Developmental positioning

This policy has been prepared for preterm and sick term babies in Newborn Care and does not apply to babies discharged home.

The NICU environment is extremely different from that within the uterus. Preterm infants are noted to be physiologically hypotonic \(^1^,\text{4}\) and they are subject to the effects of gravity and immobilisation on a firm surface for prolonged periods. Poor positioning can lead to positional disorders, such as muscle imbalances and the development of a ‘flattened posture’ \(^1^,\text{3}\), which have potential to impact on future development \(^1^,\text{3},\text{5},\text{6}\). Correct positioning of infants may reduce these disorders without harmful effects \(^1^,\text{3},\text{6},\text{10}\). The benefit of correct positioning is the enhancement of infant comfort and reduction of stress in infants \(^7,\text{8}\).

Aims

- Facilitate physiological flexion and active flexion of the trunk and limbs.
- Encourage a balance between extension and flexion.
- Prevent positional disorders.
- Prevent secondary posture and movement problems - muscle imbalances such as tight hip external rotators, tight neck and thoracic extensors, tight shoulder retractors and weak neck flexors.
- Encourage midline orientation such as hands to face and hands to midline.
- Achieve more rounded heads and active head rotation, and prevent high palate problems.
- Promote smooth anti-gravity muscle activity and the development of normal movement patterns.
- Enhance comfort and reduce stress – promote stability of behavioural state through containment and security.

Methods for monitored babies in incubators

The containment of monitored babies in incubators is by the use of a ‘nest’. This provides a boundary for containment and promotes a flexed posture. The nest is our way of replicating the position of a baby in utero.

- Create a ‘nest’ using rolled nappies or blankets (depending on the size of the baby) in a ‘U’ shape to provide boundaries to push against and minimise the effects of gravity.

- Cover rolled nappy or blanket with a wrap, flattening the top of the ‘U’ shape and emphasising the curve by conforming the wrap around the curve.
- Place baby wholly within nest or place baby’s bottom against curve with legs flexed over the end.
- Ensure shoulders are protracted and supported by the nest.
- Use a narrow sheet as a seat belt over hips to further contain baby in the nest, with legs flexed.
- Alternate and/or incorporate supine, lateral, prone and sitting positions at care times \(^1^,\text{3},\text{8}\).

![Figure 1: Steps in creating a ‘nest’](image-url)
In all positions aim for:
- Head in midline
- Shoulders protracted (forward)
- Hips toward midline
- Knees flexed
- Face to midline
- Feet neutral\textsuperscript{15,4}

Critically unstable babies should alternate between supine and ¼ off supine. If there are no umbilical lines and no other contraindications, prone positioning and ¼ off prone should also be used\textsuperscript{5}. Once stable, babies should be also nursed in a side lying position. Neck position should be neutral with no excessive flexion or extension, as this may impede breathing.

Babies requiring long term ventilation or CPAP may also be supported in sitting for brief periods (after individual assessment) to encourage movement through space and facilitate vestibular development\textsuperscript{4,10}.

Once babies are in cots they should be swaddled with their upper and lower limbs flexed and their hands to their mouth.

Specific positions

**Supine**

A ‘nest’ is used around the baby to maintain the shoulders and hips in the mid position. The knees and elbows supported off the cot surface to reduce hip and shoulder abduction.

The nest should provide postural stability yet not restrict the baby’s movement. The baby can also be placed ¼ off supine.

**Prone**

The baby is positioned with some pelvic elevation so that the legs are weight bearing through the anterior knee and lower legs and the hips are not flexed more than 90°.

A ‘nest’ is used to maintain hips and knees in the mid position and therefore prevent excessive hip abduction and to provide containment. Arms are kept adducted near the body with hands near the mouth to encourage hand-to-mouth orientation\textsuperscript{15}.

If the baby is unable to maintain pelvic elevation both knees may be faced in the same direction in a ¼ off prone position. This position reduces the weight-bearing pressure on the bony structures in the face, which contribute to lateral craniofacial flattening and palatal narrowing\textsuperscript{17}.

**Side lying (lateral position)**

This position is used once the babies are physiologically stable. Side lying encourages flexion and symmetry\textsuperscript{16}. The trunk should be supported perpendicular to the mattress\textsuperscript{1}.

A rolled blanket behind the baby will provide boundaries and provide proprioceptive input to the baby\textsuperscript{4}. A rolled nappy between the legs will maintain the position and maintain neutral lower leg position\textsuperscript{15}. Hands should be brought together or to the face/mouth.
**Head support in supine position when awake**

Use a peanut-shaped pillow to support baby’s head in the centre position when awake and lying on their back for nappy changes, dressing or undressing and drying after a bath.

**Methods in cots or incubators for babies of 35 weeks or more (corrected) gestation**

**Supine**

Babies around 35 weeks corrected gestation may be placed in a cot or in an incubator. At this time babies are to sleep supine only, in accordance with SIDS and Kids guidelines. Babies should be swaddled with their hands to face and their lower limbs flexed. Care should be taken with infants unable to maintain their head in midline by ensuring they face in different directions following each episode of care, to prevent neck tightness and head flattening.

**Head support in supine position when awake**

A peanut-shaped pillow may be used to support the baby’s head in the centre position when awake and lying on their back. Using the peanut-shaped pillow allows the baby to focus on the carer, encouraging eye to eye contact. This position to be used for nappy changes, dressing or undressing, drying after a bath or for sitting in a chair when awake. **Do not leave the peanut-shaped pillow or fabric roll in cot when the baby is asleep.**
**Sitting**

Stable babies in incubators will benefit from supported sitting for brief periods when awake. Initially support the baby’s head and trunk as if burping the baby. Progress to gentle rocking side to side and from back to front as this will provide vestibular input.

Once infants are in cots, all positioning must follow SIDS guidelines for safe sleeping. When infants are asleep or preparing for sleep they are positioned in the supine position with no supports, bolsters or pillows in the cot. The baby’s head position can be alternated to either side to encourage symmetrical moulding of the head. Babies are swaddled with their hands to their face and lower limbs flexed.

During supervised awake times, positioning continues to encourage head in midline, hands to face and to midline, and hips and knees flexed. A peanut pillow can be used during nappy changes and routine care. A rolled blanket or towel can be placed under the infant’s legs to encourage a flexed posture. Parents are shown how to hold and move their baby to begin to develop early head control in different positions, as well as reinforcing positioning that encourages flexion of limbs and hands to midline.

Once baby is in a cot and able to maintain an awake state for more than 20 minutes, they can start sitting in a ‘Baby-sitter’ chair to promote spinal flexion, shoulders forward, head moulding and a more alert state. A mobile placed in front of the baby will encourage visual stimulation.

**Outcomes**

- Flexor movement patterns and balance between flexor and extensor muscle tone
- Smooth anti-gravity movements
- Rounded heads and active head rotation
- Midline orientation, which contributes to hand – mouth coordination
- Parents confident in handling and positioning
- Comfortable and stress reduced infants
- Promotion of normal neuromuscular and osteoarticular function with development of spontaneous and functional motor capacity.
References


