

## **ROOTING AND SUCKING REFLEX**

Necessary building blocks for later functioning

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Research has shown that the dynamic infant-parent interaction is the most important foundation upon which a child learns about self, trust and respect. It is this first relationship that influences the way relationships are perceived and learning occurs (Odent, 2001).

When a baby is ready to be born, it has a full repertoire of movements helping him through the birthing process and to survive his first year of life. From conception to 7 months gestational age primitive reflexes develop, which are essential for a baby's survival. These reflexes are also imperative for the development of coordinated movements and reaching milestones.

“Primitive reflexes are automatic, stereotype movements directed from the brain stem and executed without cortical involvement. To survive, he is equipped with a set of primitive reflexes designed to ensure immediate response to this new environment and to his changing needs” (Goddard, 1996; 1).

“Primitive reflexes are essential in normal development. Response to these reflexes prepares the child for progressive development” (Fiorentino, 1976; 5).

Kephardt (1971: 4-6) and Knickerbocker (1980: 18, 51 ,52) stress the fundamental role the development and the integration of the primitive reflexes play in both preventing as well as treating possible later learning problems.

### **Historical indicators of neuro- developmental delays**

#### **Pregnancy**

- Hyperemesis (severe sickness)
- Severe viral infection during the first 12 weeks or between 26 and 30 weeks
- Excessive alcohol consumption and/or drug abuse
- Radiation
- Accident or infection
- Threatened miscarriage
- Hypertension
- Placental insufficiency (small for dates)

- Smoking
- Toxoplasmosis
- Severe stress
- Uncontrolled diabetes

### **Birth**

- Prolonged labour
- Placenta previa
- High forceps or ventouse extraction
- Breech
- Caesarean
- Cord around the neck
- Foetal distress
- Premature (more than 2 weeks early) or post mature (more than 2 weeks late)

### **Newborn disorders**

- Low birth weight (under 5 lbs.)
- Incubation
- Distorted skull
- Prolonged jaundice
- Requiring resuscitation
- Blue baby
- Heavy bruising
- Problems with feeding the first 6 months

A study by Field; Scafidi & Schanberg confirmed that premature infants who were touched (and subsequently could suckle) had a 21 percent greater daily weight gain, were discharged five days earlier, had superior performances on Brazelton Neonatal Assessment Scale, showed less stress behaviours and catecholamines (nor-epinephrine, epinephrine) increased .

**The ROOTING REFLEX and the SUCKING REFLEX are two of the essential primitive reflexes that will be discussed in detail in this presentation:**

The first sense to develop in the embryo is the skin and the first response to tactile stimulation takes place in the vicinity of the mouth. Towards the end of the first trimester different withdrawal reflexes appear, amongst other - the oral withdrawal reflex. The embryo will, for example, move away its head from the stimulus if its upper lip is stimulated.

These reflexes are however normal and necessary within a certain period of development anticipating the integration of this function by the higher centers of the brain and before other reflexes can take over and dominate for a further developmental period.

The oral withdrawal reflex disappears 12 weeks after conception after which the rooting and sucking reflex take over and dominate. The fetus is now able to move his hands in the direction of his face, enabling him to suck his thumb or touch his face. The nervous system uses this repetition of sensory information to form neural pathways to the brain, preparing the baby to root and suck at birth as well as promoting the digestive and eliminating functions.

The baby thus starts exercising how to swallow and suck in the uterus. At 15 weeks gestational age, the sucking, swallowing and thorax movements are already visible. "Taste buds are connected to nerve fibers by the twelve week and are functioning by the fifteenth week" (Chopra, 2005: 32).

The breathing muscles are being used, not to inhale air, but to excrete the amniotic fluid that is being swallowed. If baby takes in too much amniotic fluid, the gagging reflex will open up the air passages. Swallowing, as well as hiccup movements can be noticed during this period of development.

In the womb and in the early months of life, the higher centers of the brain are not fully developed yet. During this time a baby is protected and assisted by primitive reflexes, which are controlled by the lower centers of the brain to stimulate the 'suck, swallow and breath' sequence.

The cranial nerves that play an important role in the development of the rooting and sucking reflexes are:

- TRIGEMINAL (V): muscles for chewing, sensory parts of the forehead and cheek
- FACIAL (VII): muscles for tasting in the front part of tongue and facial expression
- VAGUS (X): coughing, sneezing, swallowing, sensation of hunger, speech
- GLOSSOPHARYNGEAL (IX): back part of tongue and soft palate
- HYPOGLOSSAL (XII): controls movement of tongue for sucking and swallowing and later also for chewing and swallowing

(Basmajian, 1974: 339-351, Grant, 1975: 654-658, Pansky, 1975: 265-270, Human Atlas, 2005; 74,75, 94,95).

Montagu (1986; 84) states that the baby does not use the same muscle movements when he suckles (nurses) as the sucking movements he performs in the uterus. The baby's ability to suckle on the breast is only fully developed by 35 – 36 weeks of gestation. This can be seen when stimulating the vicinity of the newborn baby's lips elicits the oral orientation reflex – the mouth opens and the head turns in the direction of the stimulus. This reaction takes place if only one little lip is stimulated.

When both lips are being stimulated, the oral orientation reflex inhibits, a grasping action takes place and sucking can begin. The oral orientation and grasping of the lips are the two most important steps that have to take place before the rooting reflex can take over. The rooting reflex (searching with the nose and the mouth to find the nipple), is strongest the first 20 minutes after birth when the baby desperately seeks to grasp onto something for safety and security – hence the grasping reflexes (palmar; plantar; sucking and rooting), (Odent, 2001:6).




The rooting and sucking grasping reflexes are being stimulated during the birth process by the pressure and massaging experienced by the uterus wall on the baby's head and body as baby moves down the birth canal. (De Jager, 2006: 63).

The rooting reflex may appear weaker for three to four days after birth if the mother had medication during the birth process; baby was born by caesarian procedure; aided birth or if a baby had to be put into an incubator straight after birth. Although the reflex appears weaker, it is important to stimulate this reflex as soon as it is possible. It is recommended that the rooting reflex is stimulated for 10 days after birth. Thereafter the pattern is established well enough for the baby to find the nipple himself.

The grasping reflexes boost the immune system and lay the foundation for health, growth and well-being. Research by Tiffany Field suggests that failure to grasp/latch may impact on weight gain and the brain growth hormones.

***“The rooting reflex has for its purpose scanning and the finding and engaging of the nipple and areola between the lips. While rooting will soon be abandoned for visual scanning, it is so important in that it constitutes a re-verification and a re-affirmation of a pleasure-giving existence - we do not believe in reality of anything, unless we can touch it.” (MONTAGU 1986; 123).***

## What can be done to promote rooting and sucking?

- Simulate contractions around the crown of the head by rhythmically applying and releasing pressure.
- Gently move baby's chin forward and touch it with one hand and baby's belly button with your other hand. Gently massage both points simultaneously. The umbilical cord was the original source of nourishment and stimulating both points simultaneously encourages the transition from being fed to feeding. 
- Gently massage between top lip and nose with the one hand and baby's coccyx with the other hand to stimulate the sucking reflex and promote metabolism. 
- Gently draw the outline of the lips with your finger, to assist to open baby's lips. Also use your finger on the inside of the mouth to help baby close the lips. 

**Rooting and sucking is life saving;  
relationship saving and  
health promoting,  
you can make a difference.**

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