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Healthy skin

by Dr Emma Edmonds

Dr Emma Edmonds is a registrar in dermatology in a London teaching hospital. She is also a spokesperson for the British Skin Foundation, the only charity dedicated to skin research.

The skin - the interface between humans and their environment - is the largest and most easily visible organ in the body.

Functions of the skin include:

- Protection against chemicals and ultraviolet (UV) light;
- Preservation of a balanced internal environment by preventing loss of water, electrolytes and macromolecules;
- Temperature regulation;
- Sensation;
- Vitamin D synthesis;
- Psychosocial, display;
- Cosmetic.



Healthy skin is defined as skin that is able to perform all of these functions effectively.

WHAT LIES BENEATH

The skin has two layers, the epidermis and the dermis.

The epidermis forms the outer layer. It varies in thickness from less than 0.1mm on the eyelids to nearly 1mm on the palms and soles. It produces keratin, rendering the skin waterproof, and melanin, which protects from UV radiation.

The dermis makes up about 15-20 per cent of body weight. It is largely composed of connective tissue: collagen (for strength) and elastin (for stretch). In addition it contains blood vessels, lymphatics, cutaneous nerves and skin appendages such as hair follicles, sebaceous glands and sweat glands. The dermis provides nutrients to the epidermis and acts as a cushion from injury.

The hypodermis, mostly composed of fat and loose connective tissue, supports the dermis.

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TOP TIPS FOR HEALTHY SKIN

Sun exposure

UV radiation predisposes the skin to premature ageing (wrinkles, fine lines, pigmentary changes) as well as being strongly implicated in certain types of skin cancer such as melanoma, squamous cell carcinoma (SCC) and basal cell carcinomas (BCC).

The sun's rays are at their strongest and most damaging between 11.00am and 3.00pm so it is advisable to stay out of the sun at these times. This is not necessarily the hottest part of the day.

At other times covering up and wearing a sunscreen with a high sun protection factor (SPF 15 and above) is advisable.

Smoking

The adverse cutaneous consequences of cigarette smoking are significant. Smoking is strongly associated with wrinkling and premature skin ageing as well as poor wound healing. Smoking is also thought to exacerbate certain skin conditions, such as psoriasis.

Nutrition

A balanced diet containing carbohydrate, protein, fat, vitamins and mineral salts in the correct proportions is usually achievable with a Western diet. Certain deficiencies such as vitamin A, vitamin B complex and essentially fatty acids are known to cause dermatitis and other skin conditions. Those with special diets such as vegetarian or vegan, or those with increased requirements in childhood and pregnancy, may need to take additional supplements. Information on the recommended daily allowance (RDA) for food components is readily available.

Evidence is emerging that dietary modulation may have a beneficial effect on

certain skin conditions, such as eating oily fish in psoriasis as well as in some instances of infantile eczema.

Alcohol causes vasodilatation of blood vessels in the skin leading to redness and is known to worsen certain skin conditions. The British Nutrition Foundation recommends fewer than four units of alcohol a day for a man and fewer than three units a day for a woman.

Drinking plenty of water and avoiding caffeine-rich drinks will help ensure the body, and therefore the skin, does not become dehydrated. Recommendations to avoid dehydration include the 8x8 rule: drinking eight fluid ounces of water eight times a day.

Washing, exfoliation and moisturising

Washing skin removes dirt, sweat and bacteria. Soaps with a pH matching that of the skin are less likely to dry out the skin. This is particularly important in people prone to dry skin such as those with atopic dermatitis. Alternatively, soap substitutes such as aqueous cream can be used.

Non-dermatologically tested soaps may contain ingredients that are known to be common irritants in susceptible individuals. Common irritants include scents, preservatives, disinfectants and dyes used in soap production.

Exfoliation removes dead skin cells and oils that can block skin pores. Exfoliation is helpful in those with greasy skin. It can help reduce comedones (black and white heads) and, therefore, acne.

Using a moisturiser on the skin will help prevent water loss. In those with greasy skin, water-based

moisturisers are less comedogenic and therefore less likely to clog pores leading to spots.

THE LIFE STAGES OF SKIN

Childhood

Young skin is thinner than adult skin. It is more susceptible to environmental factors such as the sun and products that may come into contact with the skin.

Special precautions should be taken to avoid the damaging effect of UV radiation. These include staying out of the sun, covering up, wearing a hat and using a high SPF sunscreen. Dermatologically tested creams and soaps are preferable.

The school years may bring exposure to a wide variety of potential irritants such as chlorine from swimming pools. This may exacerbate pre-existing skin problems such as eczema. In addition, wearing jewellery and cosmetics may bring a further range of dermatological problems in the form of allergic contact dermatitis.

Adolescence

Adolescence and the teenage years are a difficult period for most people. Peer approval and hence the need to look good are particularly important. During puberty and adolescence the skin produces more sebum, which may lead to greasy hair, acne and seborrheic dermatitis, all thought to be hormonally influenced. At this age there may be a greater need to wash and exfoliate daily. Adult skin problems may sometimes present at this stage.

Male and female skin is essentially the same, but on reaching adulthood, women may notice hormonal changes such as developing spots premenstrually. Pre-existing skin conditions may also get worse.

Pregnancy

During pregnancy up to 70 per cent of women may notice an increase in pigmentation on the face called chloasma or "the mask of pregnancy". This is exacerbated by the sun. A high SPF sunscreen will help. Other areas such as the nipples, the mid-line of the abdomen and genital areas may become darker. This pigmentation usually fades after pregnancy. Other reported skin findings include dryness and an increase in sweating.

Menopause

Although no specific structural changes of the skin are observed at the menopause, oestrogen receptors have been found in the skin suggesting that oestrogen plays a role in the skin's function. Commonly reported symptoms are dryness and flushing. The use of hormone replacement therapy patches in some instances may cause an irritant dermatitis.

Old age/senescence

Older skin is thinner (bruising more easily) and less elastic. The results of a lifetime of UV light exposure - wrinkles and pigmentary changes (brown spots on sun exposed sites) - may be seen. Conditions such as asteatotic eczema may arise as a result of the skin becoming drier, partly because of a decrease in sebum production. Regular moisturising and avoiding agents that may dry the skin becomes more important.

Through a closer understanding of the interactions between the structure, function, properties and requirements of the skin, the dermatological needs of the individual may be more satisfactorily met.