

negative effect of supine positioning.

## Breastfeeding

- In a systematic review of 11 randomized- and quasi-randomized-controlled trials examining the use of breastfeeding to reduce vaccine-related pain, the breastfed infants cried for shorter periods of time and had less increased heart rates than swaddled infants or infants offered a pacifier ([Shah, Aliwalis, and Shah, 2007](#)). Infants who breastfed during the procedure cried for the shortest amount of time, followed by swaddled infants held by their mothers. Infants who were held by research assistants cried the most. Breastfeeding does not appear to impact blood pressure or oxygen saturation, but the breastfed infants' heart rates did not increase as much as non-breastfed infants. There was no difference in crying time or pain scores for infants offered high doses of sucrose (2 ml of 12% sucrose in sterile water) compared to the breastfeeding infants. Breastfeeding, where feasible and appropriate, is recommended over sucrose because breastfeeding is a no-cost intervention, promotes mother-infant bonding, provides comfort to the infant, and may encourage mothers to breastfeed.
- Sixty-six infants between 2 and 4 months old were randomized to receive a routine DTap vaccine while breastfeeding or standard care (swaddled and placed in bassinet) ([Efe and Ozer, 2007](#)). Pain was measured using change in heart rates, oxygen saturation levels, and duration of cry. Crying time was shorter in the breastfed group compared to the control group, but heart rate and oxygen saturation were unaffected by breastfeeding.
- One hundred twenty infants younger than 1 year old were randomized to either standard care or breastfeeding during administration of a routine pediatric immunization ([Abdel Razek and Az El-Dein, 2009](#)). Pain was measured using the Wong-Baker FACES Pain Rating Scale, Neonatal Infant Pain Scale (NIPS), duration of cry, and changes in heart rate. The breastfeeding group experienced lower pain by all measures used, including change in heart rate. Care was taken in this study to ensure the