



# Sweet solutions: procedural pain in infants (up to 12 months of age)

## Intervention

Oral sucrose or glucose solutions – directly onto the tongue.

## Indication

Sweet solution given directly to the tongue causes an orally mediated increase in endogenous opioids.

One of the common causes of procedural pain in infants up to 12 months of age is immunisations.

Other painful procedures in infants include blood tests, suture removal, dressings and adhesive tape removal.

## Contraindications

Infants with known fructose or sucrose intolerance.

## Precautions

Sweet solutions are not suitable for lengthy or significantly painful procedures as sucrose and glucose have mild analgesic effects. They are only suitable for decreasing short-term pain during minor procedures.

Note that infants of mothers taking methadone during pregnancy may have altered endogenous opioid systems. Sweet solutions may have no analgesic effect for the first days to weeks of life.

## Availability

A pharmacist may be able to supply a ready mixed bottled product, which can be stored in the fridge.

Pre-packed products are available:

- TootSweet 24% Sucrose Solution by MedTel which can be purchased through The Royal Children's Hospital Comfort Kids program.
- Sucrose Oral Solution 24% by Phebra
- Sweet-Ease Natural by Philips

## Description

Either sucrose or glucose can be given, as long as they have sufficient sweetness, ie.

- 24% sucrose
- 30% glucose.

The recommended maximum dose of sweet solution is:

- Babies 0-1 months: 0.2 – 1 ml per procedure (up to 5mls in 24h)
- Infants 1-18 months: 1-2 mls per procedure (up to 5mls in 24h).

For multiple immunisations, the total dose of solution should be given prior to and throughout the procedure to ensure sustained effects.



## Description

It is important to administer the sweet solution directly onto the tongue. The steps are:

- Prepare the total amount of sucrose or glucose to be given orally, using an orange oral medication syringe
- Give approximately one quarter of the total amount 2 minutes before starting the procedure
- Offer a dummy if this is a normal part of the infant's care
- Incrementally give the rest of the solution throughout the procedure, as needed.

Analgesic effects peak at 2 minutes and last for 3-5 minutes.

## Tips and Challenges

### Tips

In addition to sucrose or glucose administration, distress may be reduced by:

- breast feeding or using a dummy
- full or partial swaddling
- holding and cuddling with parent or carer
- distraction.

## Training

The Royal Children's Hospital Melbourne has produced clinical guidelines for sucrose (oral) for procedure pain management in infants.

The Comfort Kids Program at The Royal Children's Hospital Melbourne has information for kids, parents and health professionals about minimising pain and distress during routine procedures.

## Grading

NHMRC Level 1 Evidence.

## References

Harrison D, Stevens B, Bueno M, Yamada J, Adams-Webber T, Beyene J, et al. Efficacy of sweet solutions for analgesia in infants between 1 and 12 months of age: a systematic review. *Archives of Disease in Childhood*. 2010; 95(6):406–13.

Stevens B, Yamada J, Lee GY, Ohlsson A. Sucrose for analgesia in newborn infants undergoing painful procedures. *Cochrane Database Syst Rev* 2013;1:CD001069

## Consumer Resources

Parents can access information through the Comfort Kids page.  
[www.rch.org.au/comfortkids](http://www.rch.org.au/comfortkids)