

## **To determine whether 24% sucrose solution given orally before insertion of a peripheral intravenous (PIV) catheter decreases neonatal pain” Cook et al (2016).**

### Abstract:

**PURPOSE:** To determine whether 24% sucrose solution given orally before insertion of a peripheral intravenous (PIV) catheter decreases neonatal pain.

**BACKGROUND:** Prior studies of pain caused by heel and arterial needlesticks found oral administration of 24% sucrose to significantly blunt pain during these painful procedures. No studies have evaluated this treatment with needlestick pain associated with PIV catheter insertion.

**METHODS:** Oral 24% sucrose or placebo solution was administered 2 minutes prior to PIV catheter insertion. Outcome measures were obtained prior to, during, and for 5 minutes after PIV catheter insertion. Investigators and caregivers were blinded to group assignment. Data were analyzed with longitudinal analysis of repeated measures, with  $P < .05$  for significance.

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**RESULTS:** A total of 40 neonates (24% sucrose:  $N = 20$ ; placebo:  $N = 20$ ) were studied. Pain scores significantly increased from  $3.2 \pm 1.6$  to a maximum of  $7.6 \pm 3.8$  at the time of catheter insertion, returning to baseline levels 8 minutes after PIV catheter insertion ( $P < .001$ ). No significant differences were found in pain, heart rate, or noninvasive oxygen saturation ( $SpO_2$ ) between the sucrose and placebo groups ( $P > 0.05$ ).

**IMPLICATIONS FOR PRACTICE:** Results from this study did not find that 24% sucrose administered prior to PIV catheter insertion altered the infant's pain response.

**IMPLICATIONS FOR RESEARCH:** Since this is the first study to evaluate the pain-blunting effects of 24% sucrose administration before PIV catheter insertion, replication of this study is needed before widespread application of findings.



Oral sucrose prior to peripheral intravenous catheter insertion  
decreases neonatal pain | 2

Reference:

Cook, L.M., Nichols-Dada, J., Damani, S., Lawrence, V., Layson, S., Mitchell, D., Muhammad, S., Samaniego-Yamin, L., Talley, J.W., VanNatta, B., Higgins, M. and Cooley, K. (2016) Randomized Clinical Trial of 24% Oral Sucrose to Decrease Pain Associated With Peripheral Intravenous Catheter Insertion in Preterm and Term Newborns. *Advances in Neonatal Care*. August 16th. .

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