

## Chapter 1 : Newborn Reflexes

*The Moro Reflex is a composite series of rapid movements made in response to sudden stimuli; an involuntary response to a threat (movement of the arms up and away).*

Adapted from Wright et al. Handbook of Pediatric Strabismus and Amblyopia, 2nd edition. Do the eyes appear straight? Is their face turn or head posturing? The presence of straight eyes with a face turn in a patient who has strabismus can indicate the presence of binocular fusion. There are many tests that can be administered in regards to visual acuity. Some of the best examples for young children include: Sensory tests should be a part of every strabismus examination. Worth 4-dot test and a test for stereo-acuity e. Ductions test monocular movement and involve occluding one eye and forcing fixation to the eye being examined. They evaluate the ability of the eye to move into extreme fields of gaze. Versions test binocular movement and involve observing how the eyes move together. The key is to look for imbalances of eye movements and oblique muscle dysfunction missed on ductions. Version tests should include eye movements through nine cardinal positions of gaze: You can measure deviation using the following methods: Light reflex tests Cover tests Light reflex tests: Hirschberg Test or corneal light reflex test assesses eye alignment by observing the location of the corneal light reflex within the pupil. Individuals who are diagnosed with strabismus will have an eccentric light reflex in the deviated eye. Temporal displacement of the light reflex indicates esotropia, nasal displacement indicates exotropia, and inferior displacement indicates hypertropia. Place the prism in front of one eye, with the base oriented appropriately esotropia, base out; exotropia, base in; hypertropia, base down to standardize the deviation. Shine a penlight into both eyes, as done so in the Hirschberg test, and direct the patient to fixate on a target toy, picture etc. Placing a prism over the fixing eye in a patient with tropia will cause a version movement in which both eyes move in the direction of the apex of the prism, which moves the light reflex in the deviated eye. Placing the prism over the non-fixing eye directly moves the light reflex to the center of the pupil without a version shift. Bruckner Reflex Test " Is a test performed by using the direct ophthalmoscope to obtain a red reflex from both eyes simultaneously. Patients who are diagnosed with strabismus will show asymmetrical reflexes with a brighter reflex coming from the deviated eye, reflecting more light in the deviated eye. When performing the cover test, ask the child to fixate on a distinct object detailed picture, toy etc. In a normal child, no movement in the uncovered eye will be observed. Manifest strabismus is present if the uncovered eye moves to refixate on the target. Again the child is asked to visually fixate on an object, near or far. One eye is covered for a few seconds and then rapidly removed. This time, the movement of the eye that was under the cover is observed. If the previously covered eye shifts back into position to refixate as it deviated while covered, the patient is said to have latent strabismus. By observing the direction of refixation of each eye, you will be able to determine the problem and measure the deviation using prisms Be aware that most prism and cover measurements cannot be used on infants or very young children as it requires them to be able to fixate accurately on a object, and remain still long enough to get a proper evaluation. The following table, adapted from Weinstock et al.

## Chapter 2 : Reflex Integration | A Total Approach

*Testing the pupils is an important part of a comprehensive eye exam. Because you do not have voluntary control of your pupils, pupil testing may uncover possible problems with your autonomic nervous system as well as other problems in the rest of your body.*

**Behavior** This 5-day-old infant is in the alert, quiet state. He has spontaneous movements, which have a smooth flowing quality to them and are not excessive, jerky or asymmetric. He seems to be attentive to the environment. He makes attempts to organize and comfort himself by sucking on his fists, which is a favorable behavioral response. When a bright light is directed towards his eyes he has a definite response, which consists of blinking and avoiding the light. With repeated stimulus there is habituation, a diminished response to the stimulus. He responds to sound by quieting and even turning his head and eyes toward the sound. The above observations are the baby equivalent to the adult mental status exam. During crying, facial movement Cranial Nerve 7 is observed for fullness or asymmetry. The quality and strength of the cry is a way of looking at Cranial Nerves 9 and 10 function. Sucking and swallowing assesses Cranial Nerves 5, 7, 9, 10, and 12 because all of these cranial nerves are involved in this complex act. When the head is turned, there is conjugate eye movement in the opposite direction. Pupillary light reflex, corneal reflex, gag reflex and fundoscopic exam are done in the same manner as the adult exam.

**Tone - Resting Posture** For a term newborn the resting posture is flexion of the extremities with the extremities closely adducted to the trunk. After the first few days of life, the extremities are still predominantly in the flexed position but they are not as tightly adducted as they are in the first 48 hours of life.

**Tone - Upper Extremity Tone** Assessing motor function of the upper extremities begins with passive range of motion. This is done by rotating each extremity at the shoulder, elbow and wrist and feeling the resistance and the range of movement. Too little or too much resistance reflects hypotonia or hypertonia. Further testing helps to better define tone and any tone abnormalities.

**Tone - Arm Traction** Arm traction is done with the baby in the supine position. The wrist is grasped and the arm is pulled until the shoulder is slightly off the mat. There should be some flexion maintained at the elbow. Full extension at the elbow is seen in hypotonia.

**Tone - Arm Recoil** Arm recoil tests tone and action of the biceps. The arms are held in flexion against the chest for a few seconds, then are quickly extended and released. The arms should spring back to the flexed position. The hypotonic infant will have slow incomplete recoil. The hand should not go past the shoulder and the elbow should not cross the midline of the chest. The hand should open intermittently and should not always be held in a tight fist position. Rubbing the ulnar aspect of the hand or touching the dorsum of the hand will often cause extension of the fingers. Persistence of a fist position is a sign of an upper motor neuron lesion in an infant.

**Tone - Lower Extremity Tone** Assessing motor function of the lower extremities begins with passive range of motion. This is done by flexing the hips, then abducting and adducting the hips. Next, flex and extend the hips, the knees and ankles. Further testing helps to better define the tone and any tone abnormalities.

**Tone - Leg Traction** Leg traction is done by holding the leg by the ankle. The leg is pulled upward until the buttock starts to be lifted off the mat. The knee should maintain a flexed angle. Full extension of the knee with little resistance to pulling on the leg is a sign of hypotonia.

**Tone - Leg Recoil** To test leg recoil, the legs are fully flexed on the abdomen for a few seconds, then the legs are quickly extended and released. The legs should spring back to the flexed position. Legs that remain extended could be due to either hypotonia or abnormal extensor tone.

**Tone - Popliteal Angle** The popliteal angle is an assessment of the tone of the hamstring muscles. It is done one leg at a time. The thigh is flexed on the abdomen with one hand and then the other hand straightens the leg by pushing on the back of the ankle until there is firm resistance to the movement. The angle between the thigh and the leg is typically about 90 degrees. Extension of the leg beyond 90 degrees would be seen in hypotonia. The foot should go to about the level of the chest or shoulder, but not all the way to the ear. If the foot can be drawn to the ear then there is hypotonia.

**Tone - Neck Tone** The tone of the neck can be assessed by passively rotating the head towards the shoulder. The chin should be able to rotate to the shoulder but not beyond the shoulder. If the chin goes beyond the shoulder then there is hypotonia of the neck muscles, which is associated with poor head control.

**Tone - Head Lag** Starting

in the supine position, the baby is pulled by the arms to the sitting position. The head and the arms are observed during the maneuver. The arms should remain partially flexed at the elbow and the head may lag behind the trunk, but should not be fully flexed backwards. When the baby is in the sitting position, the head should be able to come to the upright position for at least a few seconds before dropping forward or backward. The baby should be able to bring the head to the upright position. The neck flexors can be tested by having the head in extension while in the sitting position. These tests are an extension of the test for head lag and are done at the same time.

**Positions - Prone** In the prone position, the baby should be able to extend the neck to the point where the head can be turned side to side. When the arms are extended by the side of the trunk, the baby should be able to bring them forward into a flexed position. The buttock should be somewhat elevated because the hips are flexed and adducted.

**Positions - Ventral Suspension** The baby is placed in the prone position, suspended in the air by the hand placed under the chest. The head should stay in the same plane as the back. The back should show some resistance to gravity and not be simply draped over the hand on the chest. The extremities should maintain some flexion tone and not dangle in extension.

**Positions - Vertical Suspension** The examiner holds the baby in the upright position with feet off the ground by placing the hands under the arms and around the chest. The baby should be suspended in this position without slipping through the hands of the examiner. If there is shoulder girdle weakness the arms will extend upwards and the examiner will have to reposition their grasp of the baby to avoid the baby slipping through their hands. It feels like trying to hold on to a slippery fish.

**Reflexes - Deep Tendon Reflexes** Testing deep tendon reflexes is an important part of the newborn neurological exam. They can be technically difficult to do. The first thing is to use a reflex hammer, not a finger or a stethoscope. Ideally, the baby is in a quiet alert state with the head in the midline. The head turned to one side can reinforce the tone and reflexes on that side. I usually start with the knee jerk because is the easiest to obtain. Take control of the leg with the hand under the knee and the leg at about a 90 degree angle at the knee. Then strike the patellar tendon with the reflex hammer using a pendular action rather a chopping action. Reposition the leg and try several times if you have trouble getting a knee jerk. Next, I go to the ankle jerk. For the bicep jerk, have the arm flexed at the elbow, thumb over the bicep tendon, then strike the thumb with a pendular action. Because of the predominantly flexor tone of the newborn, it is rare to obtain a triceps jerk. Absence of deep tendon reflexes is a much more important finding than hyperreflexia in the newborn. A normal newborn can have hyperreflexia and still be normal, if the tone is normal, but absent reflexes associated with low tone and weakness is consistent with a lower motor neuron disorder. Preserved or exaggerated reflexes associated with low tone is the hallmark of what is called central or cerebral hypotonia and the cause is an upper motor neuron lesion.

**Reflexes - Plantar Reflex** The normal response to stroking the lateral aspect of the plantar surface of the foot is extension of the great toe and fanning of the other toes. If the stimulus is brought across the ball of the foot then a grasp reflex will be elicited and the toes will plantar flex.

**Primitive Reflexes - Suck, Root** The baby should have a strong coordinated suck reflex with good stripping action of the tongue. There should be resistance to pulling out the pacifier. A root reflex is obtained by gently stroking the cheek towards the lips. The baby should open the mouth towards the stimulus and turn the head to latch on to the object. The examiner suddenly lets the head and shoulders drop back a few inches while releasing the arms. An absent or incomplete Moro is seen in upper motor neuron lesions. An asymmetric Moro is most often seen with a brachial plexus lesion. The brachial plexus palsy is on the side of the poorly abducted arm.

**Primitive Reflexes - Galant** The Galant reflex trunk incurvation is obtained by placing the baby in ventral suspension, then stroking the skin on one side of the back.

**Primitive Reflexes - Stepping** The stepping or walking reflex is obtained by holding the baby upright over the mat with the sole of the foot touching the mat. This initiates a reciprocal flexion and extension of the legs and it looks like the baby is walking. One should avoid touching the dorsum of the hand while eliciting the grasp reflex because stimulating the back of the hand causes a hand opening reflex to occur.

*As illustrated by the preceding example of reflex testing offered by many commercial laboratories, a statistical methodology can be used to determine a cost-savings approach. Reflex testing is an important tool in providing cost-effective, quality health care. 9 An initial laboratory test is performed based upon probability of obtaining a.*

Liquid-based cytology samples showing minor cytological abnormalities were analysed using HPV genotyping Linear Array, Roche diagnostics. Colposcopically directed cervical biopsies were obtained and the HPV test results were correlated with the histological results. Human papillomavirus HPV infection is a prerequisite for development of cervical cancer Bosch et al, ; Walboomers et al, However, HPV infection is also common among healthy women. It is usually asymptomatic and spontaneously cleared by the immune system Franco et al, However, about new cases of invasive cervical cancer are identified each year. Liquid-based cytology LBC has shown higher sensitivity for high-grade cervical lesions than conventional cytology Strander et al, ; Zhu et al, The proportion of abnormal findings increases when conventional Pap smears are replaced by LBC for screening. However, the positive predictive value PPV for advanced lesions increases in laboratories with extensive experience Strander et al, The recommendations for the management of minor cytological abnormalities vary in different parts of Sweden. In Stockholm County, all abnormal cytology results lead to costly follow-up investigations with repeat Pap smear and colposcopically directed biopsies. In cases of minor cytological abnormalities, HPV testing can more efficiently identify the small proportion of clinically important lesions. Such an approach is internationally accepted for cases of atypical squamous cells of undetermined significance ASCUS , but has not been generally recommended in cases of low-grade squamous intraepithelial lesions LSIL because of a high prevalence of oncogenic HPV in this group Scherman et al, ; Schiffman and Solomon, ; Arbyn et al, ; Wright et al, Such triage can be performed in conjunction with LBC as a reflex test and may further improve cytological evaluation. Materials and methods Study population and setting Seven maternity health centres in the southern part of Stockholm participated in this study. Minor cytological abnormalities were found in 3. The cytological diagnoses were defined using the Bethesda nomenclature Solomon et al, According to Swedish recommendations, cases of koilocytosis without signs of dysplasia are reported as non-pathologic. Mean age of patients was 33 years, median age 30 years, and age range 22–59 years. The age range was similar for both groups: Women with minor cytological abnormalities were referred for further investigation, including gynaecological examination, colposcopy, directed biopsies, and repeat Pap smear. The histological samples were evaluated and classified according to the CIN classification Richard, The histological follow-up results were traced through the medical and laboratory records and through the Stockholm Oncology Center. Only histological material obtained within 1 year of cytological screening were registered. Ethical approval was obtained in December No. The ability of the HPV test to identify or exclude a high-grade cervical lesion was evaluated with the histopathology as gold standard. Results Histological findings Of the cases of mild cytological abnormalities studied, histopathological follow-up was obtained in cases. These are the cases that will be discussed here later. The cytological findings in relation to the histological diagnosis in women are summarised in Table 1. Table 1 Liquid-based cytology findings correlated to histological diagnosis in women with minor cytological abnormalities.

### Chapter 4 : MPNR - Overview: Myeloproliferative Neoplasm (MPN), JAK2 VF with Reflex to CALR and MP

*Snow Angels for Galant Reflex. Have your child lie face-up on a mat or flat surface with his legs extended and arms at the sides. have him breathe in an simultaneously spread his legs outward and raise his arms out along the floor and overhead, with the hands touching.*

However the first step to the program is to inhibit any retained primitive reflexes found. The way to get rid of primitive reflexes is to use them. The following reintegration exercises are provided for the reflexes that are most consistently associated with a brain imbalance. These exercises can help start the process of balancing the brain so that your child can overcome developmental delays. Rest assured that this initial step in remediation is easy and does not take long. Do this at least twice a day until you can no longer elicit the reflex. Chewing gum can also be helpful to inhibit this reflex. Starfish for Moro Reflex Have your child sit in a chair in a fetal position, with the right wrist crossed over the left and the right ankle crossed over the left ankle. Fists should be closed. Ask your child to inhale and make like a starfish by swinging his arms up and out and thrusting his legs out while extending the head back and opening hands. Have him hold this position for 5 to 7 seconds while holding his breath. Then tell him to exhale and return to the same position, crossing the left wrist and ankle over the right wrist and ankle. Repeat this again until they are back to the original position Do this 6 times in a row a few times a day until the reflex is inhibited fully. Snow Angels for Galant Reflex Have your child lie face-up on a mat or flat surface with his legs extended and arms at the sides. The hands should touch at the same time the legs are fully extended. Exhale and return to the original position. The key is to get the child to move all four limbs slowly at the same time. Do this 5 times several times a day until you can no longer elicit the reflex. Ball Squeezes for Palmer Grasp Reflex Have child squeeze a small ball, such as a tennis ball, several times in a row. Or you can just stroke the palm of the hand with a light brush until the reflex is suppressed. Have your child sit in a chair and turn his head to both sides or to the one side that still elicits the reflex. As your child is turning his head, have him extend the foot and arm of the same side outward from the body and look at his hand. Have the child return to starting position and repeat until the reflex fatigues. Repeat three times in a row. Exercises should be repeated in succession 5 to 10 times until the reflex fatigues. Frequency is more important than intensity. Movement must be slow and purposeful. Proper mind-set is crucial: You can also take my free assessment to find out what your next steps are and gain access to more, free help.

**Chapter 5 : 5 Exercises That Inhibit Primitive Reflexes - Dr. Robert Melillo**

*Cough reflex testing is not a replacement for videofluoroscopic study of swallowing and endoscopic evaluation of swallowing; both recognized tools for identifying silent aspiration (figure 1). Cough reflex testing is purely an addition to the SLP's CSE toolbox providing specific information about airway responsiveness.*

Received Mar 23; Accepted Jun This article has been cited by other articles in PMC. Abstract Reflex tests are widely used in clinical laboratories, for example, to diagnose thyroid disorders or in the follow-up of prostate cancer. Reflex tests for antinuclear antibodies ANA have recently gained attention as a way to improve appropriateness in the immunological diagnosis of autoimmune rheumatic diseases and avoid waste of resources. However, the ANA-reflex test is not as simple as other consolidated reflex tests the TSH-reflex tests or the PSA-reflex tests because of the intrinsic complexity of the ANA test performed by the indirect immunofluorescence method on cellular substrates. In this review, the Study Group on Autoimmune Diseases of the Italian Society of Clinical Pathology and Laboratory Medicine provides some indications on the configuration of the ANA-reflex test, using two different approaches depending on whether clinical information is available or not. We further give some suggestions on how to report results of the ANA-reflex test. Cascade algorithms have been used for some time in autoimmune diagnostics, in particular for the detection of anti-nuclear-cytoplasmic antibodies ANA [ 1 - 3 ], but in spite of its obvious contribution in terms of diagnostic appropriateness, the ANA-reflex test is not yet widely implemented [ 4 , 5 ]. The ANA-reflex test differs from other current laboratory reflex tests both conceptually and organizationally. For example, the thyroid-stimulating hormone TSH -reflex test relies on the sequential execution of specific tests, inserted into a well-defined algorithm based on the TSH test result, without the need for decisional intervention by the operators. ANA-reflex testing is certainly more complex than TSH-reflex or other reflex testing for several reasons. First and foremost, ANA testing has a very low predictive value. Third, ANA is detected by indirect immunofluorescent antibody assay IIF , a subjective interpretative assay, with all the associated variables applicable to this type of method. Another peculiar characteristic is that ANA testing at the dilution of 1: For these reasons, the introduction of an ANA-reflex test is an intriguing challenge both in terms of approach and algorithm construction. Whichever these difficulties should not impede the application of ANA-reflex testing considering its undeniable advantages. ANA-reflex testing could, indeed, be useful to the general practitioner or to the non-rheumatology specialist who entrusts the seroimmunological investigation of a patient with a potential systemic autoimmune rheumatic disorder to the laboratory. The objective is to simplify the patient work-up: The economic implications of ANA-reflex testing would be very relevant if its application lead to a reduction of second-level tests, e. This document proposes one ANA-reflex algorithm to confirm a diagnosis of an ANA-associated rheumatic disease AARD based exclusively on the laboratory result for laboratories without access to clinical information, and another based on both laboratory results and clinical information. These two algorithms then merge into a common pathway. The evaluation of the ANA test pattern is fundamental to the execution of the second-level tests. The specific autoantibodies responsible for typical ANA patterns are clearly described in the literature [ 11 - 15 ] and for certain fluorescent patterns, such as homogeneous, speckled, fine grainy Sclike , nucleolar, centromeric or speckled cytoplasmic, the identification of precise autoantibody markers is considered essential, while for others it is not deemed to be necessary. This selection is based on the fact that the antibodies directed against these antigens are more frequently associated with autoimmune rheumatic diseases, and the tests are readily available commercially. In most cases, these patterns do not require further testing inasmuch as the antigenic target is neither known nor confirmable with specific tests. Accordingly, confirmation tests are not indicated for the following patterns: From a morphological perspective, the DFS70 pattern is well characterized: HEP-2 cell presents fairly coarse granular fluorescence of the nuclei sparing the nucleoli, while the chromatinic region of mitotic cells is intensely fluorescent, maintaining the typical granularity. This pattern should urge the pathologist to perform a confirmation test to identify anti-DFS70 specificity [ 16 ]. In the event that the execution of a specific anti-DFS70 test is not possible, it is recommended that a descriptive comment of the

pattern is inserted on the report along with any possible diagnostic correlations. It goes without saying that whenever signs and symptoms of autoimmune rheumatic disease are present, anti-dsDNA and anti-intracellular specific antigen antibodies should be tested, even in the presence of an anti-DFS70 pattern. Subsequently, we suggest an approach to the further steps necessary to diagnose ANA-reflex test in subjects who were identified as symptomatic by the requesting clinician. This should not be considered if the laboratory does not have access to clinical information. Indications for ANA-reflex testing supported by clinical information In our opinion, it would be useful if the ANA-reflex test request was accompanied by clinical information, since some signs and symptoms could independently justify the execution of the second-level tests [ 17 ]. The exact nature of the signs and symptoms to associate to the ANA-reflex test request should be decided in conjunction with the clinical specialists rheumatologists. Out of the classification criteria for the respective AARDs, we have identified the following clinical findings that could warrant the second-level tests even in the case of low-titre ANA positivity or ANA negativity: Some of the aforementioned clinical findings are subjective, but nonetheless relevant in the suspicion of AARDs. The identification methods, in general, are immunoblot or microarray that in some countries currently present such elevated costs as to be used only in selected cases. We believe therefore that such diagnostic investigations are justified only in a specialized setting. Consequently, it is not appropriate to integrate these investigations into the ANA-reflex algorithm. An additional consideration regards the capacity of a positive ANA test to predict uveitis in juvenile idiopathic arthritis JIA or to evidence autoantibodies that correlate with autoimmune hepatitis. Widespread use of the ANA-reflex test for diagnosing such pathologies, however, is not advisable considering that only some of the markers for autoimmune hepatitis can be identified by ANA-IIF on HEp-2 cells. Nevertheless, in the presence of a pattern suggestive of an autoimmune hepatitis-associated marker, confirmation tests are indicated.

### Chapter 6 : Babinski reflex: MedlinePlus Medical Encyclopedia

*Introduction. The term reflex test indicates a "cascade" diagnostic approach where a positive initial (first level) test automatically triggers further (second level) tests based on predefined rules applied to information systems.*

ACVO Veterinary ophthalmic examinations are performed in a defined anatomical order while evaluating visual responses and reflexes Table 1 with the objective of establishing a primary diagnosis. Full physical examinations are also routinely performed to identify underlying systemic disease. Diagnoses are not made by simply comparing ocular findings to pictures within an ophthalmic atlas or online. Unfortunately, ophthalmic diseases display a broad spectrum of presentations that will rarely match these images. Ophthalmic patients are evaluated from multiple points of view and at different levels of magnification. The patient is similarly viewed from the top, front, and sides. Ocular examination then proceeds with the determination of the menace response under lighted conditions. A menace response tests the continuity of a neurologic pathway initiating at the medial retina optic nerve ; continuing through the contralateral geniculate nucleus, motor cortex, and pontine nucleus; to the cerebellum; and terminating at both facial nerves. An exclusively visual menace response requires minimal airflow during the gesture, and all physical contact with the patient e. The test should be performed while covering the contralateral eye to prevent its contribution to the menace response. A blink is considered a positive menace response. If a response is not elicited the intactness of palpebral responses are tested by palpation of the face. The feline menace response is also more subtle and incomplete than its canine counterpart. Examination room lighting reflects and diffuses light across the cornea and lens surface producing Purkinje images that preclude visualization of internal ocular anatomy. Darkened rooms also promote pupillary dilation increasing visualization of the lens and posterior eye. The pupillary light reflex PLR is performed in the dark utilizing a strong light source i. A penlight will not produce the focused intense light necessary for these tests and cannot be used. Canine eyes will also typically dilate in sympathetic response to agitation within an examination room. Under these conditions, intense illumination is also required for significant pupillary constriction. Both the direct and indirect PLR are evaluated. An indirect PLR is reported as from the stimulated illuminated eye to the contralateral responding constricting eye. Indirect responses can aid in the evaluation of retinal function as a positive response indicates the continuity of a neurological pathway connecting the eyes e. An indirect or direct PLR can be consistent with, but does not establish, cortical vision. This test is particularly useful when the internal structures of the eye are obscured by opaque media e. Ophthalmic examinations are challenging but proper diagnoses can be determined through a systemic approach. A thorough ocular examination continues with several important tests that will be the subject of my next article. If you have any questions about the menace response, the PLR, or the dazzle reflex, please consult your veterinary ophthalmologist. Veterinary ophthalmic examinations are performed in a defined anatomical order while evaluating visual responses and reflexes with the objective of establishing a primary diagnosis.

### Chapter 7 : The ANA-reflex test as a model for improving clinical appropriateness in autoimmune diagnosis

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Masgutova developed to assist the entire somatosensory system touch-proprioceptive in being awakened to enable the body to register information more rapidly. This is incredibly important for a number of reasons: The registration of touch-proprioceptive information prepares the body for understanding lateral and cross lateral patterns of movement. The touch-proprioceptive system is very necessary in assisting the body to create feedback into the nervous system to assist with motorplanning. Touch is quite important for the bonding between infant and parent. This technique enables the parent to re-establish this important phase of development in a way that is soothing and calming for both parent and child. The child may initially react in a squirmy way as they do not know what to expect and may be hypersensitive to touch or hypersensitive in their emotional system. With persistence and perseverance and applying the method the same way consistently the child will start to relax with the procedure. We use the full method at our center as Dr. We have designed an abbreviated version for the parent to get started in the home.

#### Reflex Integration Definitions

This list covers the most frequent reflexes we are asked about and is not meant to be exhaustive

**Homologous symmetrical movement:** This developmental phase consists of the baby using all limbs together from a point of safety and center radiating from the navel

**Homolateral lateral, asymmetrical:** This next phase of development consists of all 4 limbs working together, but as opposite units from the left and right sides of the body, involving the crossing of midline again over the center point of the navel. The ATNR develops in utero and is a key player in the birthing process as the baby passes through the birthing canal. It helps to increase extensor muscle tone:

**The Symmetrical Tonic Neck Reflex STNR** is seen as the child in quadruped flexes the head down which causes the arms to flex and the legs to extend, while placing the head in extension causes the legs to flex and the arms to extend. STNR is also suggested to impact ocular motor skills related to shifting from a position of far distance vision neck extension to near distance vision neck flexion , a skill needed in copying, as well as visual tracking in the vertical plane similar to the ATNR in the horizontal plane. The Spinal Galant Reflex is elicited when a stimulus presented to the side of the spine results in hip flexion to 45 degrees; this should be seen equally strong on both sides. This reflex is also thought to aid in the birthing process. It has also been suggested that this reflex plays a role as a primitive conductor of sound in utero. The Moro Reflex is a composite series of rapid movements made in response to sudden stimuli; an involuntary response to a threat movement of the arms up and away from the body and then quickly coming back to a clasping posture across the body. Abduction is accompanied by a sudden intake of breath, while adduction facilitates the release of the breath. Long-term effects of a retained Moro reflex include: The Tonic Labyrinthine Reflex TLR is manifested when the head is bent forward into flexion, the arms and legs comes into flexion, and when the head goes backwards, the arms and legs go into extension. The TLR is closely linked to the Moro in that they are both related to vestibular functions stimulated by the labyrinths of the inner ear and their associations with movements of the head and position in space. This reflex exerts tone throughout the body, assisting the infant in moving from a primary position of flexion into extension. As this process unfolds, balance, muscle tone, and proprioception are affected. This may cause a lack of a secure reference point in space, difficulty judging space, distance, depth perception, visual figure-ground, and velocity of movement. This observation mostly supports or negates the continued presence of the abovementioned ATNR. Protective extension is observed when the arms extend out to break a fall or counter when an individual is off balance in the down, front, side, and backward positions.

### Chapter 8 : Approach to Strabismus | Learn Pediatrics

*A second screening approach begins with ANA IFA with reflex to a rheumatic disease-associated antibody panel (ANA Screen, IFA, with Reflex to Titer and Pattern and Reflex to.*

Chapter 9 : Chiropractic & Nutrition Wellness Center -

*This reflex test sequentially evaluates for the common major gene mutations associated with non-BCR/ABL1-positive myeloproliferative neoplasms until a mutation is identified. The testing sequence is based on the reported frequency of gene mutations in this disease group.*