

## Infant Positioning and Reflux

**Question** (received on 8/11/2012)

A mother whose baby is six weeks old and just diagnosed with gastric reflux has received information from her GP which conflicts with safe sleep messages she has received. Her GP promoted the use of the car seat - "this will be your new best friend" and propping the baby, to help the baby settle. The mother's understanding now is that it is safe for her baby to spend extended periods of time in the car seat and to sleep in the car seat, even though she is aware of the importance of safe sleeping principles and the reasons behind face-up, face clear, enabling a clear airway, avoiding any position that brings the baby's chin to the chest, and these principles have been discussed multiple times during her pregnancy and since her baby has been born. I am aware that gastric reflux in new-borns presents challenges for settling babies but that the practices around safe sleep are essential. We have discussed this again and I will also approach her GP. I have been unable to find any other information directly relating to gastric reflux on the website. Gastric reflux is not an uncommon problem and therefore would be an important issue to comment on in the forum page of the website.

**Our Response** (posted on 22/11/2012)

We are consulting clinical experts in NZ and will post their responses once received. For now, below is a piece taken from the **Clinical Practice Guidelines** of NASPGHAN and ESPGHAN on paediatric reflux and its positional management.

To summarise, these are the key points:

- Reflux is reduced in the 'flat prone' vs 'flat supine' position (and 'left side down' vs 'right side down' side position). However, evidence of increased risk of sudden infant death from prone and side positioning resulted in a reassessment of reflux management options. Prone and side positioning are **no longer recommended** unless babies are awake and supervised, or reflux is life-threatening itself.
- Reflux is the same or worse in babies placed 'supine with head elevated' vs 'supine and flat'. Therefore 'supine and flat' when babies are asleep should be recommended for both managing reflux and preventing sudden infant death.
- Reflux is made worse in the 'car seat' position ('partial supine').
- Reflux is reduced in the full upright position.
- There is no evidence supporting reduced reflux from having the 'head elevated' for any position.

### Change for our Children guidelines

Informed by the evidence below, best practice for positioning babies with reflux is:

- When asleep, **'supine and flat'**.
- When awake, positions more likely to reduce reflux include:
  - lying baby **'flat and on the tummy'** across an awake adult's lap or **'flat and on the tummy'** securely along an awake adult's arm
  - lying baby **'on their left side'** and along an awake adult lap
- Whether baby is awake or asleep, an awake adult holding a baby **'fully upright'**.

## Reference

### **Pediatric Gastroesophageal Reflux Clinical Practice Guidelines: Joint Recommendations of the North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition (NASPGHAN) and the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN)**

Journal of Pediatric Gastroenterology & Nutrition: October 2009 - Volume 49 - Issue 4 - p 498-547 doi: 10.1097/MPG.0b013e3181b7f563 Clinical Practice Guideline

([http://journals.lww.com/jpgn/Fulltext/2009/10000/Pediatric\\_Gastroesophageal\\_Reflux\\_Clinical.22.aspx](http://journals.lww.com/jpgn/Fulltext/2009/10000/Pediatric_Gastroesophageal_Reflux_Clinical.22.aspx))

#### **From: Positioning Therapy for Infants**

Several studies in infants have demonstrated significantly decreased acid reflux in the flat prone position compared with flat supine position <sup>(232-236)</sup>. There is conflicting evidence as to whether infants placed prone with the head elevated have less reflux than those kept prone but flat <sup>(232-234,237)</sup>. **The amount of reflux in supine infants with head elevated is equal to or greater than in infants supine and flat** <sup>(232,234,238,239)</sup>. The semisupine positioning as attained in an **infant car seat** exacerbates GER <sup>(240)</sup>. Although the **full upright position appears to decrease measured reflux**, 1 study suggested that using formula thickened with rice cereal is more effective in decreasing the frequency of regurgitation than upright positioning after feeds <sup>(223)</sup>.

In the 1980s, prone positioning was recommended for the treatment of GERD in infants because studies showed less reflux in this position. Prone sleep positioning is associated with longer uninterrupted sleep periods and supine sleep positioning with more frequent arousals and crying <sup>(241)</sup>. However, **concerns regarding the association between prone positioning and sudden infant death syndrome (SIDS)** required a reassessment of the benefits and risks of prone positioning for reflux management. The Nordic Epidemiological SIDS Study demonstrated that the odds ratio of mortality from SIDS was more than 10 times higher in prone-sleeping infants and 3 times higher in side-sleeping infants than in supine-sleeping infants <sup>(242-244)</sup>. Therefore, prone positioning is acceptable if the infant is observed and awake, particularly in the postprandial period, but prone positioning during sleep can only be considered in infants with certain upper airway disorders in which the risk of death from GERD may outweigh the risk of SIDS. Prone positioning may be beneficial in children older than 1 year of age with GER or GERD whose risk of SIDS is negligible.

Esophageal pH and combined pH/MII monitoring show that reflux is quantitatively similar in the left-side-down and prone positions. Measured reflux in these 2 positions is less than in the right-side-down and supine positions <sup>(234,245-247)</sup>. Two impedance studies of preterm infants found that postprandial reflux was greater in the right-side-down than in the left-side-down position <sup>(173,235)</sup>. Based on these findings, 1 study recommended that infants be placed right-side-down for the first hour after feeding to promote gastric emptying and then switched to left-side-down thereafter to decrease reflux <sup>(173)</sup>. These findings notwithstanding, it is important to note that **side-lying is an unstable position** for an infant who may slip unobserved into the prone position. Bolstering an infant with pillows to maintain a side-lying position is not recommended <sup>(248)</sup>.