

Optimal nutrition for **hair, nails & skin**

Healthy hair, skin and nails are an outward sign of health and vitality, and their poor condition may reflect many biochemical imbalances in the body. The skin is the largest organ of the body and is responsible for the elimination of a variety of toxins, so any imbalances will be reflected quite quickly. Hair and nails indicate the health of the body 2-6 months previously. This means that much of what is going on inside you will quickly be reflected in this organ system, collectively known as the integumentary system.

The integumentary system is the organ system that protects the body from damage, and comprises the skin and accessory structures: hair, nails and associated glands. It is diverse in both form and function: it serves to waterproof, cushion and protect the deeper tissues, excrete wastes and regulate temperature, and is the attachment site for sensory receptors to detect pain, sensation, pressure and temperature. In humans the integumentary system also provides vitamin D synthesis.

THE THYROID

The hair and skin are particularly vulnerable to thyroid conditions. In particular, hair loss is frequently associated with thyroid problems. With hypothyroidism, hair frequently becomes brittle, coarse and dry and may fall out easily. Skin can become coarse, thick, dry and scaly. In hypothyroidism there is often a thinning of hair in the outer edge of the eyebrow. With hyperthyroidism severe hair loss can also occur, and the skin can become fragile and thin.

Other symptoms that may be related to a thyroid condition include feeling tired all the time, difficulty in losing weight, sensitivity to the cold, constipation and depression. If you are suffering from more than two of the above it is advisable to have your thyroid function checked.



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PHYSIOLOGY

The skin has two principal layers: the epidermis and the dermis. The epidermis is the thin, outer layer. It contains melanocytes, cells that produce the protein pigment melanin which determines skin colour. The dermis is the thicker, inner layer. Hair, sweat glands and sebaceous (oil) glands are all rooted in the dermis. Beneath the dermis lies the subcutaneous layer or hypodermis, which is composed of adipose or fatty tissue.

Elastic tissues such as the skin require a strong and resilient structural framework. This framework is called the extracellular matrix or connective tissue. All connective tissue is composed of three major classes of biomolecules: structural proteins (collagen and elastin), specialised proteins (fibrillin, fibronectin and laminin), and proteoglycans.

Collagen is the main protein of connective tissue. Along with soft keratin and elastin it is responsible for skin strength and elasticity. Its degradation leads to the wrinkles that accompany ageing. Elastin helps skin to return to its original position when it is poked or pinched.

Skin condition and functioning are affected by environmental factors such as ultraviolet

(UV) irradiation, free radicals, toxic and allergic compounds and mechanical damage, and by endogenous factors such as genetic predisposition, immune and hormone status, and stress. Consequently the skin undergoes alterations resulting in photo-ageing, inflammation, reduced immune function, imbalanced epidermal homeostasis, and other disorders.

Hair is a protein filament that grows through the epidermis from follicles deep within the dermis. The main component of hair fibre is keratin. Fingernails and toenails are also made of keratin. Fingernails require 3 - 6 months to regrow completely, and toenails require 12 - 18 months. The actual growth rate depends on age, gender, season (nails grow faster in the summer than in the other seasons), exercise level, diet and hereditary factors. The nail growth record can indicate recent health and physiological imbalances, and has been used as a diagnostic tool since ancient times.

Symptoms affecting the hair, skin and nails may be influenced by any of the following:

- adolescence
- constipation/diarrhoea
- dehydration
- exposure to chemicals (including household chemicals)

- genetics
- low stomach acid
- smoking
- weak immune system
- poor diet
- hormonal imbalances
- excessive exercise
- chronic stress.

LIFESTYLE RECOMMENDATIONS

High stress levels have an adverse effect on the integumentary system. In particular, cortisol stimulates the degradation of amino acids from collagen. High stress levels also reduce stomach acid production. Stomach acid is essential for releasing minerals such as zinc from

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food, which is essential for healthy hair and nails. Allow time for relaxation through yoga or breathing techniques. Exercising is equally important as it may reduce stress levels and also maintains circulation.

It is important to reduce your toxic load as much as possible. As the skin is the main

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organ of elimination, a high toxic load is often a key player in auto-immune skin conditions. Drinking filtered tap water, increasing your fibre intake, reducing alcohol and eating organic wherever possible will aid in this regard.

DIETARY RECOMMENDATIONS

Fats

Reduce all sources of saturated fat from red meat and dairy, as the fat is converted into

Carbohydrates

Increase intake of whole grains (brown rice, rye, oats, barley, buckwheat and quinoa), fresh fruit and vegetables. These foods are high in fibre, which aids in the removal of toxins. Fresh red, orange and yellow fruit and vegetables, red berries, blueberries, blackberries, red grapes, dark green leafy vegetables and avocados are also high in antioxidant compounds to combat ageing.



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pro-inflammatory arachidonic acid in the body. It will exacerbate conditions such as psoriasis, acne and eczema.

Increase intake of essential fatty acids (EFAs) from nuts, seeds (pumpkin, sunflower, sesame) cold-pressed oils and oily fish (mackerel, salmon, tuna, herrings, pilchards and sardines), as they are anti-inflammatory. Low intakes of linoleic acid (an omega-3 EFA) can lead to dermatitis!

Protein

Reduce intake of red meat, processed meats and unfermented dairy products as they are high in saturated fat, which is inflammatory. Ensure sufficient high-quality protein from chicken, turkey, fish, and pulses such as beans and lentils. In particular, protein sources high in sulphur amino acids (which are essential for the production of keratin) should be increased. These include beans, eggs, fish, garlic, lentils, onions and yoghurt.

Fluids

Avoid excess alcohol, stimulating drinks such as coffee or tea, sugary soft drinks and carbonated drinks, all of which are dehydrating and leach the body of essential minerals such as zinc, calcium and iron which are essential for hair, nail and skin health. It is essential to ensure that you drink at least 1.5 litres of filtered water a day.

Important nutrients for hair, skin and nails

Vitamin C. Low intakes of vitamin C have been found to be significantly associated with a wrinkled appearance and senile dryness.² Vitamin C has various biological roles in the skin, including participation in collagen synthesis, the regeneration process and wound repair.

Vitamin A and beta-carotene. Vitamin A strengthens the protective tissue of the skin and reduces the production of sebum, over-production of which is implicated in acne. Beta-carotene is a potent antioxidant and is also a source of vitamin A in the body. Vitamin A is found in liver, butter, cheese and eggs. Beta-carotene is high in sweet potato, carrots, dried apricots, buckwheat and dark green vegetables.

B-complex. The B vitamins are essential for nervous system support (especially in times of stress), as well as immune function and digestion. Deficiency is often related to conditions such as acne or poor nail and hair health. Eggs, game, poultry, pumpkin seeds, blackstrap molasses, wheat germ, brewer's yeast, avocados, bananas, carrots, lentils, brown rice, tuna, shrimp and salmon are high in B-vitamins.

Vitamin E. Vitamin E protects the skin from ultraviolet light and can prevent cell damage from free radicals. Foods high in vitamin E include wheat germ oil, nuts and seeds, fish, eggs, avocados and green vegetables.

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THYROID SUPPORT

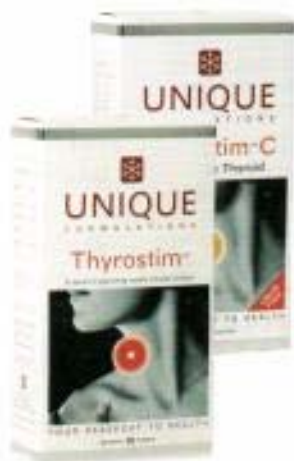
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Selenium. Selenium protects cells from free radical damage. Low levels are associated with discolouration of the hair and skin as well as whitening of the fingernail beds. Organic meat, fish, muscle meat, whole grains, dairy, fruit, onions, garlic, nuts and seeds are all good sources.

Zinc. Zinc is essential for immune function, aids in tissue healing and can help prevent scarring. Deficiency is often associated with poor nail health manifesting as deformed nails, hangnails, inflamed cuticles and white spots in the nail plate. Oysters, liver, brewer's yeast, eggs, whole grains, pumpkin seeds and mushrooms are good sources.

Green tea polyphenols. Green tea, which is high in polyphenols, has anti-inflammatory and anticarcinogenic potential, which can be exploited against a variety of skin disorders. Green tea polyphenols have been shown to modulate biochemical pathways important in inflammatory responses, cell proliferation and responses of tumour promoters.³

CONCLUSION

Maintaining a healthful diet, hydration, exercise and a balance of nutrients is essential in ensuring well-nourished, beautiful hair, skin and nails. For chronic problems related to the integumentary system a targeted approach is required, and you should consult with a qualified health professional in this regard. ●

FEELING

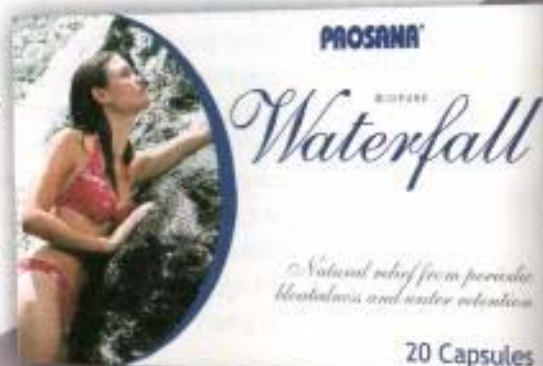
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