Neonatal Reflexes

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Neonatal Reflexes

Neonatal reflexes are inborn reflexes which are present at birth and occur in a predictable fashion. A normally developing newborn should respond to certain stimuli with these reflexes, which eventually become inhibited as the child matures.
What do Primitive Reflexes Have to do With Speech Pathology?

• Most primitive reflexes begin to occur in utero through the early months of the child’s postnatal life.

• These reflexes are then replaced by voluntary motor skills.

• When the reflexes are not inhibited, there is usually a neurological problem at hand.

• In those individuals with cerebral palsy and neurogenic dysphagia, the presence of primitive reflexes is a characteristic (Jacobson, p.44).
Moro Reflex

- Stimulated by a sudden movement or loud noise.
- A normally developing neonate will respond by throwing out the arms and legs and then pulling them towards the body (Children’s Health Encyclopedia).
- Emerges 8-9 weeks in utero, and is inhibited by 16 weeks (Grupen).
Palmar Grasp

- Stimulated when an object is placed into the baby’s palm.
- A normally developing neonate responds by grasping the object.
- This reflex emerges 11 wks in utero, and is inhibited 2-3 months after birth.
- A persistent palmar grasp reflex may cause issues such as swallowing problems and delayed speech (Grupen).
Babinski (Plantar) Reflex

- Stimulated by stroking the sole of the foot:
  - toes of the foot should fan out
  - the foot itself should curl in.

- Emerges at 18 weeks in utero and disappears by 6 months after birth (Grupen).
Asymmetric Tonic Neck Reflex

• The child is placed on their back and will:
  – make fists
  – turn their head to the right.

• This reflex is present at 18 wks in utero

• Disappears by 6 months after birth (Grupen).

Normal Tonic Neck Reflex at 3 Months
Tonic Labyrinthine Reflex

- Arms and legs extend when head moves backward (away from spine), and will curl in when the head moves forward.

- Emerges in utero until approximately four months post-natally.
Galant Reflex

• The neonates back is stimulated
  – their trunk and hips should move toward the side of the stimulus.

• This reflex emerges 20 wks in utero and is inhibited by 9 months.

• This turning of the torso aides in neonatal and toddler movement, such as crawling and walking.

• However, if the reflex persists, it can effect walking posture (Grupen).

Normal Galant Reflex

Abnormal Galant Reflex
Stepping Reflex

- Neonate will make walking motions with legs and feet when held in an upright position with the feet touching the ground.

- This reflex appears at birth, lasts for 3-4 months, then reappears at 12-24 months.
Landau’s Reflex

- When neonate is placed on stomach, their back arches and head raises.

- Emerges at 3 months post-natally and lasts until the child is 12 months old.

- If this reflex does not occur, it is an indication of a motor development issue
  - generalized intellectual impairment
  - cerebral palsy
    - (Neonatal Reflexes).
Rooting Reflex

- The baby’s cheek is stroked:
  - they respond by turning their head towards the stimulus
  - they start sucking, thus allowing for breastfeeding.

- This reflex is inhibited anywhere between 6 and 12 months of age. (Neonatal Reflexes)
Primitive Reflexes and Swallowing

• Some primitive reflexes interfere with achievement of swallowing.
  – If the Moro Reflex is strong...
    • there can be many interruptions with feeding if the child is constantly reacting to noises or sudden movements
  – A present Tonic Labyrinthine Reflex ...
    • may cause problems with the holding and/or positioning for feeding,
    • can also change the position of hypopharanx, leaving less room in the esophagus for food to travel.
  – A strong Asymmetric Tonic Neck Reflex...
    • can cause constant lateral head turning which may cause problems for feeding (Jacobson, p.44).
Normally Persisting Reflexes

• Although it is important that many of these reflexes become inhibited as a child matures, there are also those reflexes that remain throughout a healthy person's life.

  – The ‘knee-jerk’ reflex,
    • stimulated by a tap on the tendon located just below the knee while person is sitting
    • an involuntary upward swinging of the lower leg and foot is a response.

  – The acoustic reflex,
    • stimulated by loud noise.
    • The stapedius muscle contracts in response to this stimulus to protect the ear from possible trauma caused by loud sounds.

  – The pharyngeal reflex, or ‘gag’ reflex
What Do Abnormal or Persistent Primitive Reflexes Indicate?

• The normal emergence and inhibition of primitive reflexes is extremely important in neonates.

• However, these reflexes should disappear and allow for voluntary skills to replace them.

• Those children who exhibit abnormal reflex patterns most likely suffer from a neurological problem which can result in:
  – dysphagia,
  – delayed speech
  – reading problems

• The reemergence of primitive reflexes in adults with a formally mature and healthy neurological system can indicate a problem in the central and/or peripheral nervous systems.

• Thus, testing for the presence of primitive reflexes in adults can determine if there may be neurological breakdown.
References


