



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

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Brown spots and freckles

Freckles

Freckles are small flat brown marks arising on the face and other sun exposed areas. They are most often seen in fair skinned people, especially those with red hair, but they are an inherited characteristic that sometimes affects darker skin types as well.

The medical term for this type of freckle is "ephelis" (plural "ephelides"). The colour is due to pigment accumulating in the skin cells (keratinocytes).

Skin pigment (melanin) is made by cells called melanocytes. They don't produce much melanin during the winter months, but produce more when exposed to the sun. The melanin is diffused into the surrounding skin cells, called keratinocytes. The colour of ephelides is due to localised accumulation of melanin in keratinocytes.

Ephelides are more prominent in summer but fade considerably or disappear in winter as the keratinocytes are replaced by new cells.

As the person ages this type of freckle generally become less noticeable. Apart from [sun protection](#), no particular treatment is necessary.

Freckles



Lentigines

Larger flat brown spots on the face and hands arising in middle age also result from sun damage exposure. Unlike freckles they tend to persist for long periods and don't disappear in the winter (though they may fade). Commonly known as age spots or liver spots, the correct term for a single lesion is "solar lentigo" (plural "lentigines").

[Lentigines](#) are common in those with fair skin but are also frequently seen in those who tan easily or have naturally dark skin. Lentigines are due to localised proliferation of melanocytes.

It is important to distinguish the harmless solar lentigo from an early [malignant melanoma](#), the "lentigo maligna". If the freckle has arisen recently, is made up of more than one colour or has irregular borders or if you have any doubts, see your [dermatologist](#) for advice.

Lentigines



Other brown marks

If the brown marks are scaly, they may be [solar keratoses](#) (sun damage) or [seborrheic keratoses](#) (senile warts). In this case there is a proliferation of keratinocytes.

Other brown marks



Solar keratosis



Solar keratosis



Seborrheic keratosis

Treatment of brown marks

Brown marks may fade with careful [sun protection](#), broad spectrum [sunscreen](#) applied daily for 9 months of the year. Regular applications of anti-aging or "fading" creams may also help. These may contain [hydroquinone](#), or antioxidants such as:

- [alpha hydroxy acids](#)
- [vitamin-C](#)
- [retinoids](#)
- [azelaic acid](#).

However, brown marks may be removed more rapidly and effectively by [chemical peels](#), [cryotherapy](#) or certain pigment [lasers](#) that target melanin in the skin. Multiple treatments may be necessary.

Suitable green-light devices include:

- Flashlamp-pulsed tunable dye laser
- Frequency doubled Q-switched Nd:YAG laser (neodymium:yttrium-aluminium-garnet)
- KTP laser
- Krypton laser
- [Copper bromide laser](#)

Suitable red light devices include:

- Q-switched Alexandrite

- Q-switched Ruby

[Intense pulsed light](#) has a similar effect. Carbon dioxide and Erbium:YAG lasers vaporise the surface skin thus removing the pigmented lesions. A [fractional laser](#) may also be effective.

Results are variable but sometimes very impressive with minimal risk of scarring.

With superficial resurfacing techniques, there is minimal discomfort and no down-time but several treatments are often necessary. Unfortunately the treatment occasionally makes the pigmentation worse. Continued careful sun protection is essential, because the pigmentation is likely to recur next summer.

Effect of treatment



Before (left) and after (right) green laser light



Before cryotherapy



After cryotherapy

Follow-up

If there is any doubt whether a brown mark may be a cancer, your doctor may choose to observe the lesion (e.g. with [mole mapping](#) or photography) or excise it for pathological examination.

Related information

On DermNet NZ:

- [Lentigines](#)
- [Lentigo simplex](#)
- [Melanoma](#)
- [Moles](#)
- [Mole mapping](#)

Other websites:

- [Lentigo](#) - e-medicine dermatology, the online textbook
- [Laser Treatment of Benign Pigmented Lesions](#) - e-medicine dermatology, the online textbook

Books about skin diseases:

See the [DermNet NZ bookstore](#)

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.

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