

Developmental delay due to supine positioning

Piu T, Eldridge B and Galea MP. A review of the effects of sleep position, play position and equipment use of motor development of infants. *Development Medicine and Child Neurology* 2007; 49:858-867.

Motor development is seen to depend upon various factors that may reside in the infant or in the environment. If the environment in which the infant is placed plays a role in its motor development, varying the positions of the infant during sleep or wakeful time have an impact on their motor development. Since the observation in 1992 that sudden infant death syndrome (SID) may be associated with infants sleeping in prone, parents have been urged to put their infants on their back while sleeping. Some researchers expressed concerns that the supine sleeping position seemed to delay the motor development of the infants. In their survey of 100 parents, Mildred et al. found that in 37% the knowledge of SIDS influenced the play positions of their infants and that 26% of parents reported that they never placed their infants in prone for play, despite the fact that wakeful time in prone is not a risk factor for SIDS. Varying positions for the infants is believed to be important for their motor development and the prone position of particular importance in the development of head control and anti gravity extension.

Prone extension is essential for the development of stability in various weight-bearing positions such as prone-on-hands, on all fours and sitting. Hence, lack of experience in the prone position may have a detrimental effect on the motor development of the infants.

In a study published in *Development Medicine and Child Neurology*, Piu, Eldridge and Galea review the effects of sleep position, play position and equipment use on motor development of infants. Consistent findings were found in the studies reviewed:

- In healthy infants born at term, those who spent time in prone when awake achieved developmental milestones significantly earlier than those who did not or who spent limited time in prone when awake in the first 6 months of life.
- Although there were statistically significant difference in motor development in early infancy between infants who spent time in prone when asleep or awake and those who did not, most of these healthy infants born at term walked independently or developed within normal age limits.
- Low-risk preterm infants who slept in supine attained head control and rolling between supine and side and bringing hands to midline significantly slower than infants sleeping in prone or non-supine positions. All these preterm born infants walked independently within normal age limits.
- In very-low-weight with and without preterm white matter disease prone sleeping and playing were significantly and positively associated with motor development at all ages as measured by milestone acquisition and motor function as measured by the Alberta Infant Motor Scale (AIMS).

In conclusion, a systematic review of the impact of sleep/play positions on infant motor development has shown that there is a transient delay in attainment of developmental milestones in healthy infants if they have not been exposed to a prone position, but most of the infants walked independently within normal range. Subtle differences in movement patterns have been shown between infants who spent time in prone and those who did not.