**Four Primitive (Survival) Reflexes**

**And some references**

**Moro Reflex**

First phase: Head retroflexion, causing arms and legs to open out from characteristic neo-natal flexion, rapid inspiration, eyes widen, skin colour reddens.

Second phase: return to flexion, expiration, perhaps crying, skin colour normalises.

*Emerges:* 9-12 weeks in utero. *Integrated:* 3-4 months (transforms to adult startle reflex). *Function:* Protective – development of breathing – energises birth process – triggers extension after 9 months in flexion – prepares for head support – activates flight/fight response – alerts, summons assistance. *Activated by:* Sudden change of head or body position (vestibular challenge) – sudden change of light, sudden noise, sudden temperature change or pain, smoke or other unfamiliar smells. *Possible effects of unintegrated reflex:* Hypersensitivity and over-reactivity to certain stimuli – Vestibular problems, e.g. motion sickness – poor balance and coordination – difficulty processing rapidly approaching stimuli, e.g. catching a ball – stimulus-bound effect (cannot ignore irrelevant visual information) – insecurity, anxiety – dislike of sudden noise or bright light – dislike of change – panic disorder.

**Tonic Labyrinthine Reflex**

Activated by: change of head position backward or forward through mid-plane. If backward, causes extension of spine, arms and legs, if forward, causes flexion of spine, arms and legs.

*Emerges:* TLR forward, 3-4 months in utero, TLR backward, at birth. *Integrated:* TLR forward, 3-4 months, TLR backward, 2-3.5 months. *Function:* Facilitates flexion and extension to develop muscle tone and control – development of extensor tone helps straighten baby out from foetal position – interacts with other reflexes to develop head control, balance, postural stability. *Possible effects of unintegrated reflex:* Difficulties with balance - poor muscle tone - affects timing of signals from body to balance system and related circuits, e.g. visual control - Vertigo or motion sickness (beyond puberty) – poor orientation – auditory confusion.

**Asymmetrical Tonic Neck Reflex**

Activated by: turning head to one side, causing arm and leg of the same side to extend, and opposite limbs to flex.

*Emerges:* About 18 weeks in utero. *Integrated:* In its crude form, around 6 months, but remains as an ‘attitudinal reflex’, temporarily appearing when balance is threatened. *Function:* Facilitates movement in the womb – turning the head when prone helps baby to breathe – breaks up the total pattern of Moro/TLR by dividing the two sides of the body (homolateral movement) – develops eye/hand coordination and reaching. *Possible effects of unintegrated reflex:* Problems crossing the mid-line - affects development of cross-pattern movements, bilateral integration, establishment of preferred side - problems with eye movement independently of the head, and hence visual tracking.

**Symmetrical Tonic Neck Reflex**

Activated by: raising or lowering the head. Raising the head causes arms to extend, legs to flex, lowering head causes arms to flex, legs to extend.

*Emerges:* immediately after birth, for a short time, then disappears, re-emerging 6-9 months. *Integrated:* 9-11 months. *Function:* Helps baby to get up off the ground – aligns pelvis and occiput ready for being upright – breaks up total flexion/extension of TLR *and* homolateral pattern of ATNR – helps visual adjustment from near to far distance. *Possible effects of unintegrated reflex:* Poor upper and lower body integration (e.g. in swimming, somersaults etc.) – postural tone – Hypotonia – poor eye-hand coordination in movement towards and away from the body – problems in copying – vertical tracking.

Goddard Blythe, Sally, The Well Balanced Child, 2005.

Ibid., Reflexes, Learning and Behaviour, A Window into the Child’s Mind.

Brandes, Bonnie L., The Symphony of Reflexes, 2015.

Hannaford, Carla, Smart Moves, Why Learning Is Not All In Your Head, 2005 (Not specifically about reflexes, but a wonderful overview of brain development and the primary importance of movement in learning).

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