Medicine for Managers

Dr Paul Lambden BSc(Hons) MB BS BDS(Hons) FDSRCSEng MRCSEng LRCPLond DRCOG MIHSCM

Beware The Sun

The sun is a 4.5 billion year old star, a sphere of hot plasma composed of hydrogen and helium, incandescent by nuclear fusion reactions at its core. Energy radiated from its surface is mainly as visible light and infra-red light. It also provides 10% as ultraviolet light. The sun provides the source of energy for life on earth and without it that life could not exist. Exposure to sun causes tanning, which may look good but can cause a variety of problems.

The sun can produce skin changes that accelerate the aging process and can pre-dispose to a variety of changes including skin cancers.

As we get older our skin progressively changes as the elastic fibres gradually break down. The deterioration results in the skin losing its elasticity and it begins to stretch and sag.

The shape is lost so that it starts to hang in places. These changes are aggravated by the ultra-violet rays of the sun. Although skin damage is not apparent in young people the effects are cumulative and, with increasing age, the skin adopts its characteristic wrinkled, freckly and coarse appearance.

The skin also becomes more fragile, suffering damage with minor trauma, tearing and bruising easily.

Apart from the obvious cosmetic disadvantages of long-term sun exposure, other changes develop including patchy mottling, visible dilated blood vessels, benign tumours and, most significantly, skin cancers.

UV light is, again, the principal culprit and is present in both sunlight and tanning beds. UV rays can cause sunburn; the body does have a protective mechanism to deal with this and will produce the pigment ***melanin***, which absorbs UV rays and helps protect against sinister skin changes.

The skin becomes darker as more melanin accumulates but this in itself indicates that the skin has become damaged by the sun or tanning bed. Pale-skinned people have little melanin and are more vulnerable to skin damage resulting in burning and predisposition to cancer.

Skin Cancer is normally one of three principal types.

Basal cell carcinomas are usually slow-growing, enlarge by direct extension (i.e. simply getting bigger) and virtually never metastasise (spread via the blood or lymph channels).

Squamous cell carcinomas often enlarge more quickly and can spread by local growth or metastasising. Together these two groups form 95% of all skin cancers.

Melanoma is the third type of skin tumour. It is made up of malignant melanocytes and, although comprising ***less than five percent*** of skin cancers, is responsible for ***75%*** of all deaths. The tumour spreads to distant organs and secondary tumours may develop when the primary pigmented lesion is still quite small.

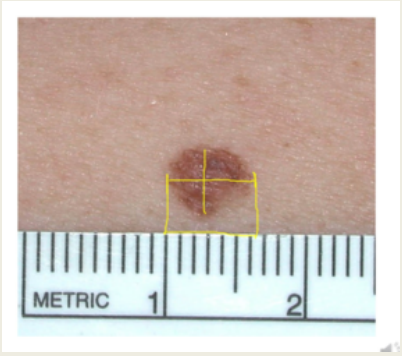
Generally harmless moles are flat or raised and are round or oval with a smooth edge.

Everyone should check their skin regularly and use the ***ABCD rule*** with any pigmented skin lesion:

- ***A***symmetry (variation in the shape or characteristics)
- ***B***order (indistinct or ragged edges)
- ***C***olour (variation in shade or intensity)
- ***D***iameter (significant change in size, greater than 5 mm)

Any skin lesion which changes in any way (***including pain or bleeding***) should be shown to a doctor as a matter of urgency.

Sometimes the doctor will inspect a skin lesion and will provide reassurance that it is benign (harmless). However, he or she might also advise you to keep an eye on it and to return if the lesion changes. An easy way to assess any changes in any skin blemish is to take a good photograph with a tape measure applied nearby so that the exact measurements of the lesion (along its longest axes) can be recorded. The measure can be applied again after a few weeks or months and the results compared with the photograph to see if there have been any changes.



Sunburn can cause severe skin damage which may leave scarring and pigmentation after it has healed. Depending on the location, intensity of the sun and period of exposure, the typical skin changes, known to many, will appear. They include reddening and soreness of the skin,

which may be accompanied by blistering. The burned areas may be very sore or painful. Treatment for sunburn is to ease the pain and discomfort whilst the skin heals. The use of a cool flannel may help to cool the skin and moisturisers will help to keep it moist. If the sunburn is very severe, it may be necessary to consult your local chemist for advice.

During the recovery phase, the skin will peel. The skin underneath may appear slightly red but will look relatively normal.

Sunscreen

A tan does not protect the skin from sunburn. It is always wise to spend time in the shade when the sun is at its strongest (11.00 a.m. to 3.00 p.m.).

Sunscreen alone cannot fully protect you from sun damage. When buying a sunscreen, the label should show:

At least +30 sun protection factor against UVB
At least 4-star UVA protection.

(A circle with the letters UVA in a circle indicates meeting the EU standard.)

Light skinned people and those with lots of moles or freckles are more vulnerable to skin cancer.They should try to stay in the shade, wear protective clothing (such as wide-brimmed hats, long sleeves and close weave skirts) and ensure high factor sunscreen.

It is important to apply sunscreen liberally. If too little, protection is reduced. It should be applied 30 minutes before going out and again just before going out. Coverage should include the ears, neck, face and any bald or thinning areas of the scalp. The screen should be applied regularly (2-hourly) and particularly if spending time in water when it may be washed or towelled off.

In bright sunlight, sunglasses should meet the British Standard Mark 12312-1:2013E with a CE mark.

People with brown or black skin are less at risk of skin cancer because it provides some protection against UV rays.

However, it is still important to avoid burning because people of all skin tones can get skin cancer.

The British Association of Dermatologists advises that people should ***not*** use sunbeds or sunlamps because they concentrate UV radiation. Risks include, not only cancer but sunburn, premature skin aging and potential eye damage.

Sun damage was known by the ancient Mesopotamians who used umbrellas and the

ancient Greeks who used wide-brimmed hats. The use of oche-based pastes has been used by

the the Himba in Namibia for at least 285,000 years.

The Roman writer Celsus promoted covering the skin with copious olive oil. Many have celebrated the wonder of the sun with their quotations:

"*The sun is new each day"*
Heraclitus (535-475 BC)
"*Turn your face to the sun and the shadows fall behind you"*
Maori Proverb

"The sun shines upon good and bad alike"
Hans Christian Anderson

"Keep your face to the sun and you cannot see a shadow"
Helen Keller

"In order for the light to shine so brightly, the darkness must be present"
Sir Francis Bacon

***And finally**, "The sun, with all those planets revolving around it and dependent on it, can still ripen a bunch of grapes as if it had nothing else to do"*
Galileo Galilei

paullambden@compuserve.com