

# Skin saver?

*Cholesterol is being hailed as the latest anti-ageing skincare ingredient – but what does the science say? Naturopath Amina Eastham-Hillier investigates.*

**C**HOLESTEROL exists naturally in the skin's outermost layer, the stratum corneum of the epidermis, which is the skin's 'bricks-and-mortar': the skin cells are 'bricks', anchored with a 'mortar' of fat consisting of cholesterol, ceramides, and free fatty acids that provide a water-binding capacity essential for skin-barrier function and preventing dehydration.

## Plant-derived lipid

The cholesterol used in skincare products comes from either animal sources, like lanolin, or plant sources, notably squalane from the olive fruit tree. However, according to dermatologist Ritu Gupta of the Australian College of Dermatologists, few studies support its use in skincare. "Research shows that if a skincare product is synthesised so the ratio between those three components – cholesterol, ceramides and free fatty acids – reflects that which occurs naturally in the skin, then yes, this product can benefit dry or eczematous skin by repairing the 'mortar' between skin cells and improving skin hydration. However, I cannot find anything to indicate it's helpful in normal skin. In all the studies I've read, normal skin has been stripped of its usual fat either with alcohol solvents, or with sodium lauryl sulphate – the main ingredient in many soaps – and the lipid mixture applied. And yes, the mixture improves the skin - but would it improve skin where the fat hasn't been removed? I don't think that question has been answered."

Could a cholesterol-based skincare product improve sun-damaged skin? "That might be a slightly long bow to draw," says Gupta. "However, it can certainly help dry skin caused by overheating, too much soap, or too little moisturiser. Cholesterol is also an antioxidant, so it scavenges free radicals from pollution and cigarette smoke just as vitamins C and E do." Keen to try cholesterol skincare? Gupta's advice is to use products containing not just cholesterol, but also ceramides and free fatty acids in the right ratio: 1.0:0.9:0.4 (ceramides: cholesterol: free fatty acids). "Products with a different ratio will still have moisturising effects," she says, "but it depends on your skin type. Some moisturisers are humectants,



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meaning they trap water in skin from the outside in. Emollient moisturisers are occlusive, preventing water loss. Most are a mix of both."

At this stage, Gupta neither uses nor recommends cholesterol skincare products as she believes there's insufficient evidence to support their use in normal skin, and not on a cost-benefit ratio basis. "For patients with dry skin, I'd first stress simple actions - avoiding long hot showers, using soap substitutes rather than soap, which dries the skin, and moisturising after washing. I give them samples of readily available, relatively inexpensive products, something in a cream form – so with a higher water and lower fat content – and not too greasy so it won't ruin their clothes. I might give them something a bit greasier to use at night, when they're getting into bed."

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