Oral Sucrose Eases Immune Pain in Infants

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O
tal sucrose is known to be an ef-
fective measure for reducing pain in infants undergoing painful proce-
dures. Now a new study has shown that sucrose significantly decreases pain and distress when given to infants before im-
munizations.

The study comprised 83 infants, aged 2 months and 4 months. The infants were randomized, with careful blinding of the investigators and parents, to either 24% oral sucrose or sterile water, just before receiving a series of three immunization injections.

The results showed a 60% decrease in the mean pain score after the first injection for the 38 infants given sucrose, compared with the mean score of the 45 infants given sterile water, and a 78% decrease in the mean pain score at 2 min-
utes after the third injection, reported Linda A. Hatfield, Ph.D., of Pennsylvania State University, University Park, and her colleagues.

The highest mean pain scores for both groups were seen at the pain as-
essment at 7 minutes, which was imme-
diately after the third injection, Dr. Hat-
field and colleagues reported (Pediatrics 2008;121:e327-14).

At that point, the study group had a mean pain score 21% lower than controls. And 2 minutes after that last injection, when the difference in

the mean pain scores was 78%, the su-
crose-treated group had returned to show-
ing no pain response.

The pain scale used in the study was the University of Wisconsin Children’s Hospi-
tal Pain Scale, which uses five criteria to score pain responses: cry, facial expression, behavioral, body movement, and sleep.

The 24% sucrose solution was rendered orally from a syringe, after which the in-

fants were given a pacifier to suck. The dose given was 0.6 mL/kg, with the weight based on the average birth weight, and therefore equaled about a 2 mL dose.

The immunizations gave the combin-
ed diptheria, tetanus, acellular pertussis, hepatitis B, and polio vaccine, a Haemophilus influenzae type B vaccine, and the heptapenval for conjunctival vaccine. Each was given 2 minutes apart. Dr. Hatfield and her colleagues noted that sucrose had a higher score than controls, which is because it was shown to be an effective analgesic for term and preterm infants having varicella and heel lance procedures, and that the American Acad-
emy of Pediatrics recommends sucrose for minor painful procedures in neonates.

They also noted that it works very quickly, so that it can be given just 2 min-
utes before any procedure or injection. Based on their study, the number needed to treat to have one infant who showed minimal distress—
winning, but easy to console—at 2 minutes after sucrose administration was four. The number needed to treat to have one infant with minimal distress 2 minutes after a second injection was two.

Thus, pediatric care providers may need only a small number of providers to document the efficacy of oral sucrose in reducing pain associated with immuniza-
tion,” Dr. Hatfield and her colleagues said.

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