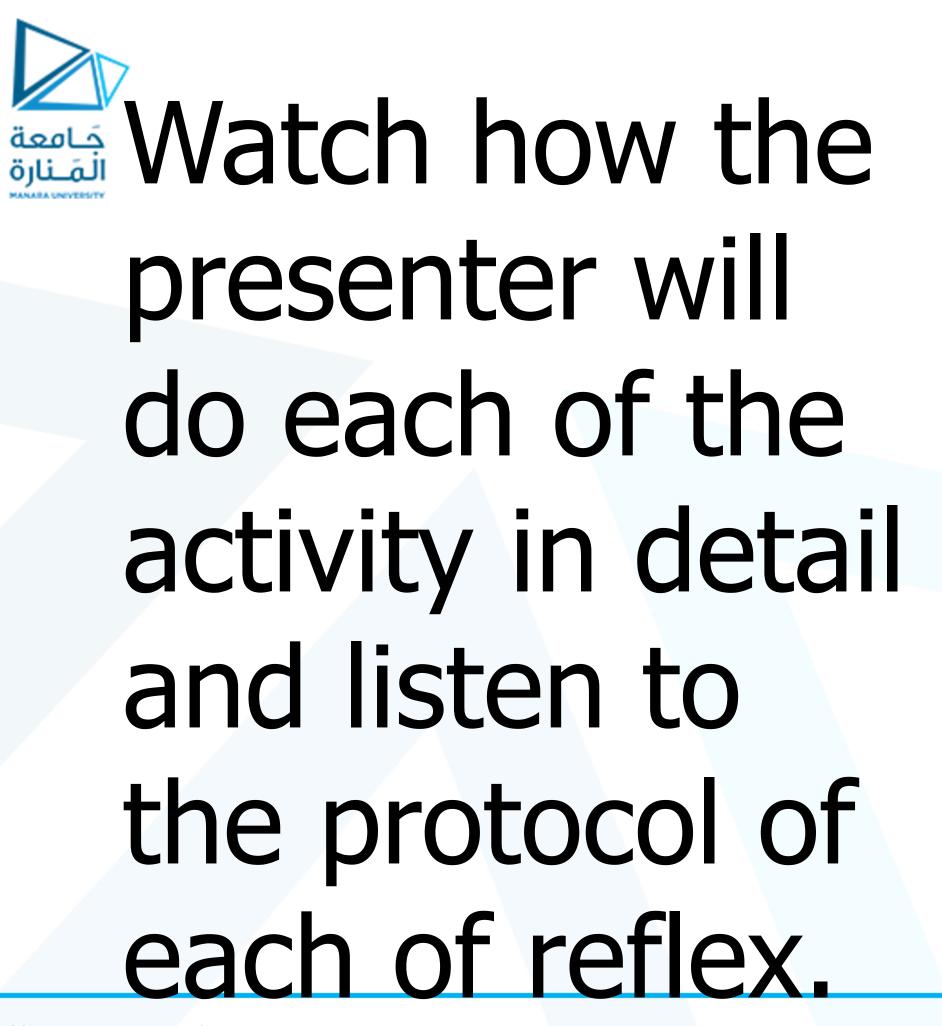
Some activities:

Balance and toss
Kneeling scooter board surfing
Bear walk soccer drill
Beanbages in a bucket











Asymmetrical Tonic Neck Reflex (ATNR)



The Asymmetrical Tonic Neck Reflex (ATNR) appears inuteropat approximately 18 weeks after conception. It is typically inhibited / integrated by approximately 6 months of life.

The **ATNR** facilitates in-utero kicking as well as contributes to muscle tone development, vestibular stimulation (therefore creating balance and neural connections), and plays an active role in delivery.

- During the birthing process, a fully developed ATNR will allow the infant to "unscrew" down the birth canal in rhythm with the mother's contractions.
- Therefore, it is believed that an infant born with the use of forceps or via C-section may be a high risk for delays (as well as delays in integrating the ATNR).







- •Movement of the head side-to-side.
- When triggered, the ATNR produces a physical reaction:
 - •Extension of the arm and leg on the side that the head was turned.
 - ·Flexion of the opposite arm and leg.
 - ·"Fencing position."



Why is it important?





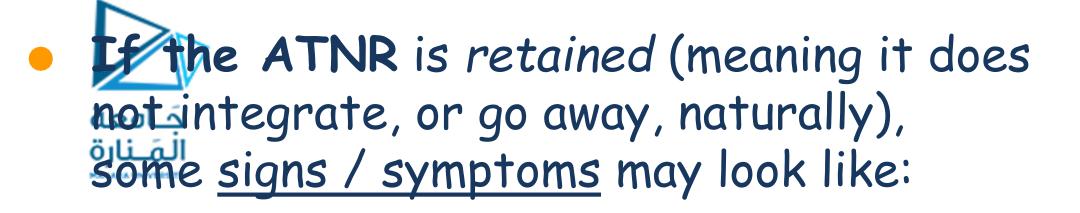
• These physical reactions contribute/important to:

- •Development of muscle tone, particularly extensor tone.
- •Training one side of the body at a time the basis for reaching movements later in life.
- ·Hand-eye coordination.
- •It is also believed that the ATNR may contribute to the infant's ability to turn the head to get a breath of air while prone (tummy time).

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- ·Challenges with creeping and crawling.
- ·Poor balance when learning to walk.
- •Challenges crossing midline potential for one-side neglect as well as potential for not establishing a hand dominance.
- ·Challenges with reading and handwriting.
- ·Poor grasp development.

· Decreased success with multi-tasking.







OBSERVE THE PRESNTER.





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• Climical Observations:

- 1. Midline jump- oculomotor screening
- 2. Stress at midline with turning the head
- 3. Balance activities, more extension on the stable side and flexion on the unweighted side
- 4. Asymmetry with extremities when unstable







In addition to completing the Lizard exercise, there are a variety of other activities / exercises that will assist with integration of the ATNR.

Crawling with head turns

Tall kneel (or walking) mummy walk with head turns

Hands-and-knees position - head turns to read visual charts





