

Canadian Dermatology Association

Backgrounder - Photoaging

What is photoaging?

Photoaging is premature aging of the skin caused by repeated exposure to ultraviolet radiation (UV) primarily from the sun, but also from artificial UV sources. "Photo" is derived from the Greek word "phos" which means "light". So, aging of the skin caused by light.

Photoaging is different from chronological aging, as the damaging effects of UV rays from the sun (or artificial tanning sources) alter the normal structures of the skin.

Signs of photoaging

The early signs of photoaging include

- the appearance of fine wrinkles around the eyes and mouth, and frown lines on the forehead
- spider veins on the nose, cheeks, and neck
- various pigmented spots, such as freckles, solar lentigines (known as age or liver spots, although they are unrelated to the liver), and an uneven skin colour.
- a general loss of skin tone in sun exposed areas
- taut lips that start to lose some colour and fullness

With further continued sun exposure over a period of years,

- wrinkles around the eyes and mouth increase in number and become deep creases, forehead frown lines set in and can be seen when not frowning
- the skin is leathery and sags
- solar lentigines (liver or age spots) appear on areas such as the face and hands.
- broken blood vessels on the nose and cheeks are often visible
- lips are drawn, pale, and thin, and lose some definition. There may be scaling.
- skin on sun-exposed sites may bruise more easily
- red, rough scaly spots, called actinic (sun-related) keratoses, may appear. These may be pre-cancerous and require treatment for this reason.

How much skin aging is due to photo versus normal aging?

On sun exposed areas, most skin aging, up to 90%, is due to the deleterious effects of the sun. Compare the skin on an area rarely exposed to the sun with that on the face to see the difference in tone, colour and texture.

Normal aging can be seen as fine lines, even skin tone and thinner skin later in life. A loss of fat under the skin causes a gradual hollowing of the cheeks and eyes. Gravity, a change in muscles and loss of bone mass cause a slow, gradual sagging and wrinkling of the skin.

The natural aging process is dependent on time and genetics, and is unchangeable. However, photoaging can be avoided with good sun protection habits.

Where does photoaging appear?

Photoaging appears on parts of the body that people see all the time – **the face, neck, and back of the hands**. These areas often receive a lot of sun exposure. In women, the décolleté is another area where photoaging is commonly seen. The lips can also show signs of excessive sun damage. Photoaging can be seen on other sun-exposed parts of the body, such as the arms, legs and shoulders.

At what age can photoaging first appear?

Photoaging can be seen in people starting in the **teens and those in their early twenties**. Using UV light technology, areas of excess epidermal pigment (seen as freckle-like, dark spots) lying just below the skin's surface are revealed.

Over what period can photoaging happen?

Photoaging is a cumulative process which happens over years.

How much sun exposure is needed to cause photoaging?

This really depends on the person and the type of skin they have. Sun exposure over the years without skin protection can result in visible signs of photoaging⁽³⁾.

What are the main factors that determine my risk of photoaging?

Your skin type and the amount of unprotected sun exposure you get will determine your risk. Fair-skinned people with blond or red hair and skin that usually burns with sun exposure are at greatest risk. Those who spend a lot of time in the sun through outdoor work or recreation also fall into the high risk group. Darker skinned people show fewer signs of obvious photoaging, although the skin can become mottled and there may be some wrinkling.

The Fitzpatrick skin type classification (below), based on a person's reaction to sun exposure at the beginning of the spring season, is helpful to identify your risk based on your skin type and reaction when in the sun. Types I and II are most susceptible to photoaging.

Type I - Always burns, never tan; **Type II** - Usually burns, then tans; **Type III** - May burn, tans well; **Type IV** - Rarely burns, tans well; **Type V** - Very rarely burns, tans well, brown skin; **Type VI** - Very rarely burns, tans well, very dark skin

Does photoaging increase my risk of skin cancer?

Yes, your risk goes up with the degree of skin photoaging, because photoaging is a sign of ongoing sun damage.

How can I prevent photoaging?

The best way to avoid photoaging is to have a **good sun protection regimen**. Since sun damage is cumulative it is never too late to start!

Protect your skin as best as you can when you are outside especially between 11 am and 3 pm, when the sun's UV rays are strongest.

Seek shade whenever possible including from trees, shade coverings, buildings etc.

Wear clothing that covers as much of the skin as possible and broad brimmed (5 inches) hats. Legionnaire style hats are effective also.

Wear a minimum SPF 30, broad spectrum sunscreen that protects against UVB and UVA. Reapply after swimming or heavy exertion. Look for the CDA's logo for effective products that meet these criteria.

Pay special attention to ensure sun protection for the **face, ears, neck and hands**. These areas are exposed the most *and* show sun damage first. Women should include the décolleté. **Lips** are also very prone to photoaging.

Remember to apply sunscreen liberally to get its intended effect.

Use cosmetics such as moisturizer, foundation, lipstick, hand cream and body lotion that contain an SPF 30 broad spectrum sunscreen.

Apply an SPF 30 lip balm.

Use Environment Canada's UV Index daily reports and take appropriate precautions based on predicted UV levels.

Avoid indoor tanning