

SUCROSE

Trade Name	Syrup BP without preservative Biomed – for NICU use Syrup BP with preservative – for Maternity Ward use
Class	Analgesic
Mechanism of Action	Sucrose appears to elevate pain thresholds via endogenous opioid pathways. Its calming effect is due to acute central nervous system changes triggered by sucrose.
Indications	Painful or invasive neonatal procedures including: Venepuncture, lumbar puncture, bladder puncture, bladder catheterisation, iv cannula, peripheral arterial line placement, arterial stab, heelprick, im injection, gastric tube insertion, tape/tegaderm/suture removal, dressing change, longline insertion and removal, chest drain insertion and removal, ventricular tap, eye examination, echo, hearing screening
Contraindications	<26 weeks postconceptual age (PCA), parental refusal, medically paralysed, unsafe swallow (ie: pharyngeal incoordination) oesophageal atresia, tracheo-oesophageal fistula, known fructose intolerance, glucose-galactose malabsorption syndrome, sucrase-isomaltase deficiency.
Supplied As	Sucrose 67% solution without preservative for NICU Sucrose 67% solution with preservative for Maternity Ward use
Dilution	Use undiluted
Dosage	26-31⁺⁶ weeks (PCA) up to 0.1ml per procedure in 0.05ml increments ≥ 32 weeks (PCA) up to 0.5ml per procedure in 0.2ml increments
Interval	Maximum of 10 doses in 24 hours ie: Max of 1ml in 24 hrs for 26-31 ⁺⁶ weeks and Max of 5ml in 24 hours for ≥ 32 weeks
Administration	Oral: use a syringe to administer to the anterior part of the tongue, 2 minutes prior to painful procedure (not effective nasogastrically)
Compatible With	Not applicable – do not mix with any other medication
Incompatible With	Not applicable – do not mix with any other medication
Monitoring	Neonatal Pain Scale monitoring in applicable infants
Stability	NICU - Manufacturer's expiry and discard 7 days after opening Maternity Ward – Manufacturer's expiry or discard 6 months after opening (whichever date is shorter)

Storage	Room temperature, <u>not</u> in the fridge – sucrose may crystallise
Adverse Reactions	Due to hyperosmolarity of sucrose avoid in extremely unwell infants ie: infants with suspicion of NEC, confirmed NEC, septic shock
Metabolism	Oral sucrose is hydrolysed in small intestine by the enzyme sucrase to glucose and fructose, which are then absorbed. Duration of effect is 5-10 minutes
Comments	For infants of mothers on the methadone programme (Ngā Taonga Pēpi), due to inutero exposure to and tolerance of opioids, there could be a negligible response to sucrose as a result of affected opioid pathways. This does not preclude its use in these babies. The preservative contained in Syrup BP with preservative is a sodium hydroxybenzoate 0.15%
References	<ol style="list-style-type: none"> 1. Parfitt K (Ed). Martindale The Extra Pharmacopoeia, 33rd Edition, 2002 2. Noerr B. Sucrose for neonatal procedural pain. Neonatal Network Vol 20(7), 2001 3. Smith B. Diminished reactivity of premature human infants to sucrose compared with term infants. Developmental Psychology Vol 28(5), 1992. 4. Stevens B et al. Sucrose analgesia in newborn infants undergoing painful procedures. Cochrane Database of Systemic Review, Issue 3, 2004. 5. Best Practice Guideline – Assessment and management of neonatal pain. ANZNN. Sept 2007 6. Management of procedure-related pain in neonates. Paediatrics and Child Health Division RACP Guideline Statement. J Ped Child Health 2006;42:S31-9. 7. Johnston CC et al. Routine sucrose analgesia in the first week in neonates <31 weeks. Ped 2002;110:523-8. 8. Stevens B et al. Consistent management of repeated procedural pain with sucrose in preterm infants. Clin J Pain 2005;21:543-8.
Updated By	Kirsten Simonsen, Debbie O'Donoghue, Nicola Austin Debbie O'Donoghue, A Lynn, B Robertshawe Jan 2008 A Lynn, B Robertshawe August 2008 A Lynn, B Robertshawe Sept July 2012 (re-order profile) A Lynn, B Robertshawe Feb 2022 (routine review)