



[Authoritative facts](#) about the skin from the [New Zealand Dermatological Society Incorporated](#).

[Home](#) | [Treatments](#)

Dihydroxyacetone

Fake tanners, sunless tanners or preparations used to imitate a tan are becoming much more popular as people are becoming more aware of the dangers of long term sun exposure and [sunburn](#). There are now several ways of achieving a tan without having to expose your skin to the sun, these include:

- Stainers (dihydroxyacetone)
- Bronzers (dyes)
- Tan accelerators (tyrosine and psoralens)
- [Solaria](#) (sunbeds and sunlamps)

The sunless tanner dihydroxyacetone (DHA) is currently the most popular way of gaining a tan-like appearance without sun exposure as it carries less health risks than any of the other available methods. To date, it is the only active ingredient approved by the US Food & Drug Administration ([FDA](#)) for sunless tanning.

How does DHA work?

All effective sunless tanners contain DHA. It is a colourless 3-carbon sugar that when applied to the skin causes a chemical reaction with amino acids in the surface cells of the skin producing a darkening effect DHA does not damage skin as it only affects the outermost cells of the epidermis (stratum corneum).

What formulations of DHA are available?

There are many self-tanning preparations containing DHA on the market and many will claim to be best formulation available. Consider the following points when deciding upon the preparation most suitable for you.

- Concentrations of DHA can range from 2.5 to 10% or more (mostly 3–5%). This may coincide with product ranges that list shades as light, medium, or dark. A lower concentration (lighter shade) product may be better for new users as it is more forgiving of uneven application or rough surfaces.
- Some formulations will also contain [moisturisers](#). Users with [dry skin](#) will benefit from this.
- Alcohol based preparations will be more suitable for oily-skinned users.
- DHA provides some protection against UV rays. To increase UV protection some products also include a [sunscreen](#).
- [Alpha hydroxy acids](#) promote the sloughing off of excess dead skin cells so should improve the evenness of colouration.
- Other ingredients may be added to facilitate application or to make the colour last longer. Consult your pharmacist for advice.

Who should use DHA-containing preparations?

Anyone wanting a tanned appearance without having to expose himself or herself to UV light can use these preparations. However, the final look will depend on the formulation used, individual's application technique, and the user's complexion type.

Clinical uses may be for [vitiligo](#), camouflage of some skin irregularities such as leg [spider veins](#), or possibly as protection for individuals with certain [photosensitivity](#) disorders.

How do you use DHA-containing preparations?

The final result obtained from DHA self-tanning preparations is highly dependent upon the individual's application technique. Care, skill and experience are necessary when using these products. The following are some self-application tips to achieving a smooth and even look.

- Prepare skin by cleansing then by exfoliation using a loofah; this will avoid uneven application of colour.
- Wipe skin down with hydroalcoholic, acidic toner, as this will remove any alkaline residues from soaps or detergents that may interfere with the reaction between DHA and amino acids.
- Moisturise the area first, being careful to include the bony parts of the ankles, heels and knees.
- Apply to skin in thin layers wherever you want colour, less to thicker skin, as colour is maintained longer in these areas.
- To avoid uneven darkening on areas such as the elbows, ankles and knees, remove excess cream over bony prominences with a wet cotton pad or damp flannel.
- Wash hands immediately after application to avoid tanned palms. Alternatively, wear gloves to apply.
- To avoid staining of clothes, wait 30 minutes for the product to dry before putting on clothes.
- Don't shave, bathe, or swim for at least an hour after applying the product.
- Reapply regularly to maintain colour.

Tanning salons, spas and gyms may offer professional application of sunless tanning products.

- Lotion can be applied by an experienced technician.
- Solution can be airbrushed onto the body.
- Step into a sunless tanning booth for a uniform full-body application.

Be careful to cover eyes, lips and mucous membranes to prevent swallowing or inhaling the DHA-containing mist.

Is the tan instantaneous and how long does it last?

A colour change is usually apparent within an hour of application. Maximal darkening may take 8–24 hours to develop. If a darker colour is desired, several successive applications every few hours may be done to achieve this.

An artificial tan produced by DHA will last until the dead skin cells rub off, usually 5–7 days with a single application. Depending on the area, the same colour can be maintained with repeat applications every 1 to 4 days.

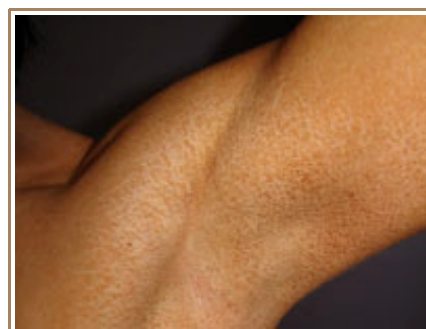
Effects of tanning cream



Undesirable staining



Darkened scaly lesions



Peeling

What precautions are there when using DHA self-tanning preparations?

The most important thing to remember when using DHA self-tanners is that they do not protect your skin against

the sun. Although DHA does provide some UV protection and many products contain additional sunscreen, the UV protection provided is much more short-lived than the skin colour change. The stated SPF for the product is only applicable for a few hours after application of the self-tanner.

Despite darkening of the skin, an individual is just as susceptible to harmful UV rays, therefore it must be stressed that an overall sun protection program is still very necessary.

Are there any side effects from using DHA self-tanning preparations?

DHA reacts quickly in the stratum corneum minimizing systemic absorption. [Contact dermatitis](#) caused by DHA has rarely been reported. Most causes of sensitivity are due to other ingredients such as preservatives in the preparation.

Related information

On DermNet NZ:

- [Ageing skin](#)
- [Sun protection](#)
- [Skin cancer](#)

Other websites:

- [Sunless Tanning Tips](#)

Author: Vanessa Ngan, staff writer

DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

Created 2002. Last updated 26 Dec 2006. © 2008 NZDS. Disclaimer.