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# Anti-Inflammatory and Skin Barrier Repair Effects of Topical Application of Some Plant Oils

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- PMCID: [PMC5796020](#)
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## Abstract

Plant oils have been utilized for a variety of purposes throughout history, with their integration into foods, cosmetics, and pharmaceutical products. They are now being increasingly recognized for their effects on both skin diseases and the restoration of cutaneous homeostasis. This article briefly reviews the available data on biological influences of topical skin applications of some plant oils (olive oil, olive pomace oil, sunflower seed oil, coconut oil, safflower seed oil, argan oil, soybean oil, peanut oil, sesame oil, avocado oil, borage oil, jojoba oil, oat oil, pomegranate seed oil, almond oil, bitter apricot oil, rose hip oil, German chamomile oil, and shea butter). Thus, it focuses on the therapeutic benefits of these plant oils according to their anti-inflammatory and antioxidant effects on the skin, promotion of wound healing and repair of skin barrier.

**Keywords:** antioxidant activity; barrier function; barrier repair; inflammation; plant oil; skin aging; wound healing.

## Conflict of interest statement

The authors declare no conflict of interest.

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. 2018 Feb;19(1):103-117.

doi: 10.1007/s40257-017-0301-1.

# Natural Oils for Skin-Barrier Repair: Ancient Compounds Now Backed by Modern Science

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Affiliations [expand](#)

- PMID: 28707186

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## Abstract

Natural plant oils are commonly used as topical therapy worldwide. They are usually easily accessible and are relatively inexpensive options for skin care. Many natural oils possess specific compounds with antimicrobial, antioxidant, anti-inflammatory, and anti-itch properties, making them attractive alternative and complementary treatments for xerotic and inflammatory dermatoses associated with skin-barrier disruption. Unique characteristics of various oils are important when considering their use for topical skin care. Differing ratios of essential fatty acids are major determinants of the barrier repair benefits of natural oils. Oils with a higher linoleic acid to oleic acid ratio have better barrier repair potential, whereas oils with higher amounts of irritating oleic acid may be detrimental to skin-barrier function. Various extraction methods for oils exist, including cold pressing to make unrefined oils, heat and chemical distillation to make essential oils, and the addition of various chemicals to simulate a specific scent to make fragranced oils. The method of oil processing and refinement is an important component of selecting oil for skin care, and cold pressing is the preferred method of oil extraction as the heat- and chemical-free process preserves beneficial lipids and limits irritating byproducts. This review summarizes evidence on utility of natural plant-based oils in dermatology, particularly in repairing the natural skin-barrier function, with the focus on natural oils, including *Olea europaea* (olive oil), *Helianthus annuus* (sunflower seed oil), *Cocos nucifera* (coconut oil), *Simmondsia chinensis* (jojoba oil), *Avena sativa* (oat oil), and *Argania spinosa* (argan oil).

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. 2018 Oct;23(8):794-805.

doi: 10.1080/10837450.2017.1340951. Epub 2017 Jul 3.

# Design and Evaluation of Novel Topical Formulation With Olive Oil as Natural Functional Active

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Affiliations expand

- PMID: 28598234
- DOI: [10.1080/10837450.2017.1340951](https://doi.org/10.1080/10837450.2017.1340951)

## Abstract

Currently, the innovative skin research is focused on the development of novel topical formulations loaded with natural functional actives. The health benefits of olive oil are unsurpassed and many others are revealed as research studies allow the understanding of its unlimited properties. Olive oil has a protective toning effect on skin, but it is not transported effectively into its layers. Aiming the development of a cosmetic formulation for skin photoprotection and hydration, we have prepared and characterized macro-sized particles, made of a hydrogel polymer, loaded with olive oil. Alginate beads were uniform in shape, with minimal oil leakage, offering interesting prospects for encapsulation of lipophilic and poorly stable molecules, like olive oil. In vitro photoprotection and in vivo tolerance tests were in favor of this application. Thus, this study suggests that the incorporation of the olive oil-loaded particles into a cream formulation provides strong moisturizing properties and a photoprotective potential, when applied to healthy subjects.

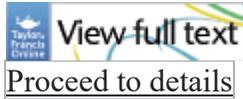
**Keywords:** Olive oil; efficacy and safety testing; polymers; skin delivery; suncare/UV protection.

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. 2012 Feb 15;(2):CD005205.

doi: 10.1002/14651858.CD005205.pub3.

# [Dietary Supplements for Established Atopic Eczema](#)

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Affiliations [expand](#)

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- DOI: [10.1002/14651858.CD005205.pub3](https://doi.org/10.1002/14651858.CD005205.pub3)

## Abstract

**Background:** Many people with atopic eczema are reluctant to use the most commonly recommended treatments because they fear the long-term health effects. As a result, many turn to dietary supplements as a possible treatment approach, often with the belief that some essential ingredient is 'missing' in their diet. Various supplements have been proposed, but it is unclear whether any of these interventions are effective.

**Objectives:** To evaluate dietary supplements for treating established atopic eczema/dermatitis. Evening primrose oil, borage oil, and probiotics are covered in other Cochrane reviews.

**Search methods:** We searched the following databases up to July 2010: the Cochrane Skin Group Specialised Register, the Cochrane Central Register of Controlled Trials (CENTRAL) in The Cochrane Library, MEDLINE (from 2005), EMBASE (from 2007), PsycINFO (from 1806), AMED (from 1985), LILACS (from 1982), ISI Web of Science, GREAT (Global Resource of Eczema Trials) database, and reference lists of articles. We searched ongoing trials registers up to April 2011.

**Selection criteria:** Randomised controlled trials (RCTs) of dietary supplements for the treatment of those with established atopic eczema/dermatitis.

**Data collection and analysis:** Two authors independently screened the titles and abstracts, read the full text of the publications, extracted data, and assessed the risk of bias.

**Main results:** We included 11 studies with a total of 596 participants. Two studies assessed fish oil versus olive oil or corn oil placebo. The following were all looked at in single studies: oral zinc sulphate compared to placebo, selenium versus selenium plus vitamin E versus placebo, vitamin D versus placebo, vitamin D versus vitamin E versus vitamins D plus vitamin E together versus placebo, pyridoxine versus placebo, sea buckthorn seed oil versus sea buckthorn pulp oil versus placebo, hempseed oil versus placebo, sunflower oil (linoleic acid) versus fish oil versus placebo, and DHA versus control (saturated fatty acids of the same energy value). Two small studies on fish oil suggest a possible modest benefit, but many outcomes were explored. A convincingly positive result from a much larger study with a publicly-registered protocol is needed before clinical practice can be influenced.

**Authors' conclusions:** There is no convincing evidence of the benefit of dietary supplements in eczema, and they cannot be recommended for the public or for clinical practice at present. Whilst some may argue that at least supplements do not do any harm, high doses of vitamin D may give rise to serious medical problems, and the cost of long-term supplements may also mount up.

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Randomized Controlled Trial

Pediatr Dermatol

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. Mar-Apr 2008;25(2):174-8.

doi: 10.1111/j.1525-1470.2008.00627.x.

# The Effect of Daily Treatment With an Olive Oil/Lanolin Emollient on Skin Integrity in Preterm Infants: A Randomized Controlled Trial

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- DOI: [10.1111/j.1525-1470.2008.00627.x](https://doi.org/10.1111/j.1525-1470.2008.00627.x)

## Abstract

To date, appropriate skin therapy for premature infants has not been clearly defined. Emollient creams are often used without solid evidence for a benefit to the neonate. The aim of the current study was to investigate the cutaneous effects of two different topical ointment therapies. Between October 2004 and November 2006 we prospectively enrolled 173 infants between 25 and 36 weeks of gestation admitted to a neonatal intensive care unit. Infants were randomly assigned to daily topical treatment with water-in-oil emollient cream (Bepanthen), olive oil cream (70% lanolin, 30% olive oil), or to a control group. Each neonate was continuously treated for a maximum of 4 weeks. Skin condition (skin score reflecting

degree of dermatitis) in these groups was compared at weeks 1, 2, 3, and 4. Neonates treated with olive oil cream showed statistically less dermatitis than did neonates treated with emollient cream, and both had a better outcome than those in the control group ( $p < 0.001$  in weeks 2-4). Treatment effects persisted throughout the study period and applied to infants of all gestational ages. This study demonstrates that topical skin therapy lowers the risk of dermatitis. Olive oil cream was superior to water-in-oil emollient cream.

- [Cited by 14 articles](#)

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