Signs of Retained Primitive Reflexes in Everyday Skills

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Understanding when reflexes typically integrate can help caregivers and professionals recognize when something may be off-track. Learn more about the most common signs of retained reflexes and what that might look like in a child.

Understanding Reflex Integration Timelines

Primitive reflexes appear early in development and are expected to integrate—or fade away—within a specific time frame. Integration means the reflex has served its purpose and is no longer automatically triggered, allowing for more mature, voluntary movements to take over.

If these reflexes don't integrate on time, children may show signs of difficulty with physical coordination, emotional regulation, attention, sensory processing, or academic performance.

Here is a general guide to when some of the major reflexes should typically integrate in neurotypical development:

- **Moro Reflex**: Integrates by 4–6 months
- **Palmar Grasp Reflex**: Integrates by 2–6 months
- **Asymmetrical Tonic Neck Reflex (ATNR)**: Integrates by around 6 months
- **Spinal Galant Reflex**: Integrates by 3–9 months
- **Symmetrical Tonic Neck Reflex (STNR)**: Integrates by 9–11 months
- **Landau Reflex**: Integrates by around 12 months
- **Tonic Labyrinthine Reflex (TLR)**: Integrates by around 3 years

Delayed integration of these reflexes may be associated with a variety of challenges in posture, coordination, attention, communication, or learning. Observing how a child performs daily functional tasks can offer clues as to whether some of these reflexes may still be present.

A Note on Interpretation on Retained Primitive Reflexes

It's important to understand that the signs listed here are not definitive proof of retained reflexes, nor do they establish a direct cause-and-effect relationship. Many of these behaviors and challenges can be influenced by a variety of developmental, neurological, or environmental factors. While retained primitive reflexes are often observed in children with these characteristics, more research is needed to fully understand how these reflexes are

associated with conditions like ADHD, sensory processing challenges, learning disabilities, and emotional regulation difficulties. These signs are meant to serve as potential clues that may warrant further observation or evaluation by a qualified professional such as your pediatrician, occupational therapist or physical therapist.

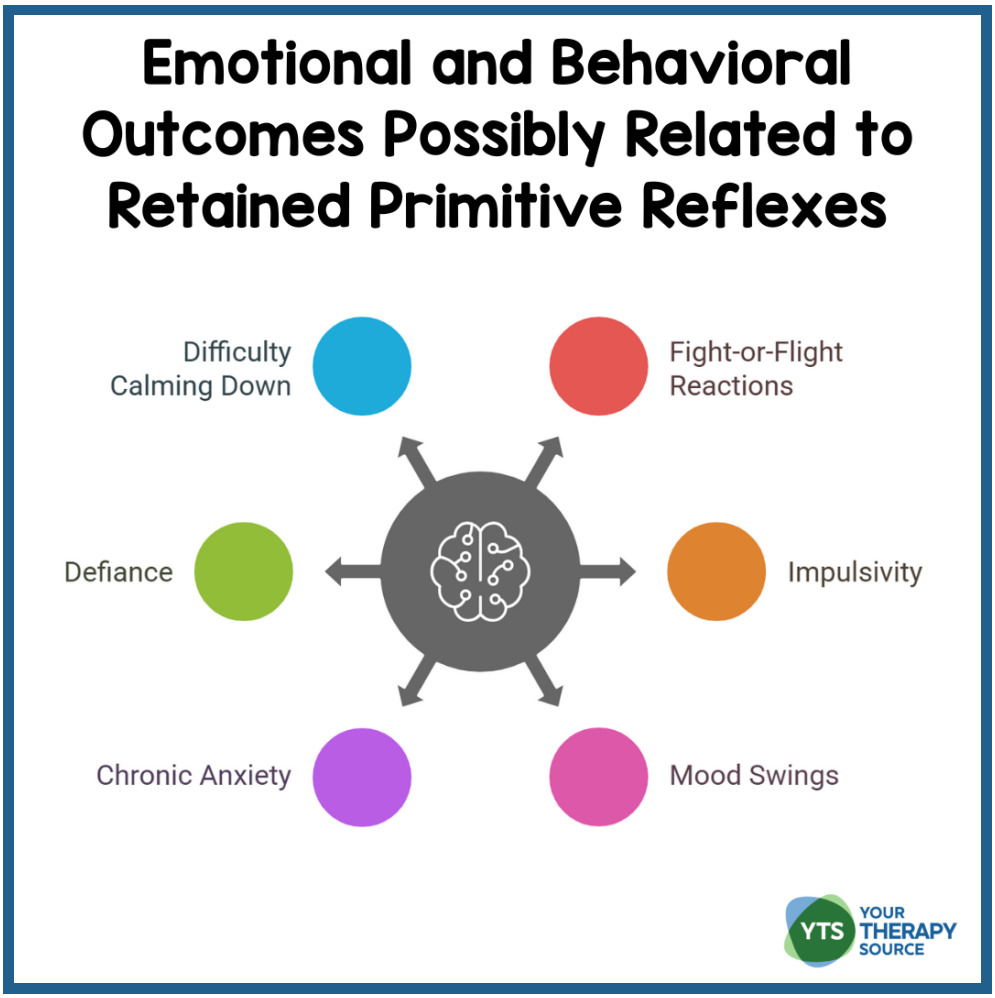
Behavior and Emotional Regulation Challenges

These signs may be connected to retained reflexes that interfere with the body's ability to manage stress, regulate emotions, and respond appropriately to change.

Common Observations:

- Fight-or-flight reactions to minor stressors
- Impulsivity or difficulty with self-control
- Mood swings or emotional overreactions
- Anxiety, chronic fear, or phobias
- Defiance or quick temper when routines change
- Trouble calming down after being upset

Possible Reflex Connection:
The Moro reflex, also known as the startle reflex, should integrate by 4–6 months of age. If retained, it can leave a child's nervous system in a constant state of alertness—leading to emotional reactivity, sensory overload, and poor stress tolerance.



Retained Primitive Reflexes, Motor Skills, and Postural Control Difficulties

These signs may relate to reflexes that impact the development of balance, muscle tone, core stability, and coordination.

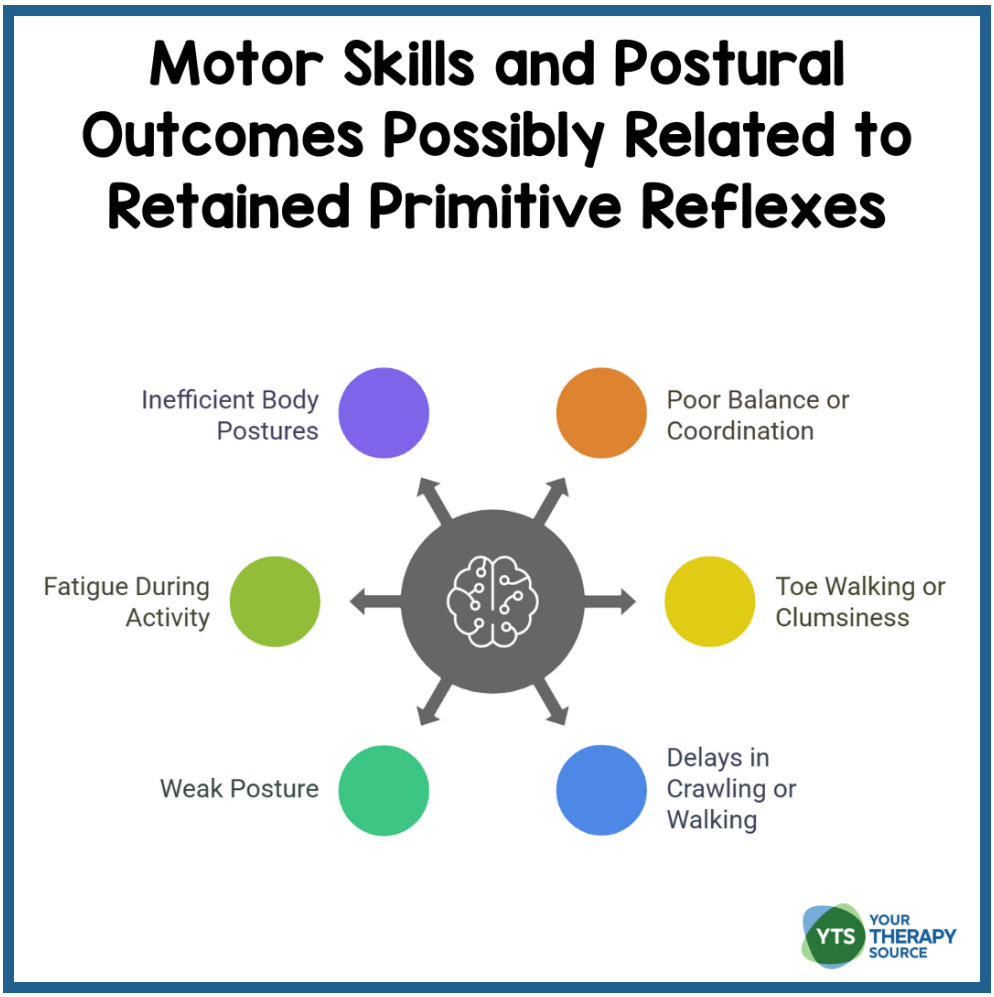
Common Observations:

- Poor balance or coordination
- Toe walking or clumsiness
- Delays in crawling, walking, or skipping
- Weak posture or slumping when seated
- Fatigue during physical activity
- W-sitting or unusual body postures during play

Possible Reflex Connection:

- The Tonic Labyrinthine Reflex (TLR) helps develop head and posture control. When retained, it may result in low muscle tone, difficulty sitting upright, or toe walking.

- The STNR (Symmetrical Tonic Neck Reflex) supports crawling and postural transitions. If retained, it can make sitting still or maintaining posture difficult, especially in the classroom.
- The Spinal Galant Reflex, involved in spinal mobility, may contribute to fidgeting, poor posture, or coordination issues if not integrated.



Visual-Motor and Academic Struggles

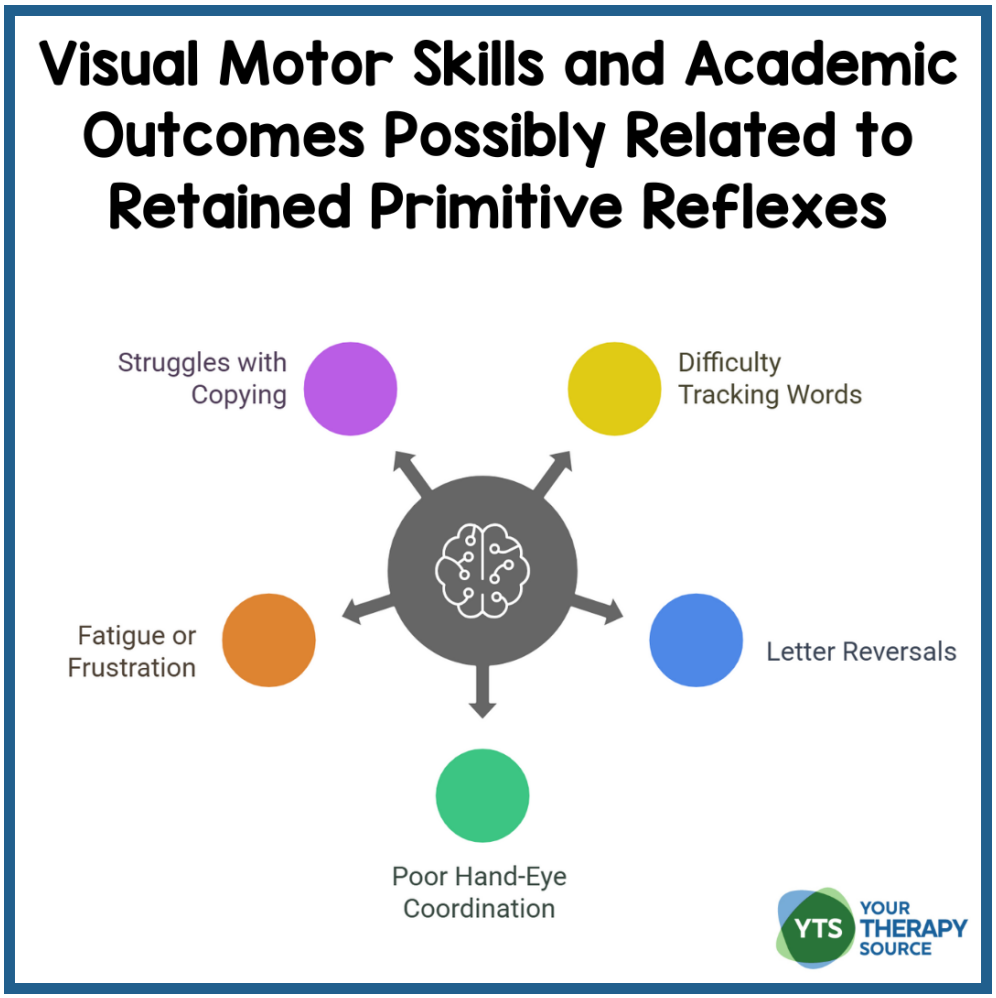
These signs may reflect retained reflexes that affect hand-eye coordination, visual tracking, and fine motor control.

Common Observations:

- Difficulty tracking words while reading
- Letter reversals or inconsistent spacing when writing
- Poor hand-eye coordination
- Fatigue or frustration during fine motor tasks
- Struggles with copying from the board or staying on the line

Possible Reflex Connection:

- The ATNR (Asymmetrical Tonic Neck Reflex) links head movement to arm extension and should integrate by 6 months. If retained, it may interfere with writing, midline crossing, and visual tracking.
- The Palmar Reflex affects grasping and fine motor development. Its retention may lead to a hand fatigue, poor handwriting, or motor overflow.



Inability to Cross the Midline

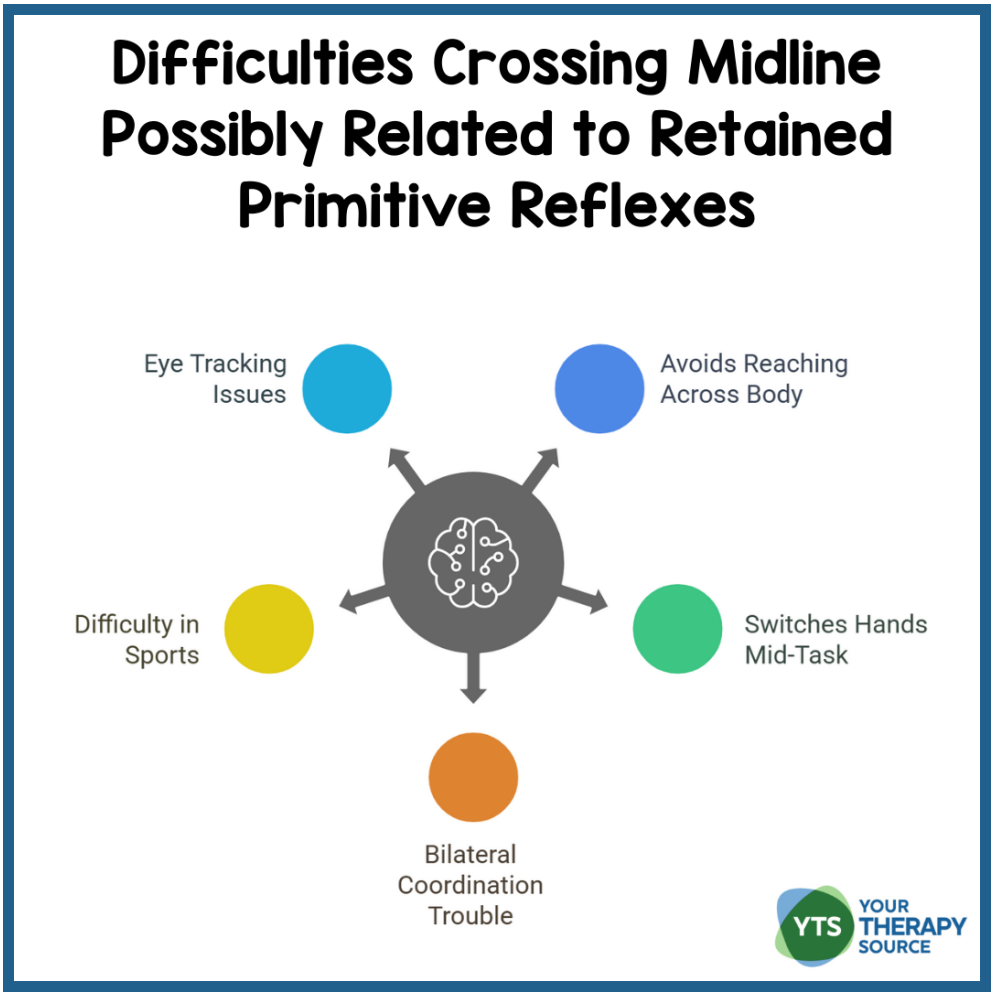
These signs occur when reflexes limit a child's ability to coordinate both sides of the body and brain during movement or fine motor tasks.

Common Observations:

- Avoids reaching across the body
- Switches hands mid-task when writing or drawing
- Trouble with bilateral coordination (e.g., tying shoes, cutting, jumping jacks, etc)
- Difficulty in sports or rhythm games involving cross-body motion
- Trouble with smooth eye tracking from left to right

Possible Reflex Connection:

- A retained ATNR often contributes to midline crossing challenges.
- Unintegrated TLR and STNR can further interfere with the ability to twist or rotate the body smoothly—required for cross-lateral movement and coordination.



Auditory and Communication Clues

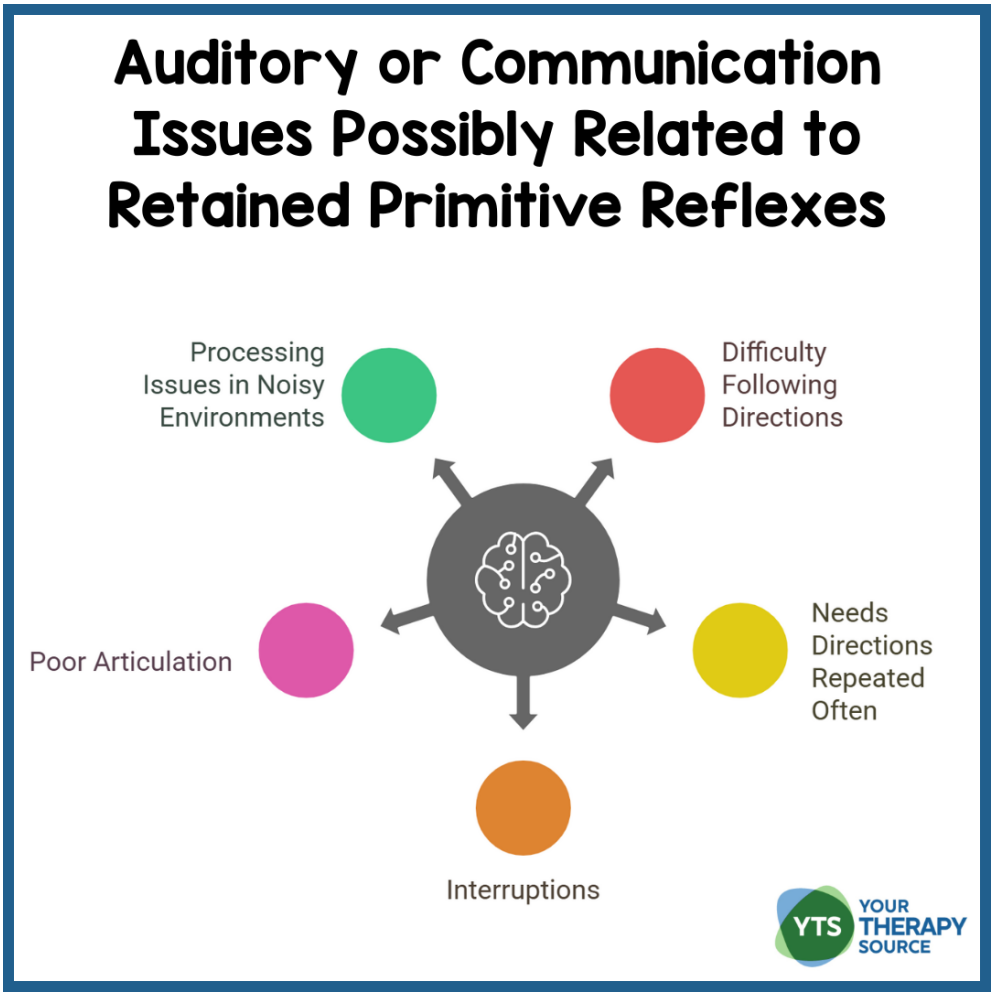
These signs may indicate retained reflexes that impact how a child listens, processes spoken language, and produces speech.

Common Observations:

- Difficulty following multi-step directions
- Frequently needing directions repeated or saying “What?”
- Blurting out answers or interrupting
- Poor articulation or mumbling
- Trouble hearing or processing in noisy environments

Possible Reflex Connection:

- The Moro reflex may contribute to auditory hypersensitivity, making it hard for a child to focus on speech with background noise.
- The Palmar reflex, due to its connection between the hand and mouth areas in the brain, may impact oral-motor coordination and speech production.



Retained Primitive Reflexes and Sensory Sensitivities

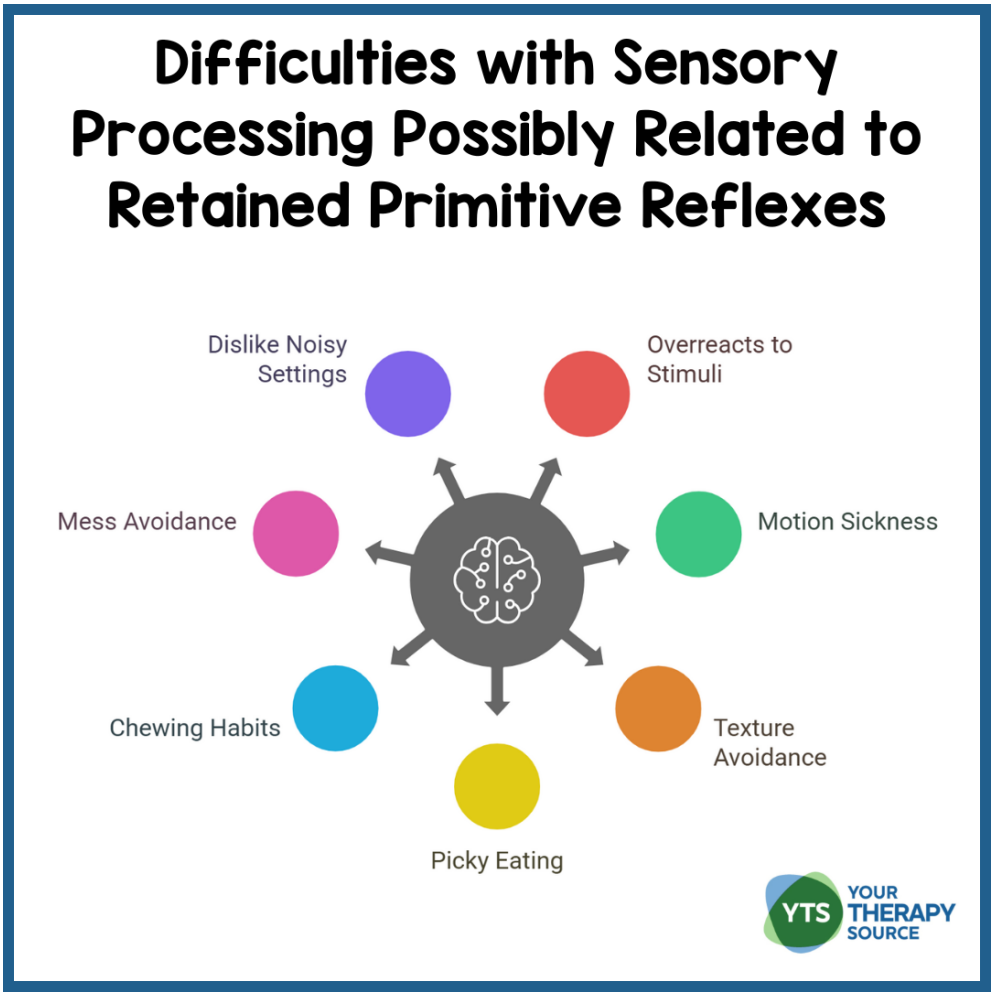
These signs may reflect retained reflexes that over-activate the sensory system or reduce a child's ability to self-regulate sensory input.

Common Observations:

- Overreacts to lights, sounds, or touch
- Avoids certain textures or clothing
- Picky eating or gagging with certain foods
- Chews on clothing, pencils, or toys
- Avoids messy play
- Dislikes noisy or overstimulating settings

Possible Reflex Connection:

- The Moro reflex may heighten reactivity to sensory input, creating hypersensitivities across all senses.
- The Fear Paralysis Reflex, present in utero, may also relate to shutdown responses in highly stimulating environments if not integrated.



Motion Sensitivity and Discomfort During Movement

These signs may occur when retained reflexes interfere with the brain's ability to process motion and maintain balance through the vestibular system.

Common Observations:

- Complaints of nausea or dizziness during car rides
- Discomfort or avoidance of swings, spinning, or elevators
- Fear of falling or hesitancy on stairs and escalators
- Motion sickness when reading in a moving vehicle
- Overreacting to sudden movement or changes in position
- Movement-based play is avoided or causes emotional distress

Possible Reflex Connection:

- The Tonic Labyrinthine Reflex (TLR) plays a role in how the body responds to changes in head position and gravitational input. If not integrated, it may disrupt vestibular function, making a child more prone to motion sickness or balance challenges.
- A retained Moro Reflex may heighten sensitivity to movement and sudden changes, contributing to vestibular discomfort and overactive fight-or-flight responses when the body is in motion.

Motion-related sensitivities, especially when combined with other physical or emotional signs, may point to reflexes that are still influencing the nervous system. Reflex integration work may help support better tolerance for movement and reduce motion sickness over time.

Examples of Reflex Integration Exercises

Reflex integration exercises aim to mimic early movement patterns that help the brain and body work together more efficiently. These movements can support the integration of retained reflexes and improve everyday functioning. Be sure to discuss these exercises with a professional to determine what is best for each individual. Here are a few examples commonly used by occupational or physical therapists:

Moro Reflex

Starfish Exercise: Open arms and legs into a big “X” while lying or sitting, then cross them over the body. Alternate sides.

ATNR

Lizard Crawls: On the belly, turn head to one side while bending the elbow and knee on that side. Alternate sides rhythmically.

STNR

Cat-Cow Stretch: While on hands and knees, alternate between arching and rounding the back with head movements.

TLR

- **Superman Pose**: Lie on stomach and lift arms and legs off the ground.
- **Log Rolls**: Roll across the floor with arms extended overhead.

Palmar Reflex

- **Finger Squeezes**: Use thumb and individual fingers to squeeze small objects like therapy putty or stress balls.
- **Bead stringing and tweezing**: Strengthens fine motor skills while separating finger movements.

Crossing the Midline

- **Windmill Arms**: Touch opposite hand to opposite foot in a standing position.
- **Figure 8 Tracing**: Use a large vertical surface to trace sideways figure eights with both hands.

For best results, these exercises should be practiced consistently under the guidance of a trained professional who can assess which reflexes are present and what movements will be most helpful.

Additional Resources for Retained Primitive Reflexes

To learn more about reflex integration or begin supporting a child with movement-based strategies, visit:

- Reflex Integration in Children
- Brain and Sensory Foundations Course
- Developmental Movement Adventures – Activities for Integration

5 Key Points About Retained Primitive Reflexes

- **Primitive reflexes are essential—but temporary.**
  Primitive reflexes help infants survive and develop during early life. As the nervous system matures, these automatic movements are meant to integrate and make way for more voluntary, purposeful actions.
- **When reflexes are retained, functional skills may be affected.**
  If primitive reflexes do not integrate as expected, children may experience challenges with balance, posture, coordination, attention, emotional regulation, or sensory processing. These difficulties often show up in everyday tasks like handwriting, sitting still, or coping with transitions.
- **Retained reflexes may be linked to common concerns.**
  While not a diagnosis themselves, retained reflexes are frequently seen in children with ADHD, sensory processing differences, learning difficulties, and developmental delays. They may contribute to motion sickness, poor handwriting, difficulty crossing midline, or heightened stress responses.
- **Reflex integration exercises can help.**
  Targeted movement-based activities can support the integration of retained reflexes. These exercises often mimic early developmental patterns such as crawling, rolling, or bilateral coordination, and may improve how the brain and body communicate.

- **Seek guidance from trained professionals.**
  If you suspect retained reflexes may be affecting a child's development, consult with an occupational therapist or physical therapist experienced in reflex integration. You can also explore continuing education options or take courses designed to support reflex-based movement interventions.