

NEWBORN REFLEXES

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ABSTRACT:

Reflexes are the indicator for the neurological development. It's an essential component to be tested in newborn to detect the normality and abnormality earlier so that appropriate measures can be taken in case of any emergency. Some reflex are permanently present and some will disappear as per the growth and development of the child. The major responsibility of the health worker is to test the newborn reflexes.

Key words: Reflexes, Neurological development, Health care worker

INTRODUCTION

Reflexes are involuntary movements or actions. Some movements are unintentional and occur as part of the baby's normal routine. Others are responses to certain actions. Reflexes help identify normal brain and nerve activity. Some reflexes are only present at certain stages of development [1] Health care providers check reflexes to determine if the brain and nervous system are working well. Some reflexes are unique to those developmental stages [2]

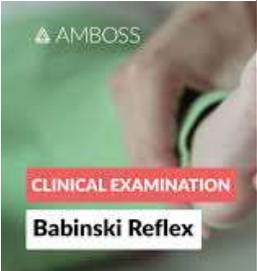
DEFINITION

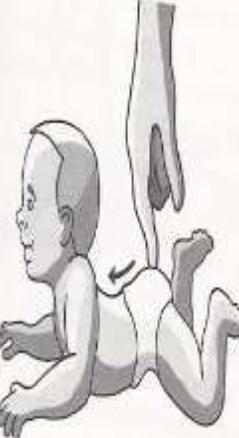
A newborn reflex is a response of a newborn to a stimulus and that occurs without conscious thought[3].

Reflex	Stimulation	Response	Age of appearance	Age of disappearance	Purpose/Significance of reflex	Significance for absence of reflex	Images
Reflexes of Eye							
1. Blinking	The cornea is touched	Involuntary blinking of the eyelid	Birth	Does not disappear	Protect the eyes from foreign bodies and bright lights	Dysfunctional blink reflex results due to damage at pathway of central or peripheral nervous system	
2. Pupillary reaction	Bright light falls on eyes	Pupil constrict	Birth	Does not disappear	1.Indicates balance between the sympathetic and parasympathetic nervous systems 2.Its nature gives an indication of muscle tone.	Hypotonia is described as the inability of the arms or hands to move freely or completely open.	
3. Doll's eye or Oculocephalic	Head is moved to right or left	Eye lag behind and do not immediately adjust to new position	Birth	3-4month	Indicating an intact brainstem function	Asymmetrical in hemiplegia and cerebral damage	

Reflexes of Nose							
4. Sneeze	Roll the cotton into a point, and place it in one nostril. Gently move the tissue back and forth, until feeling a tickling sensation	Spontaneous response of nasal passage by sneezing	Birth	Does not disappear	Sneezing is a natural defense system to rid the baby's nose of billions of irritants	Sneezing abnormalities are usually caused by irritation of the trigeminal nerve terminals in the nasal mucosa.	
5. Glabellar or Myerson sign	Tapping briskly on bridge of nose	Eyes close tightly	Birth	Does not disappear	Indicates the good condition of trigeminal nerve	Abnormal frontal release. Absent when there is sensory loss	
Reflexes of mouth							
6. Rooting	The baby's mouth corner is stroked or touched.	The baby turns his head and open mouth to follow direction of stroking.	Birth	3-4month	It helps the baby to find the breast or bottle to start feeding	Absence seen in neurologically impaired infants.	

<p>7. Sucking</p>	<p>The roof of the baby's mouth is touched</p>	<p>Baby begin to suck</p>	<p>Birth</p>	<p>Persists during infancy</p>	<p>Helps in breast or bottle feeding</p>	<p>Persistence may inhibit voluntary sucking. Absence sucking at birth indicate sickness, Persistence beyond 7 months indicate developmental delay</p>	
<p>8. Gag or Pharyngeal</p>	<p>Stimulation of posterior pharynx by food or suction</p>	<p>Infant gag</p>	<p>Birth</p>	<p>Persists through-out life</p>	<p>It helps to prevent choking and protect from swallowing potentially harmful substances</p>	<p>Damage to the glossopharyngeal nerve, the vagus nerve and brain death</p>	
<p>9. Extrusion or tongue thrust</p>	<p>Tongue is touched or depressed</p>	<p>Infant respond by forcing it outward</p>	<p>Birth</p>	<p>4th month</p>	<p>It helps to protect babies from choking or aspirating food and other foreign objects and helps them to latch onto a nipple</p>	<p>Underdeveloped muscles leads to absence of the reflex</p>	

10.Cough	Irritation of mucous membrane of larynx	Infant coughs	Birth	Persist life long	Enhances clearance of secretions and particulates from the airways and protects from aspiration of foreign materials	It is impaired for whose abdominals and respiratory muscles are weak.	
Reflexes of Extremities							
11.Grasp	<p>a. Palmar Grasp Touching/stroking palms of hands</p> <p>b. Plantar Grasp Touching/stroking soles of feet near base of digits</p>	<p>Flexion of hands.</p> <p>Flexion of soles.</p>	<p>Birth</p> <p>Birth</p>	<p>Palmar grasp at 3 months</p> <p>Planter grasp at 8 months</p>	It allows a newborn to clench an object when pressure and touch are applied to the palm	Athetoid Cerebral palsy	
12.Babinski	Stroking outer sole of foot upward from heel across ball of foot	The big toe bends back toward the top of the foot and the other toes fan out	Birth	1year	Indicates active neurological responses Indicates brain and nerve activities are normal	If no movement, then its a neutral response and has no clinical significance.	

Mass Reflexes							
13.Moro or Startle	Baby is startled by a loud sound or movement.	In Birth 3-4 months, the baby throws back his or her head, stretches his or her arms and legs, cries, and then draws the arms and legs in back in	Birth	3-4months	It helps babies to develop the controlled skill of walking	Generalized depression of CNS, hemiparesis, Erb palsy, Fracture clavicle, Kernicterus	 <p>The Moro reflex</p>
14.Perez	When infant is prone on a firm surface, thumb is pressed along spine from sacrum to neck	Infant respond by crying, flexing extremities and elevating pelvis and head and lordosis of spine	Birth	4-6months	It helps to assess the development of muscle tone along the front and back of the body and is the foundation for whole body coordination.	The lack of a reflex may indicate spinal cord immaturity.	

<p>15.Tonic neck or Fencing</p>	<p>a.Assymetrical Passive rotation of head in supine position</p>	<p>Extension of the same side's upper limb and flexion of the opposite side's upper limb</p>	<p>At birth</p>	<p>3 months</p>	<p>It helps your newborn to discover their hands and develop hand-eye coordination</p>	<p>Spastic Cerebral palsy</p>	
	<p>b.Symmetrical Passive extension of head in prone position</p>	<p>Extension of both upper limb& flexion of both lower limb</p>	<p>3 month</p>	<p>6 month</p>	<p>It helps your newborn to discover their hands and develop hand-eye coordination..</p>	<p>Cerebral palsy</p>	
<p>16.Galant or Trunk incurvation</p>	<p>Stroking infant back alongside spine</p>	<p>Hip move towards stimulated side</p>	<p>At Birth</p>	<p>4weeks</p>	<p>Its purpose is to encourage movement and develop range of motion in the hip in preparation for walking and crawling.</p>	<p>The lack of a reflex may indicate spinal cord immaturity.</p>	

17.Dance or stepping or walking	If infant is held such that sole of foot touches a hard surface	There is reciprocal flexion and extension of legs	At Birth	3-4weeks	It prepares a child to walk, and it recurs around 12 months	The complete absence of the stepping reflex in infants, as well as its persistence after 4 months, may be due to a variety of factors, including motor nerve damage and significant neurological deficit after birth.	
18.Crawl	When placed on abdomen	Infant makes crawling movement	Birth	4weeks	Important sign of nervous system development and function.	The lack of this reflex in a newborn is a warning sign of underlying neurological injury.	 Crawl reflex ADAM
19.Parachute	Holding the child in ventral suspension and suddenly lowering him to the couch	Arms extend as a defensive reaction	6-9 months	Does not disappear	Parachute reflex will help keep baby from getting seriously hurt.	A symmetrical in spastic hemiplegia. Absent or abnormal in children with cerebral palsy	

20.Landau	In the prone position, the baby is placed horizontally in the air.	Head elevated and legs slightly flexed in a convex arc.	3 months	12-24 months	This ability develops the gross motor cooperation and coordination between the top and bottom, and front and back of the body system.	Hypotonia, hypertonia, and behavioural abnormalities may all cause a lack of reflex.	
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[4-32]

Conclusion

Newborn reflexes form the foundation for future growth in the first moments and even months of life. Movement that begins as a reflex quickly transforms into conscious, cognitive, and physical activity [33]. A reflex's existence and strength are essential indicators of nervous system development and function. Many infant reflexes fade away as a child grows older, but some persist into adulthood. A reflex that persists after the age at which it should have vanished may be a sign of damage to the brain or nervous system.[34]

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