

Cheap dextrose gel could help prevent cause of brain damage in newborns

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A cheap and easy-to-administer dextrose gel should be used to treat low blood sugars in newborns, a common problem that affects up to 15% of otherwise healthy babies, and a preventable cause of brain damage, according to new research published in *The Lancet*.

"Our study is the first report in babies showing that dextrose gel massaged into the inside of the cheek is more effective than feeding alone for treating hypoglycaemia, and is safe and simple to use", explains study leader Professor Jane Harding from the University of Auckland in New Zealand.

"Dextrose gel treatment costs roughly \$2 per baby and could help reduce admissions to [neonatal intensive care](#) for treatment with intravenous glucose—not only reducing costs but importantly, keeping mothers and babies together to encourage breastfeeding".

Dextrose gel is already used to reverse hypoglycaemia in people with diabetes, but little evidence exists for its use in babies. Currently, treatment for late preterm and term babies involves extra feeding and repeated blood tests to measure [blood sugar levels](#). But many babies are admitted to [intensive care](#) and given intravenous glucose because their blood sugar remains low.

The Sugar Babies Study was designed to assess whether treatment with dextrose gel is more effective than feeding alone at reversing neonatal hypoglycaemia in at-risk babies (eg, from pregnancies complicated by

maternal diabetes, preterm birth, and [low birthweight](#)).

Between 2008 and 2010, 514 at-risk babies aged 35 weeks' gestation or older from Waikato Women's Hospital in New Zealand, were enrolled in the first 48 hours after birth. 242 (47%) became hypoglycaemic and were randomly assigned to 40% dextrose gel or placebo gel for up to six doses over 48 hours.

Treatment with dextrose almost halved the likelihood of [treatment failure](#) (a blood glucose concentration of less than 2.6 mmol/L 30 min after the second of two doses of gel) compared with placebo, with no adverse effects.

What is more, babies given dextrose gel were less likely to be admitted to intensive care for hypoglycaemia, to receive additional formula feeds, and to be formula fed at 2 weeks.

According to Professor Harding, "Because this treatment is inexpensive and simple to administer, it should be considered for first-line management of late preterm and term hypoglycaemic [babies](#) in the first 48 h after birth... [Dextrose gel] can easily be made in the hospital pharmacy, and is stable at room temperature. Therefore, the gel could also be useful in resource-poor settings where hypoglycaemia is common and underdiagnosed."

Writing in a linked Comment, Neil Marlow from the Institute for Women's Health at University College London notes that "Dextrose gel has been recommended before, roughly 20 years ago, but a previous randomised trial...did not show differences between gel and placebo and...for most services, use of buccal dextrose, even as an emergency stopgap, has fallen into disuse. We now have high-quality evidence that it is of value and should be part of the response to triggering of treatment."

He calls for more research to refine operational definitions of the level of blood glucose that should trigger [treatment](#) response, but notes that "Until more information is available, practice will continue to be based on uncertain facts; however, use of buccal dextrose gel should help to minimise unnecessary interventions."

More information: www.thelancet.com/journals/lan...
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