PRIMARY CARE DERMATOLOGY SOCIETY
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Skin Cancer Prevention

Introduction

Many of us enjoy being outside on sunny days; it makes us feel good. However, that same sun exposure increases the risk of developing skin cancer. Sunburn, and excessive exposure to the sun, or using sunlamps and tanning salons, all raise the chances of developing skin cancers such as melanoma, squamous cell cancer, and basal cell cancer. In fact, around 150,000 new cases of skin cancer occur in the UK every year.

In this leaflet, we will describe how sun exposure is harmful, and then steps you can take to reduce the risks. This leaflet does not discuss how to spot skin cancer; a link for further information regarding what to look for on your skin is provided at the end.

Understanding sun exposure

All light derives from either the sun or an energy source, such as the fluorescent tubes used in tanning salon sun-beds and sunlamps. Light consists of visible light, allowing us to see; and invisible light. Invisible light consists of ultraviolet light and infra-red light.

Ultraviolet light (UV-light), also called ultraviolet radiation (UV-radiation), is important in the production of vitamin D in our bodies but too much ultraviolet light can lead to the development of skin cancer. Infra-red light is responsible for the warm feeling one gets on their skin when facing the sun; it is not as important for the development of common skin cancer.

Ultraviolet light is further divided into several types. The important ones to note are Ultraviolet A (also known as UVA) and ultraviolet B (UVB). Both UVA and UVB are absorbed by the skin and cause permanent damage that can cause skin cancer. UVA is also responsible for wrinkling and making us look older (think of the **A** in UVA as '**ageing**') and UVB is responsible for sunburn (think of the **B** in UVA as '**burning**'). Some cancers, such as squamous cell cancer, are linked to excessive lifetime sun exposure. Others, such as melanoma, are linked to short episodes of excessive sun exposure, such as severe sunburn or using sunlamps and tanning salons. If we are to protect ourselves against the sun, we need to think about UVA and UVB protection.

Sun exposure does not mean we are at only risk from ultraviolet when abroad or in a hot climate; **the same risks apply in the UK** or in any country, whether winter or summer. Though ultraviolet radiation comes from the sun above, all light travels in rays. This means that even if you are sitting in the shade, **l**ight bounces off surfaces and the ground; this is how we can still see in the shade. Ultraviolet light can also bounce off sand, sea, ice and snow as well as penetrate through water and swimming pools, and reflects off the water surface or the bottom of the pool.

Is a tan healthy?

We all see images of people enjoying being outdoors with 'sun-kissed' tanned skin, looking 'healthy'. Tanning however, is a reaction of the skin to excessive ultraviolet exposure and is

actually is a way of the skin showing a **warning** that it is getting too much ultraviolet and is being damaged. **Having a tan does not protect your skin from the risks of sun exposure.** Over time changes will occur such as developing moles and freckles, 'age spots', bruising of the skin, wrinkling, and developing skin cancers. Not only is the number of skin cancers rising each year, but more and more younger people are developing skin cancers.

What about vitamin D?

Vitamin D is very important for our health. Our main source is obtained from the action of ultraviolet light on our skin that causes vitamin D to develop and be available for our bodies to use.

Studies show that our bodies produce enough vitamin D in much lesser time than it takes to get sun-burnt. However, it is impossible to know what safe level of sun exposure is required for a person to make enough vitamin D, without risking skin cancer. We would advise **'safe sun exposure' for most people would be approximately 15 minutes of exposing the arms and face to the sun (without using sunscreen)**; if you are prone to burning quicker, this time will be shorter. For darker skin-types, this time limit is unknown.

If you have limited exposure to the sun it is worth increasing the amount of vitamin D in your diet with foods rich in vitamin D such as fatty fish (such as salmon, tuna, and mackerel) or cod liver oil capsules. Only small amounts of vitamin D are found in beef liver, cheese, and egg yolks. Some types of milk are fortified with vitamin D (check the label). **If your exposure to sunlight is very limited, or you are at a particular risk of low vitamin D**, such as being pregnant or are breastfeeding, older than 65 or younger than 5 years of age, have darker skin, wear whole-body coverings or live in institutions, then the Government currently recommends taking 10 micrograms (400 iu) of vitamin D supplements a day (7 micrograms a day for children 6 months - 5 years). Your doctor will be able to tell you if you are in an at-risk group.

If you are at higher risk, your doctor may perform a blood test to check your vitamin D level and prescribe higher strength supplements.

Using shade

Shade can provide very effective protection, however as a result of light reflecting off surfaces **your skin can still get exposed to UV-radiation**, especially if the shade (e.g. parasol) is on/next to sand or water; in such situations additional UV-protection such as clothing and sunscreen will be required.

Cloud cover does not mean you are protected from ultraviolet light. The best way to think about any sun exposure is that if you can see, then that must mean there is visible light. If there is visible light, there must also be invisible light (ultraviolet). **On cloudy days up to 70% of the sunlight reaches your skin, and so protection is still required.**

What should I wear?

In general, try to limit how much of your skin is exposed to the sun.

- Wear a **wide-brimmed hat** that also covers the back of the neck and ears, as these areas are prone to burning and can develop skin cancer just as easily as anywhere else; a wide-brimmed hat is where the brim is greater than 7.5cm (3 inches)
- Wear **sunglasses** that protect against ultraviolet light. Glasses or lenses with a CE mark offer protection in line with European standards
- **Dark clothing** offers more sun protection than bright colours
- Choose fabrics that are **lightweight but dense**, rather than those with a loose or open weave. If wearing these, then wear sun cream underneath
- Wear **long-sleeved** shirts and trousers
- If wearing **sandals or flip-flops**, remember to apply sun cream to any exposed skin on the feet
- **Old and/or wet clothes will not provide adequate protection against ultraviolet radiation**
- Some people need to wear **specially labelled clothing** that certifies ultraviolet protection if they have pre-existing conditions that put them at greater risk of sun damage

Sun protection creams (sunscreens)

Sunscreens are creams that are applied to the skin to either reduce the amount of ultraviolet getting through in to the skin (also known as organic filters, chemical sunscreens or suncreams) or stay as a layer on the skin and cause ultraviolet light to bounce off the skin (also known as inorganic filters, physical sunscreens or suncreams, reflectors, or sunblocks). **The best one to use is the one which you prefer the look or feel of, and this is the one you are likely to use regularly.**

Sunscreens can come as gels, lotions, or creams. Lotions are good for greasier skin or the face and are easier to apply, but more may be needed; creams are good for dry skin; gels are good for more hairy areas. Sunscreen sticks can be useful around eyes, and sunscreen lip balms are good to protect the lips. Remember to apply sunscreen to the tops of ears and the head, and to feet, if exposed.

A good sunscreen will provide protection against both UVA and UVB (sometimes stated as 'broad-spectrum'). UVA protection is sometimes indicated by a star rating; this should be a rating of **4 stars or above**. SPF is related to UVB protection. **A minimal SPF should be 30**; though some specialists will advise at least 50 (your doctor will guide you). **A broad-spectrum sunscreen will therefore have a UVA rating of 4 or more stars and at least SPF 30.**

Sunscreen should be applied liberally and often. Try to apply to any exposed skin at least every 2 hours. Sunscreens that state they are 'all day' or last for more than 2 hours should also be applied regularly as these often do not take into account activities such as swimming, sweating, rubbing or toweling the skin. Many cosmetic products such as moisturisers, make-ups or insect repellants have SPF labels; often the SPF number is too low to be very protective and such creams are often rubbed in to skin too thinly; they therefore are not adequate to use for sun protection.

Studies show that people generally tend to apply less sunscreen than is recommended. For the average adult, 6 whole teaspoons is the minimum amount required for whole-body sun protection (which is more than half a teaspoon of sunscreen to each arm and the face/neck/ears and just over one teaspoon to each leg, front of body and back of body).

Sunscreens should be applied at least 15-30 minutes before sun exposure, to allow time to dry. Suncreens should be **re-applied after getting wet**; remember, for each 20 minutes in the water, more sunscreen will come off, even those labelled as water-resistant.

What about children?

A single sunburn during childhood or adolescence can double the risk of developing melanoma skin cancer later in life; children need to be protected against the sun at all times by following the steps listed above.

Babies less than 6 months should be kept out of direct sunlight. Many suncreams are available for use from 6 months onwards. Some can irritate the skin, particularly in babies with eczema, and finding the right product is sometimes a matter of trial-and-error. Creams should be applied in the same way as adults; liberally and often.

What about sun protection in skin of colour?

Dark skin is still at risk of burning, premature ageing, and developing skin cancer, but to a lesser degree compared to light skin. The type of skin cancers that may develop in dark skin are slightly different to light skin. In addition, dark skin takes longer to make vitamin D; how much longer is unknown and varies with the shade of dark skin.

Less research has been performed with regards to sun protection for dark skin. What is known though is that all the same measures apply. Finding the right sun protection cream is sometimes more of a challenge as mineral sun-blocks may leave a whitish residue on skin that some may find unappealing. Sun-blocks containing titanium oxide and zinc oxide often are tinted and these may be more cosmetically suitable; or micro-ionized titanium oxide or zinc oxide can leave less of a residue.

Can I still enjoy the sun?

Yes! The sun provides many benefits; we feel warm, it can make us feel good and we need it for vitamin D, along with many other benefits. But, excessive sun exposure is harmful. By keeping the measures listed above in mind, you can enjoy being out in the sun, and also protecting yourself and your family.

Follow this link to information about examining your skin and looking at your moles.

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