



Vitamins in Skincare

Dr Ahsan Ullah details the importance of vitamins and how they can enhance your patient's skincare regime

A magic youth pill?

Is there such a pill that can miraculously result in younger looking skin? As practitioners, I'm sure we're all aware that the answer is rather more complex than a simple yes or no. Patients tend to look for an easy fix, and perhaps there may well be one released in the future. For now, however, what consumers may see as 'youth pills' can consist of many well known vitamins and minerals, micro and macro nutrients and essential fatty acids, which all play an integral part in improving the skin's natural dermatological function. It is often quite confusing as to what advice one should follow and subsequently give to our patients. What can actually be beneficial for our patients needs? What does not have any clinical benefits? New clinical data is always emerging so it is important to keep up with the most up-to-date research. Simple factors such as a healthy lifestyle and dietary advice are essential, and then to optimise the treatment, one can add topical regimes in combination to help achieve the overall desired outcome. As vitamins play a fundamental role in good skincare, this article shall focus on their advantages and detail which ones can be the most beneficial in promoting healthier skin.

Vitamin A

Vitamin A, in its simplest form, is a fat-soluble aliphatic vitamin occurring in two main forms, 'preformed vitamin A', (Retinol and its retinyl ester) – mainly found in animal products, and 'pro-vitamin A' (usually carotenes) which can be found in plant-based foods such as fruits and vegetables.¹ The role of retinol, or more specifically the oxidised form, retinoic acid, is involved in the control of cell proliferation and differentiation of keratinocytes into mature epidermal cells, and results in the overall health of the skin.² Its application has been used for many years by dermatologists for the treatment of acne, with research also showing its benefit as an ingredient in anti-ageing skincare as it can improve the appearance of fine lines.³ There are many creams on the market which have retinol present in them, and the type you choose can vary depending on the patient's requirements. It is important to

note that it is shown to be most effective in those whom wish to combat generalised photoaged skin, where treatments such as botulinum toxin may not be as effective. The toxins cause deeper muscle paralysis and can help smooth out wrinkles, however superficial damaged skin can often require nutritional support too.⁴ Retinoic acid can be given to patients on a prescription, however it is usually reserved for use by dermatologists in the UK, given its high risk of side effects, especially teratogenic effects, and hence it may need tight monitoring.⁵

Vitamin B

• Biotin B7

Biotin, (also known as vitamin H), is essential for cells throughout the body. Its main responsibility is the function of fat metabolism, and essential fatty acids that are required for the skin to keep its appearance healthy.⁶ It is usually deficient in those who consume raw eggs as they contain an antagonist to biotin, which consequently can result in deficiencies. Such deficiencies normally manifest as a dry and itchy dermatitis.⁶

• Niacin B3

Niacin (niacinamide) is useful in a skincare regime as it has shown to have an antioxidant, anti-wrinkle, and skin 'brightening' effect.⁷ Deficiencies of niacin are quite rare but have been shown to contribute to pellagra, a disease seen in parts of Africa but rarely in the Western world.⁸ Topical application of niacin can exert antioxidant properties that can remove Reactive Oxygen Species (ROS), which are free radicals causing skin cellular damage.⁷ Consequently, niacin can help to improve and protect the skin barrier with an improvement in overall anti-ageing effects and, given its vasodilative effects, it can help make the skin appear more youthful and volumised.⁷

Vitamin C

Ascorbic acid is the most commonly taken nutritional supplement in the UK due to its variety of benefits, where consumers were recorded to of spent £35.9 million in 2009 on the supplement.⁹ In terms of skincare, it has been shown to promote collagen synthesis and protect against photodamage by reducing free radicals. Results from two studies demonstrated that vitamin C decreases the appearance of fine wrinkles and improves overall skin texture and tone.^{10,11} Research has shown that vitamin C used topically can have various cutaneous benefits, including collagen synthesis, photoprotection from UVA/UVB, lightening of hyperpigmented areas and the improvement of a variety of inflammatory dermatoses.¹²

Vitamin E

Vitamin E consists of tocopherols and tocotrienols, which are both found in a variety of skincare products and aim to improve the skin and help the anti-ageing process. Deficiencies in vitamin E can result in poor anti-oxidation effects resulting in free radicals to damage the skin layers.¹³ The literature regarding vitamin E is extensive. What we understand is that vitamin E has potent antioxidative properties which have an obvious benefit on sun exposed skin, helping it from ageing prematurely¹⁴ – this would suggest it to be a vital tool in overall skincare. Studies have also suggested that, in the long term, vitamin E can reduce the risk of sunburn from exposure to UVB radiation,¹⁵ however this should not be a substitute for use of a sunscreen. Medical research has also suggested that due to its antioxidative properties, vitamin E can aid the cell apoptosis process in skin cancers.¹⁶



Vitamin K

Vitamin K is a fat-soluble vitamin synthesised in the liver and is well known to play an important part in blood coagulation,¹⁷ but some practitioners are not aware of its dermatological benefits. More recently, however, its topical usage has come under the spotlight. Research has shown the benefits of using vitamin K topically to help hyperpigmented areas and dark under eye circles.¹⁸ Typically as a 5% cream, vitamin K has shown to diminish postoperative bruising from cosmetic surgery, as well as laser-induced bruising, superior to that of just arnica cream.⁷

Conclusion

As discussed, there are a variety of different vitamins that can help in the overall appearance and youthfulness of the skin, however the application of treatments will vary depending on the patient's initial concerns and expectations, and should not be generalised for everyone. When choosing skincare, it is important to develop a good professional relationship with your patients. By both understanding the desired goals versus the realistic outcomes, results can be achieved much more effectively.



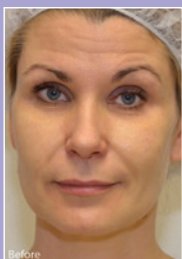
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