

# Coconut Oil - Topical

## NEWBORN USE ONLY

2024

<b>Alert</b>	Do not use non-pharmacological grade products on newborn infants.
<b>Indication</b>	May be indicated for preterm infants <28 weeks – To maintain skin integrity
<b>Action</b>	Coconut oil has moisturising effect when applied to the skin.
<b>Drug Type</b>	Purified coconut extract (Cocos nucifera): high in saturated fat particularly medium chain triglycerides.
<b>Trade Name</b>	TUTU Baby oil
<b>Presentation</b>	5 mL sachets
<b>Dose</b>	<p><b><u>Time of commencement and frequency of application: At the discretion of the clinician.</u></b></p> <p><b><u>Suggested regimen (modified COSI-2 trial protocol)<sup>6</sup></u></b>            May start within 24 hours of birth and continue until transfer or discharge.</p> <p style="text-align: center;"><b><u>≤25 weeks gestation at birth</u></b>            1 sachet FOUR times a day for the first week of life, and from day 8 of life:                If in incubator: 1 sachet TWICE daily                If in open cot: 1 sachet ONCE daily</p> <p style="text-align: center;"><b><u>&gt;25 weeks gestation at birth</u></b>            If in incubator: 1 sachet TWICE daily            If in open cot: 1 sachet ONCE daily</p> <p>Applications should coincide with routine care.</p>
<b>Dose adjustment</b>	Not applicable.
<b>Maximum daily dose</b>	Not applicable.
<b>Route</b>	TOPICAL
<b>Preparation</b>	Use direct from sachet.
<b>Administration</b>	Prior to Application: <ul style="list-style-type: none"> <li>• Perform hand hygiene as per protocol.</li> <li>• Coconut oil can be applied without gloves (provided infant and nurse/carer skin is intact)</li> </ul> Application: <ul style="list-style-type: none"> <li>• Nurse/carer to apply the oil during routine cares to the entire intact skin (front and back). Do not apply oil to the face, scalp, and sites of vascular access or other devices (e.g. chest drain).</li> <li>• Use only a few gentle strokes to apply oil. Do not massage. Application should only take 1-2 minutes.</li> </ul> Discard any unused oil in the sachet after opening.
<b>Monitoring</b>	Temperature, fluid and electrolyte balance.
<b>Contraindications</b>	
<b>Precautions</b>	Emollients reduce adhesiveness of dressings and tape used to secure endotracheal tubes and catheters.
<b>Drug Interactions</b>	
<b>Adverse Reactions</b>	No information.
<b>Overdose</b>	Not applicable.
<b>Compatibility</b>	Not applicable
<b>Incompatibility</b>	Not applicable
<b>Stability</b>	Not applicable.
<b>Storage</b>	Room temperature
<b>Excipients</b>	Purified coconut extract (Cocos nucifera)
<b>Special Comments</b>	
<b>Evidence</b>	

	<p><b>Efficacy</b> <b>Use in preterm infants</b></p> <p>A systematic review<sup>1</sup> included 15 trials (3492 infants) that assessed the effect of topical plant or vegetable oils. Most of these trials were undertaken in low- or middle-income countries and were based in healthcare facilities. Meta-analyses suggested that topical oils may reduce invasive infection (3256 infants, 9 trials; RR 0.71, 95% CI 0.52-0.96; <math>I^2 = 52%</math>; low certainty evidence) but have little or no effect on mortality (316 infants, 1 trial; RR 0.94, 95% CI 0.81-1.08, <math>I^2 = 3%</math>; low certainty evidence).</p> <p>Meta-analysis of 4 trials<sup>2-5</sup> found use of coconut oil compared to routine skin care reduced the rate of invasive infection (any organism) (4 trials, 2686 infants; RR 0.16 {95% CI 0.10, 0.24}; RD -0.09 (-0.11, -0.07), NNT 11 (9, 14); <math>I^2 = 74%</math>) and mortality (3, 393; RR 0.13 (0.02, 0.71); RD -0.05 (-0.09, -0.01); NNT 20 (11, 100); <math>I^2 = 49%</math>). A single small trial<sup>3</sup> including 72 infants reported no difference in BPD [RR 0.93 (0.53, 1.64)], NEC [RR 0.20 (0.01, 4.03)], severe ROP [RR 1.00 (0.27, 3.69)] or moderate to severe neurodevelopmental disability. A single trial<sup>5</sup> including 63 infants reported an increase in rate of weight gain [MD 2.50 g/kg/day (1.16, 3.84) but no difference in change in crown-heel length [MD 0.70 mm/week (-3.22, 4.62) or change in head circumference [MD 0.20 mm/week (-1.81, 2.21)].</p> <p>A multicentre Australia/NZ based cluster RCT (COSI-2 trial) evaluating topical coconut oil completed enrolment of &gt;1,500 extremely preterm infants and results are awaited in 2025.<sup>6</sup></p>
<b>Practice points</b>	<p>The level of certainty about the effects of emollient therapy on invasive infection or death in preterm infants is low. Since these interventions are mostly inexpensive, readily accessible, and generally acceptable, further good-quality randomised controlled trials in healthcare facilities, and in community settings in low- or middle-income countries, may be justified.<sup>1</sup></p> <p>Only pharmaceutical grade products should be used.</p>
<b>References</b>	<ol style="list-style-type: none"> <li>Cleminson J, McGuire W. Topical emollient for preventing infection in preterm infants. Cochrane Database of Systematic Reviews. 2021.</li> <li>Konar MC, Islam K, Roy A, Ghosh T. Effect of Virgin Coconut Oil Application on the Skin of Preterm Newborns: A Randomized Controlled Trial. Journal of tropical pediatrics. 2020; 66:129-35.</li> <li>Strunk T, Nathan E, Sharp M, Doherty D, Patole S. Developmental Outcomes following Topical Coconut Oil in Very Preterm Infants. Neonatology. 2019; 116:302-4.</li> <li>Salam RA, Darmstadt GL, Bhutta ZA. Effect of emollient therapy on clinical outcomes in preterm neonates in Pakistan: a randomised controlled trial. Archives of disease in childhood Fetal and neonatal edition. 2015;100: F210-5.</li> <li>Sankaranarayanan K, Mondkar JA, Chauhan MM, Mascarenhas BM, Mainkar AR, Salvi RV. Oil massage in neonates: an open randomized controlled study of coconut versus mineral oil. Indian pediatrics. 2005; 42:877-84.</li> <li>Can topical coconut oil reduce the incidence of late-onset sepsis in extremely preterm infants - a pragmatic cluster-randomised controlled trial <a href="https://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?ACTRN=12620001332910">https://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?ACTRN=12620001332910</a></li> </ol>

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