### Alert
Glucose gel is to be massaged into the buccal mucosa. It is not be administered/squirted straight into the mouth to avoid the risk of aspiration from gel.
Oral glucose gel, on average, raises blood glucose by 0.4 mmol/L (95% CI −0.14–0.14)² and is not the option for moderate to severe hypoglycaemia.

### Indication
Prevention and treatment of mild hypoglycaemia in neonates ≥35 weeks' gestation and <48 hours of life.¹²

### Action
Glucose gel contains glucose, a simple carbohydrate, in concentrated aqueous solution, which can be administered by direct application to mucosal surfaces of the mouth, including buccal and lingual surfaces. Absorption from these sites may allow rapid access to the circulation. Some proportion of the dose may be swallowed and absorbed from the gastrointestinal tract.²

### Drug Type
40% Glucose (Dextrose) Gel

### Trade Name
SugarUp 40% glucose gel (15 mL cup).

### Presentation
SugarUp 40% glucose gel (15 mL cup). Contains 40% dextrose (D-glucose), glycerine, USP purified water, maltodextrin, carboxymethyl cellulose, and citric acid (buffer).

### Dosage/Interval
0.5 mL/kg/dose (200 mg/kg/dose).² Doses can be repeated as per the local hospital guidelines.
1 mL/kg/dose (400 mg/kg/dose) as a single dose has also been used.⁵

### Route
ORAL – Massaged onto buccal mucosa. **DO NOT** squirt gel directly into baby’s mouth.

### Maximum Daily Dose
1.5 mL/kg

### Administration
1. Open container.
2. Draw up required dose of gel very slowly in an oral-only 5 mL syringe.
3. Tap out any air bubbles.
4. Dry baby’s mouth with gauze. **DO NOT** squirt gel directly into the baby’s mouth.
5. Dispense one-half of the dose from oral syringe onto gloved finger, in a stream – not a glob.
6. Massage into the buccal mucosa of one cheek.
7. Repeat with remaining half-dose inside the other cheek.
8. Large doses may be divided into 4 equal amounts and given alternating between cheeks.
10. Commence breastfeeding or administer expressed breast milk or formula.
11. Monitor infant according to hospital guideline.

### Monitoring
Measure blood glucose 30 minutes after administration and subsequent management is as per the hospital guideline.

### Contraindications
No information.

### Precautions
<35 weeks gestation; infants at risk of aspiration or in whom feeds are contraindicated.

### Drug Interactions
No information.

### Adverse Reactions
Risk of aspiration if the gel is squirted directly into mouth.

### Compatibility
No information.

### Incompatibility
No information.

### Stability
12-month shelf life. Check the expiry date prior to administration.

### Storage
Keep at room temperature. Single patient use only. Discard after opening.

### Special Comments
Oral glucose gel, on average raises blood glucose level by 0.4 mmol/L (95% CI −0.14–0.14).²

### Evidence summary
**Prevention of neonatal hypoglycaemia**

Hegarty et al, in a systematic review, assessed the effectiveness and safety of oral dextrose gel in preventing hypoglycaemia among newborn infants at risk of hypoglycaemia and in reducing long-term neurodevelopmental impairment. They included one trial comparing oral dextrose gel versus placebo in 416 infants at risk of hypoglycaemia, most of whom were infants of diabetic mothers and were treated on the postnatal ward. Oral dextrose gel prophylaxis (any dose) was associated with reduced risk of hypoglycaemia compared with placebo (risk ratio (RR) 0.76, 95% confidence interval (CI) 0.62 to 0.94). There were no statistically significant differences in the number of adverse events, separation from mother
for treatment of hypoglycaemia, exclusive breastfeeding at discharge or breastfeeding at six weeks postpartum. They concluded that oral dextrose gel reduced the risk of neonatal hypoglycaemia in at-risk infants with no statistically significant differences in the number of adverse events or in risk of separation of infant from mother for treatment of hypoglycaemia.

**Treatment of neonatal hypoglycaemia**

Weston et al, in a systematic review, assessed the effectiveness of dextrose gel in correcting hypoglycaemia and in reducing long-term neurodevelopmental impairment in neonates at risk of hypoglycaemia. They included two trials involving 312 infants. They found no significant difference between dextrose gel and placebo gel for major neurosensory disability at two-year follow-up (risk ratio (RR) 6.27, 95% confidence interval (CI) 0.77 to 51.03; one trial, n = 184; quality of evidence very low). Dextrose gel compared with placebo gel or no gel did not alter the need for intravenous treatment for hypoglycaemia (typical RR 0.78, 95% CI 0.46 to 1.32; two trials, 312 infants; quality of evidence very low). Infants treated with dextrose gel were less likely to be separated from their mothers for treatment of hypoglycaemia (RR 0.54, 95% CI 0.31 to 0.93; one trial, 237 infants; quality of evidence moderate) and were more likely to be exclusively breastfed after discharge (RR 1.10, 95% CI 1.01 to 1.18; one trial, 237 infants; quality of evidence moderate). Treatment of infants with neonatal hypoglycaemia with 40% dextrose gel reduces the incidence of mother-infant separation for treatment and increases the likelihood of full breast feeding after discharge compared with placebo gel. No excess of adverse effects have been reported during the neonatal period or at two years' corrected age. Oral dextrose gel has not been compared to supplementary feeding with human milk or formula. Oral dextrose gel may be considered as first-line treatment for infants with neonatal hypoglycaemia. [LOE 1, GOR A]

**References**