SF-EI Guidelines: Observe, adapt, and plan

Pam Versfeld pam@skillsforaction.com

3-6 months: Supine

Importance of supine assessment

Spending time in supine when awake, active and moving is important for infant development as this is the first position that infants can independently explore the environment and learn to stabilize the trunk to allow for more differentiated and goal directed movements of the limbs.

Observation of the infant's abilities in supine provide valuable insights into the the different aspects of behaviour that influence present behaviour:: level of alertness, general level of activity, motivation to move, approach/avoidance behaviours, attention and persistence, and engagement with social and physical environment.

Lying supine, especially if the trunk is slightly raised, provides an opportunity for infants to look towards interesting events in the environment.

Infants also learn to reach for and pick up toys that are placed within easy reaching distance.

Before you start

1 The first step is to **listen to the parent's views** of their infants' abilities in supine.

2 **Explain purpose of assessment:** to identify the infant's abilities, especially strengths, and explore ways to enhance the variability and complexity of the infant's actions in ways that will promote progress along the developmental pathway and towards identified goals.

> Assessment is an opportunity for parents to gain insight into their infant's abilities, the factors that enhance and constrain progress towards goals and identify ways to enhance perceptual motor learning and social interaction.

3 **Explain the process:** observation, adaptation, planning learning opportunities and practice sessions

► The infant's actions are first **observed** to identify abilities, strengths and difficulties and atypical movement patterns.

► Observation is followed by trying different **adaptations to the environment** to encourage the infant to become more active, produce more complex and variable movements, and explore different ways of moving and interacting with the environment.

► **Discovery of goals:** parents are encouraged to use insights from observation of infant's strengths and abilities and responses to adaptations in the environment to formulate goals for intervention.

► **Collaborative planning, during or at the end of the session.** Parents and therapist together figure out ways to incorporate learning opportunities into daily routines and dedicated practice sessions.

Observation

Let the infant lie on a firm, flat surface. It is best to observe the infant wearing only a nappy/diaper and thin layer of clothing, if possible with the limbs exposed. If the room is warm enough and the caregivers have no objections, let them remove all other clothing. Some infants get upset when their clothes are removed, so it may be that you have to compromise on the clothing.

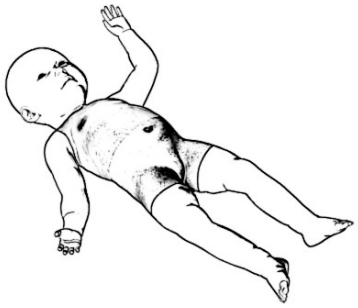
Posture and movements of the head and and neck

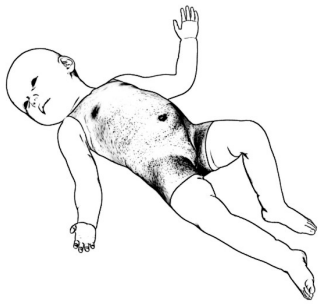
By 3 months infants will usually have good control of head posture, stability and movement.

► Infants have learned to maintain the head in the midline, especially when looking at an interesting event or object.

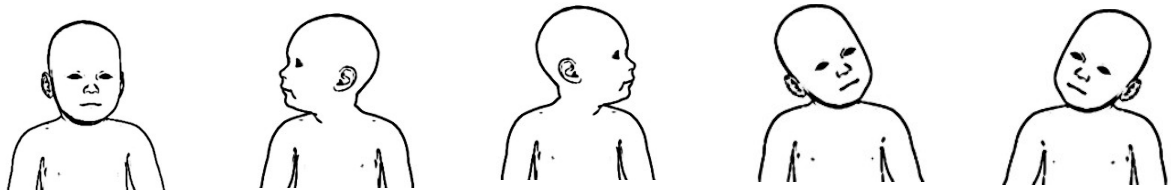
► Head on neck flexion is seen when looking down.

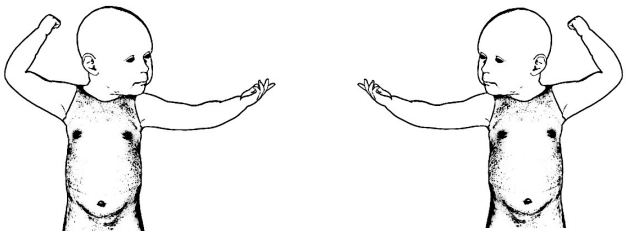
► Infants turn the head through full range to look towards an event or object.





Typical	**Observed**
Lies with head in midline most of the time	**Yes**
Head-on-neck flexion present	**Yes**
Head turned some of the time - especially when looking at an event in the environment	**R L**
Head position does not influence arm posture	**Yes**
Atypical	
Maintained midline position of the head not observed	**Yes**
Head tilted laterally – often associated with neck rotation (torticollis).	**R L**
Keeps head turned to one side most of the time – associated with neck extension.	**R L**
Infant's head rotation is strongly associated with fencing posture of the UEs	**R L**



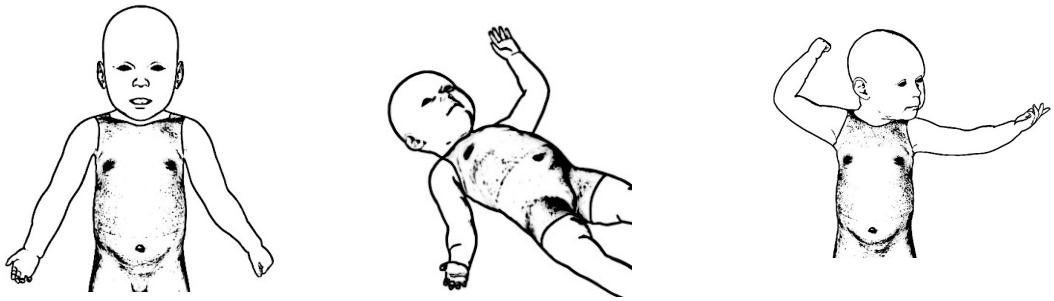


Posture of the upper extremities during periods of relative quiet

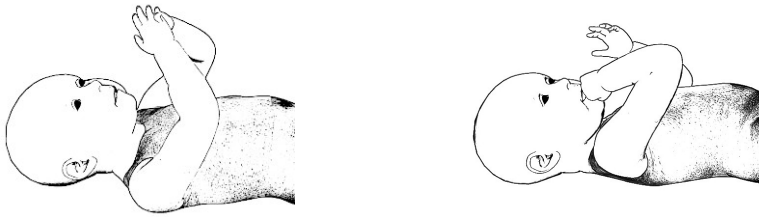
Infants display a range of different postures of the upper extremities when lying supine.

► When at rest the infant will usually lie with the shoulders in abduction with variable amounts of lateral rotation and elbow flexion (Bly 1994).

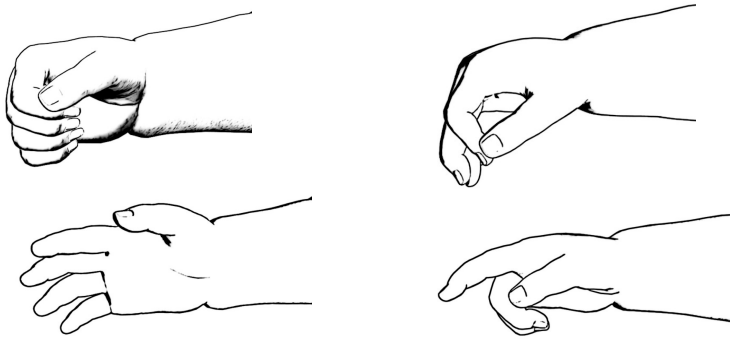
► Head rotation is sometimes associated with the ATNR (fencing) posture, but this is not obligatory.



► Infants also often bring the hands to the midline and to the face and mouth.

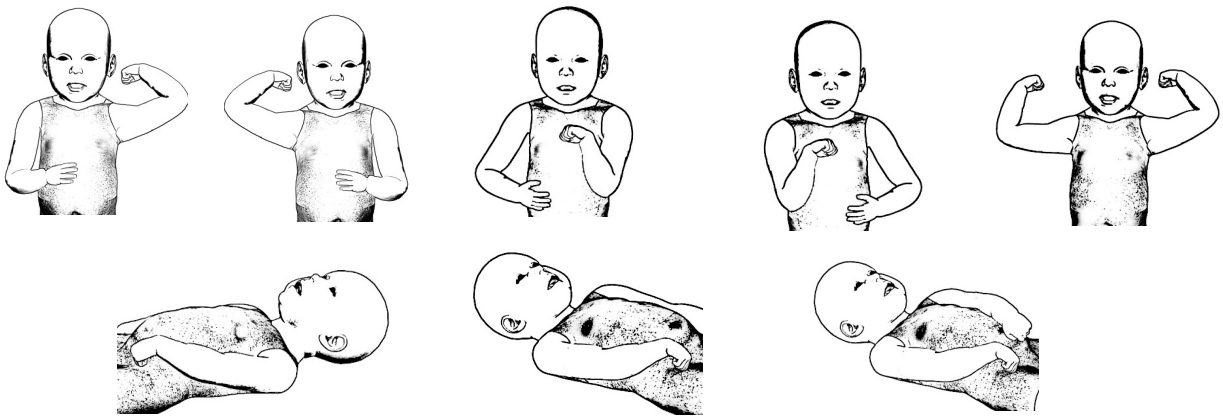


► The fingers are often loosely flexed, but open hand and isolated movements are also present, including pointing and thumb to forefinger.



Typical	**Observed**
Shoulders are abducted with some degree of lateral rotation and elbows flexed or extended.	**R L**
Hands lifted to midline	**R L**
Hands to face and mouth	**R L**
Fingers are lightly flexed (lightly fisted)	**R L**
Isolated finger movements and different hand posture observed	**R L**

Atypical	
S add with upper arm positioned close to the torso, E ext and W flex	**R L**
S add with E flex, FA pronation, W flex	**R L**
S abd , lat rot with E flex, FA pronation, W flex	
Hands tightly fisted	**R L**
Thumb in palm	**R L**

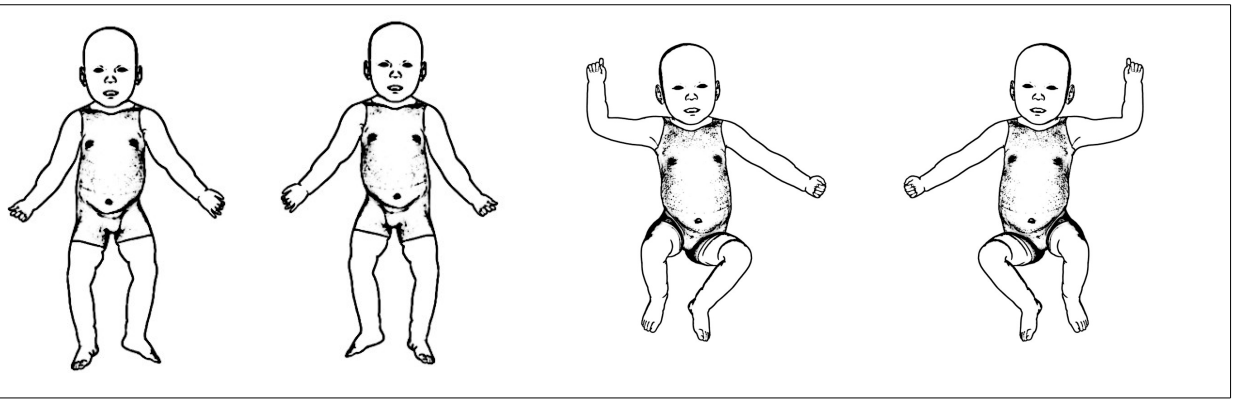


Trunk posture and stability

By 4-5 months infants usually lie with spine straight and the pelvis level and have learned to stabilise the trunk in the midline when moving the extremities.

Small range lateral movements of the trunk are observed – this postural sway provides the brain with the proprioceptive feedback it needs to regulate trunk posture and stability.

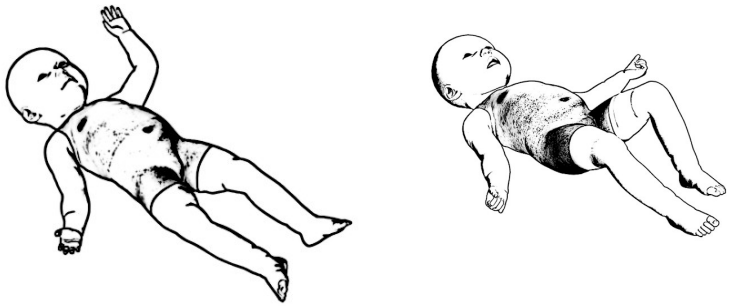
Typical	**Observed**
Trunk symmetrical most of the time when at rest	**Yes**
Trunk steady when moving: kicking and reaching	**Yes**
Lateral pelvic tilt observed some of the time with hip movements (before 4-5 months)	**Yes**
Small range lateral displacement of the trunk is observed (postural sway)	**Yes**
Atypical	
Lateral pelvic tilt with trunk lateral flexion present to one side	**R L**
Pelvis rotated back on one side	**R L**



Lower extremity posture when not actively kicking

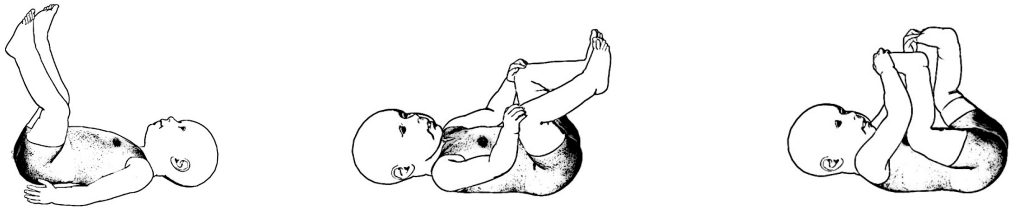
The lower extremities adopt a variety of different postures when the infant is at rest and not actively kicking.

► Hips and knees may be extended or in varying degrees of flexion with the feet resting on the support surface (SS).



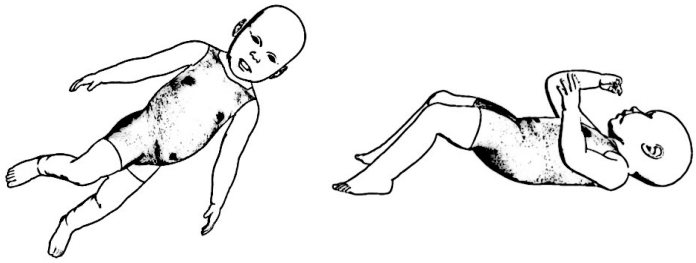
► Hip flexion with knee flexion or extension observed from 4-5 months.

► Infants also start to bring hands to knees and feet. This action is associated with posterior pelvic tilt.



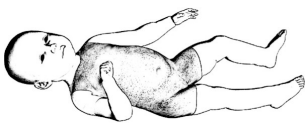
► When lying with one foot on the SS the infant may push down and at the same time extend the hip with forward rotation of the pelvis.

► Bridging, lifting the buttocks up off the SS, is also seen.



Typical	**Observed**
Hip and knee of one or both LEs may be extended with varying degrees of ankle dorsiflexion/plantar flexion	**Yes**
Hip flexion with knee flexion and the foot on the SS	**Yes**
Flexion of both hips with feet lifted up off the SS with varying degrees of knee extension	**Yes**
Hands to knees	**R L**
Hands to feet	**R L**

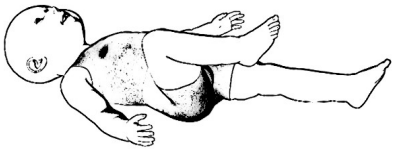
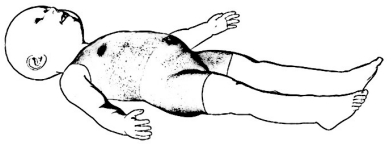
Atypical	
H and K extended with H adduction	**R L**
H and K flexed with hip abduction and lateral rotation	**R L**



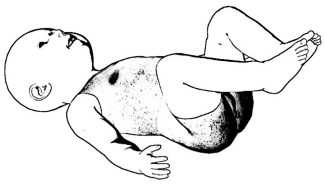
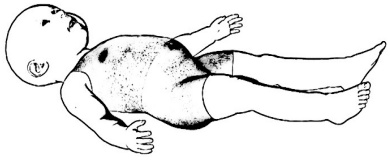
Kicking

Infants at this age, when awake and alert, will usually engage in bouts of kicking interspersed with periods of minimal LE activity.

A kicking action consists of H flexion with associated H abduction and lateral rotation and K flexion, followed by H and K extension associated with few degrees H abduction.

Bilateral kicking actions are also present, alternating between bilateral hip and knee flexion and bilateral hip and knee extension.

Hip, knee and ankle movements are are still coupled in younger infants. The foot is held in DF with a small decrease in the range of DF when the LE is extended. The range of ankle movement increases with age, with more plantar flexion observed.

If the infant is not very active, **raising the infant's level of arousal** by talking to them or providing an interesting object for the infant to look at will usually lead to more kicking actions.

A **small bell attached to one ankle** will also stimulate more LE activity.

Typical	Observed
Unilateral single LE kick	**R L**
Repeated kicking with one LE	**R L**
Reciprocal kicking actions	**Yes**
Bilateral kicking with both LEs flexing and extending at more or less the same time.	**Yes**
Hip extension is associated with a small range of hip abduction.	**R L**
	R L

Atypical	
Kicking movements are not fluent with jerky transitions from flexion to extension	**R L**
One leg is less active than the other	**R L**
Extension of the hip is associated with hip adduction.	**R L**

Reaching and exploring surfaces

From soon after birth infants start to reach towards interesting objects that are within reaching distance and also actively explore the environment by moving their hands and fingers across different surfaces, including their bodies, clothing and support surfaces.

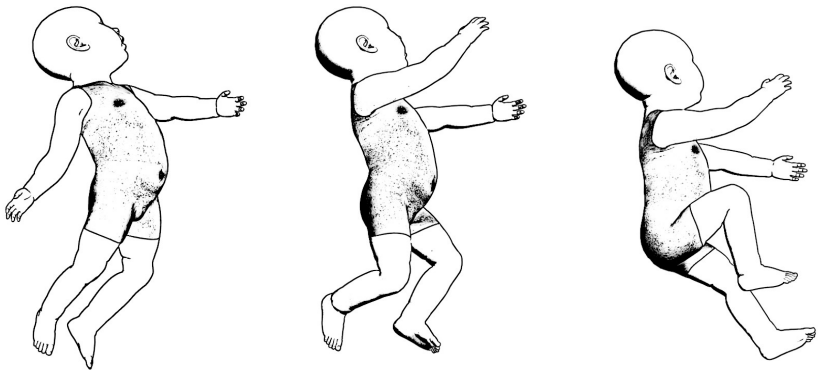
Typical	**Observed**
One hand reaches towards/grabs interesting object that is within easy reach	**R L**
Reaches towards/grasps interesting object with both hands when presented in the midline	**Yes**
Holds object with one hand, uses fingers of other hand to explore object	**Yes**
Explores body and clothing with hand - rubbing, grasping	**R L**
Explores surrounding surfaces with hand and fingers – rubbing, grasping	**R L**
Explores surfaces with foot	**R L**
Foot play – explores one foot with the other	**Yes**
Atypical	
One hand moves less than other	**R L**
Does not initiate reaching or grasping	**R L**
Hand held fisted, thumb in palm	**R L**

Rolling

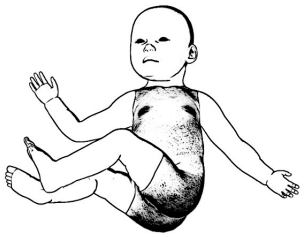
From the 4-5 month infants start to initiate rolling from supine to prone. At first they roll onto their sides but with practice, persistence and trial-and-error they roll all the way into prone.

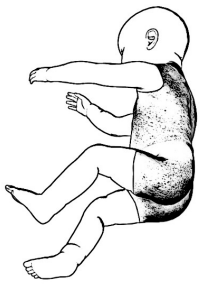
Infants find many diverse ways to initiate rolling - there is no right way to do this.

► Sometimes infants press down on one foot, extend the hip to rotate the pelvis forwards, with rotation of the chest following.



► At other times the infant flex both hips, moves the lower extremities to one side then topple over to the side.





► The infant may initiate rolling by reaching across the body for a toy - often this action is associated with neck and upper trunk extension.

Typical	**Observed**
Rolls from supine to side lying	**R L**
Rolls supine to prone	**R L**
Initiates by pushing down on one foot	**R L**
Initiates by reaching across with one hand	**R L**
Initiates by lifting both LEs	**R L**
Atypical	
Rolling to side lying not observed	**R L**
Rolling to prone not observed	**R L**

Adaptations to encourage more complex or new behaviors

Head and trunk support to increase limb movement

Lying on a soft pillow molded to provide support

► Let the infant lie on a pillow - mold the pillow a little to create a hollow so that the trunk is provided with some lateral support.

Observe changes in the infant's movement behavior

Soft roll under head and shoulders

► Roll a soft fleece blanket into a long roll. Let the infant lie with their head and shoulders on the middle of the roll and tuck the rest of the blanket in next to the torso.

Lifting the head and supporting the arms in this way will often assist the infant to lift the hands to the midline and increase hands-to-face actions.

Folded towel under buttocks to encourage posterior pelvic tilt

► Fold a towel to make a square cushion. Flex the infants hips and knees and position the cushion under the buttocks so that the pelvis is tilted backwards.

In this position the infant may find it easier to maintain a flexed LE position with the feet lifted up off the SS>

Adaptations that encourage exploration and engagement

Dangling a toy close to one hand

► Dangle an interesting toy that makes a noise when jiggled, close to the infant's hand. Briefly jiggle the toy to catch the infants attention. Wait for the infant to respond - this may take some time so be patient.

Infants will often reach for and play with a toy that is positioned within very easy reach.

Different support surfaces

► Let the infant lie on a support surface that makes a noise when the infant moves.

A plastic carrier bag inserted into a pillow case and positioned under the infant provides an interesting but not too loud noise.

Movement of the infant's foot on the adapted SS will provide a novel and interesting sensation and often prompt the infant to start exploring this new SS with the feet.

Bell or ribbon on the ankle or wrist

► Attach a small bell or brightly colored ribbon just above one ankle or wrist to encourage kicking and moving the arm.