

Primitive Reflexes in Babies and Exercises to Do When Things Go Wrong

[Sonja](#) Jul 17, 2023 3:02 PM EDT



This article looks at the link between a multitude of developmental issues and primitive reflexes.

[Jason - Asymmetrical tonic neck reflex](#)

Link Between a Baby's Reflexes and Developmental Issues Later in Life

Is your child hypersensitive? Do they struggle with balance and coordination or have problems walking or running? Are they finding handwriting really hard or have they been diagnosed with dyslexia? Do they have problems seeing or hearing or are they prone to stuttering or slurring their speech? Are they aggressive or depressed? Suffering from allergies or asthma? Still bedwetting? Have you observed a side-bending curve developing in their spine? And finally,

have they been diagnosed with ADHD or autism?

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Surprisingly, many developmental problems may be linked to primitive reflexes that were not integrated at the time they were meant to be integrated. Some of the simple exercises below can sometimes help to integrate these reflexes and often make a remarkable difference in a child's (or sometimes even an adult's) life.

Note, however, that the persistence of primitive reflexes [has been demonstrated in completely healthy adults](#), and that the [clinical validity of reflex integration programmes remains disputed](#). Also, the problems mentioned above can be due to many other causes that should be evaluated by a physician before you resort to these exercises.

This article explains what primitive reflexes are, their role in development, what can potentially happen if they are not properly integrated, and what can potentially be done about that.

Consult With a Physician

Note that the problems mentioned above can be due to many other causes that should be evaluated by a physician before you begin practicing the exercises discussed here.

"Primitive Reflexes" in Babies

Most people associate the word "reflex" with that little hammer their doctor uses to tap just under their kneecaps. Reflexes are actions that are performed without conscious thought as a response to a stimulus. They can help protect the body.

For example, if you put your hand on a hot stove, a reflex causes you to immediately remove your hand before a "This is hot!" message even gets to your brain. Other reflexes help your body stay balanced, allow the optimal amount of light into your eyes, and help with many other functions.

Babies have a particular set of reflexes called "primitive reflexes." These allow babies to respond to stimulation from their environment before any learning has taken place, and they prepare their little bodies for further development.

[Babies are born with these reflexes](#), and they come with a natural "expiration date." If everything goes well, these reflexes get integrated over time. This means that they are still there in principle, but you no longer observe them in action because they get suppressed by impulses coming from the brain. The brain does this because it thinks that it is no longer advantageous to express reflexes because the baby has practised the movements sufficiently and is now able to control them.

Cases of Retained Primitive Reflexes

But sometimes things go wrong, and the reflexes are not fully integrated. There are multiple reasons for this.

- It can be due to stress experienced by the mother during pregnancy
- A difficult birth
- Lack of proper movement in infancy
- Illness
- Trauma or injury
- Chronic stress
- Toxins of any kind
- There are also cases in which reflexes that were inhibited and fully integrated in infancy are later reactivated because of trauma, injury, toxins or stress.

In cases of severe brain damage, all reflexes might be affected. But, in other cases, it may only concern one particular reflex, and the effects can range from

mild to severe.

This article looks at some of those baby reflexes, explains why they are thought to be there, what can potentially happen if they are not properly integrated and what can potentially be done about that.

How to Use the Videos

The exercise videos included here are intended for self-help in cases where you think your child may have retained primitive reflexes and a physician has excluded other potential reasons for the problems you are observing. The exercises are perfectly safe to do for anyone, so it is worth giving them a try.

If you decide to try them, it is recommended to limit it to one exercise at a time, and do about three sets daily for about 30 days. If you would like to look at multiple issues, it is advisable to go through the exercises in the order they are presented here.

For instance, if you want to work with both the Moro and the Spinal Galant, work on Moro for 30 days first before continuing to the Spinal Galant. Sometimes, issues related to reflexes further down the list clear up by themselves once issues related to reflexes further up the list have been addressed.

In more severe cases, however, it is recommended to consult a professional who can properly diagnose the underlying problems and design a step-by-step treatment plan. Well-known organizations for reflex integration are the Institute for Neuro-Physiological Psychology (INPP), which is present in many countries, including the [USA](#) and the [UK](#) and the Svetlana Masgutova Educational Institute with its MNRI method.

The Moro or Startle Reflex

The Moro reflex is the first primitive reaction to fright. It is kind of like an emergency switch for a fight-or-flight reaction. It proves useful because anything unusual will cause whole-body movement and crying, which would alert the attention of a caregiver.

This reflex is triggered by unexpected situations, such as an unexpected change in position or an unexpected visual, auditory or tactile stimulus (e.g. light, noise, a sudden change of temperature or rough touch).

Normal Development of the Moro Reflex

- In phase one, the arms and legs flare out to the sides, the hands open, the neck extends, the body freezes and the mouth opens, followed by an in-breath.
- In phase two, the arms and legs are brought back together to the midline with the arms and legs crossing so the baby goes back to a foetal position (arms and legs will cross) and the fists close while the baby is breathing out (very often in the form of crying).
- It starts in week 9 to 12 of pregnancy.
- It is fully present at birth.
- It disappears (i.e. is integrated) between months 2-4.

Moro Reflex Demonstration

A Non-Integrated Moro Reflex

Anyone who doesn't fully integrate this reflex will be hypersensitive to stress. They might be either very receptive regarding sensual stimulations, or, in order to protect themselves, try to shut out all stimuli.

Symptoms

- Muscle tone can be lowered and sense of balance and co-ordination may be impaired.
- They may also get motion-sick quickly and be afraid of heights and fast paces.
- The stress can lead to chronic tension in the muscles, but also to visual and auditory impairments, like blinking a lot, not maintaining eye contact, being hypersensitive to sounds, confusing different sounds or stuttering.
- They often have [problems concentrating and may develop anxieties, mood](#)

[swings, aggression, depression or addictions, and suffer from low self-esteem.](#)

- As a result of the chronic stress experienced, the immune system may suffer, making the child more prone to auto-immune diseases, such as asthma, eczema and allergies.

As with all non-integrated reflexes, a person concerned may show only one or a range of these signs and symptoms, and the severity may range from very mild to severe. Many children with ADHD, and all children with Asperger's and autism show signs of a remaining (i.e. not fully integrated) Moro reflex.

Beneficial Activities

As a general rule, children with non-integrated Moro reflexes profit from anything that gives them a sense of security and lets them discover their environment as non-threatening and positively stimulating (e.g. consistency, a pleasant atmosphere, reliable rules, daily routines and advance warnings if things might change). They need sufficient time for relaxation and explorations of all the senses, praise and encouragement, singing, laughing and anything that will develop free breathing.

There are also specific exercises that can be done to integrate this reflex. One of them is the "starfish" exercise. This exercise will help up to 90% of people who don't have a fully integrated Moro reflex to reduce their symptoms.

Starfish Moro Reflex Integration Exercise

Starfish (Lying Down Version)

The Asymmetrical Tonic Neck Reflex (ATNR) or "Fencer Pose"

In general, this reflex supports one-sided movements and the development of auditory and visual perception and orientation in space. It also plays an important role in developing the speech and language centre in the left

hemisphere of the brain.

Already in utero, this reflex helps stimulate movements that help develop muscles and stimulate one's sense of balance. It also helps during labour by supporting labour contractions. It allows babies to breathe freely when lying on their tummy and helps them start training their hand-eye coordination, which later aid them in grasping and stretching movements.

Normal ATNR Development

- The reflex is triggered when the baby turns their head to one side.
- The limbs on the side where the head is turned should be extended, while the limbs on the other side should be flexed (i.e. the baby assumes a "fencer pose").
- It starts in week 16 to 18 of pregnancy.
- It is fully present at birth.
- It disappears (i.e. is integrated) between months 4-6.

Demonstration of ATNR Reflex

A Non-Integrated ATNR

Anyone who doesn't fully integrate this reflex may experience problems with laterality, rhythms, balance, sequencing and speech.

Symptoms

- This may express itself in not being able to distinguish right from left, having difficulty identifying letters or numbers (or mirror-writing them), general problems with handwriting, mixing up sequences (e.g. the order of numbers) or [having problems distinguishing sounds](#).
- They may speak slowly or in a monotonous way.
- They may have trouble balancing, coordinating movements, evaluating positions in a room, learning to read a watch, learning to write, or concentrating.

- All this may lead to a fear of school, aggression or depression.
- [Sometimes this is even diagnosed as ADHD.](#)

Beneficial Activities

Children with a non-integrated ATNR reflex will profit from games that help to develop hand-eye coordination and fine and gross motor skills. Helpful games include sorting things, threading pearls onto strings, throwing, catching, aiming, finger games, clapping games, drawing and dancing.

There are also specific exercises that can be done to integrate this reflex. These exercises won't help everyone, but, if practised regularly for a minimum of 30 days, they can make a difference in the majority of those with symptoms of a non-integrated ATNR reflex.

Exercise 1 to Integrate ATNR

Exercise 2 to Integrate ATNR

The Spinal Galant Reflex

The Galant reflex works together with the ATNR to help the baby's journey down the birth canal.

- It helps a baby's balance and coordinates the body for creeping and crawling.
- It is also connected to bladder function.
- This reflex starts around week 20 of pregnancy.
- It is fully present at birth.
- It disappears (i.e. is integrated) between months 3-9.

The reflex can be triggered in a baby that is lying on its stomach by drawing a line with your finger along the back from the neck down to the sacrum, right next to the spine. As a response, the baby will flex its hips sideways towards the ribs (producing a curve in the trunk) and automatically bend the leg on the same side.

The reflex is usually elicited by drawing the line on one side at a time. If you do it on both sides simultaneously, the baby will pee!

Demonstration of Galant Reflex

A Non-Integrated Galant Reflex

C-section babies or babies that experienced quick labour frequently show signs of a persisting Galant reflex beyond the age of nine months. This may be due to the reflex's inability to express itself fully during labor, which seems to make children more prone to retaining the reflex.

Symptoms

- Bedwetting can be a sign of a non-integrated Galant reflex. A high percentage of children who are bedwetting past the age of five have been shown to have a non-integrated Galant. What happens is that some sort of subconscious stimulation of the back triggers the reflex on both sides of the spine simultaneously, thereby encouraging the flow of urine. This could be triggered by the back of a chair or the waistband of a trouser.
- Other signs of a non-integrated Galant reflex include physical restlessness, insecurity and problems concentrating.
- Posture might also be affected, with a particular tendency towards scoliosis (a side-bending curve of the spine).
- Movements in general may lack fluidity. Older children with an active spinal Galant reflex learn to lock or stiffen their lower backs, which may cause back problems when they become adults.

Beneficial Activities

Children with a non-integrated Galant reflex profit from games that encourage crawling and rolling. They are often more comfortable sitting on balls or stools rather than chairs that can trigger the reflex, and they prefer loose-fitting clothes.

One specific exercise that can help to integrate the reflex in many children is the "snow angels" exercise demonstrated in the video below.

Snow Angels: Galant Reflex Integration Exercise

The Palmar Grasp Reflex

The palmar grasp reflex prepares babies to develop voluntary grasping and fine motor control of their hands. It also helps tactile development (i. e. being able to identify an object by touch alone—a skill that is also known as stereognosis).

- It starts around week 11 of pregnancy.
- It is fully present at birth.
- It disappears (i.e. is integrated) between months 2-3.

The reflex can be triggered by touching or putting pressure on the baby's palm. In response, the baby will clench its fist. As long as the stimulus persists, the fist will stay closed, and, if the reflex is triggered in both hands, the baby can be pulled up from the hands.

A Non-Integrated Palmar Grasp Reflex

Proper development and integration of the palmar grasp reflex is important for hands and fingers to be mobile and flexible.

Symptoms

- If the reflex is still active, people may struggle to move their fingers independently. As a consequence, their handwriting will suffer.
- People may move their mouths, lick their lips, or stick out their tongues when writing, drawing, sewing or undertaking some other fine motor activity.
- They might find typing on a computer or playing an instrument challenging as well because this requires individual finger movements. The resulting tension makes them more prone to back-aches during these activities.
- Their palms are often very sensitive to touch.

- They might also find it difficult to process ideas and put them down in writing. A written essay may be much less "fluent" than if it was told orally.
- Other effects of a retained palmar reflex include stuttering and stammering as well as speech and articulation challenges.
- Balance can also be challenged, as they struggle to put weight through their hands when pushing themselves up (as this will trigger the reflex).
- People affected have a tendency to lead an introverted life and can find it difficult to be fully engaged in the world around them.

Beneficial Activities

Children with a non-integrated palmar grasp reflex profit from clapping, cat's cradle games, drawing, kneading, ripping and crunching paper and other materials, digging with their hands, knitting and sewing as well as learning to play instruments.

One specific exercise to help integrate the reflex in many children is the exercise demonstrated in the video below.

Palmar Grasp Integration Exercise

The Plantar Grasp Reflex

- This reflex helps the foot muscles develop.
- It starts around week 11 of pregnancy.
- It is fully present at birth.
- It disappears (i.e. is integrated) between months 7-9.

The reflex can be triggered by touching or putting pressure on the sole of the foot of the baby. In response, the baby will curl its toes. On release, the toes flare out.

Demonstration of Plantar Grasp Reflex

A Non-Integrated Plantar Grasp Reflex

It need to be fully integrated to comfortably stand on the flat foot and to allow the foot to roll over the toes when walking.

Symptoms

- Problems when putting on shoes (because the toes curl)
- Orthopaedic problems of the foot and problems walking, running and balancing
- Affected children may have a tendency to toe-walk and to suffer from ankle twisting.
- There is also a link with language impairment as tension in the jaw and jaw clenching are often observed as associated symptoms.

Beneficial Activities

This reflex, like the palmar grasp reflex, often spontaneously integrates once the moro, ATNR and Galant reflexes are integrated. If this is not the case, foot gymnastics may help. Some examples include grasping and consciously releasing pencils with the toes, writing with the feet, digging with the feet, and gently rocking forwards and backwards on the feet.



[Steven Depolo - :\) Smiley Face Feet](#)

Further Reading

- Sally Goddard Blythe has published extensively on this subject. I highly recommend her books, [Reflexes, Learning and Behaviour: A Window into the Child's Mind \(2005\)](#) and [Neuromotor Immaturity in Children and Adults - the INPP Screening Test for Clinicians and Health Practitioners \(2015\)](#). She has also written an article on the results of a Developmental Movement Programme in two U.K. schools.
- In German, I recommend [Flügel und Wurzeln: Persistierende Restreaktionen](#)

[frühkindlicher Reflexe und ihre Auswirkungen auf Lernen und Verhalten](#) by Dorothea Beigel (2017).

- I also encourage you to read [Williams and Holley article \(2013\)](#) on background information and the results of large-scale studies in the U.K. and Australia regarding links between motor development and cognition in children.
- There is also this great article, which analyses [how introducing screening and treatments of reflex integration may be part of the prevention of developmental disorders](#).

Other Resources

- [Reflex profile of children with Down syndrome improvement of neurosensorimotor development using...](#)

An article (2016) published by the International Journal of Rehabilitation on children with Down syndrome.

- [Effects of the reflex integration method MNRI on children with cerebral palsy](#)

A ResearchGate article (2012) reveals the results of a small-scale study on the effects of the reflex integration method MNRI on children with cerebral palsy.

- [Persistence of primitive reflexes and associated motor problems in healthy preschool children - PMC](#)

A Polish small-scale study (2018) looking into the persistence of primitive reflexes and associated motor problems in healthy preschool children.

This content is accurate and true to the best of the author's knowledge and does not substitute for diagnosis, prognosis, treatment, prescription, and/or dietary advice from a licensed health professional. Drugs, supplements, and natural remedies may have dangerous side effects. If pregnant or nursing, consult with a qualified provider on an individual basis. Seek immediate help if you are experiencing a medical emergency.

Sonja (author) from Munich, Germany on March 19, 2019:

Elsa, the idea with all the exercises is that the person performing them can - consciously and deliberately- go both into the reflex position as well as out of it.

Elsa on March 09, 2019:

why is the actual reflex position (and not only the opposite) of the ATNR included in the exercise?

Lourdes on January 17, 2019:

Scientific evidence does not support this therapy to integrate primitive reflexes. In addition, primitive reflexes now have another better explanation thanks to research in neuroscience.