

Vitamins A and C

What do they actually do?

Vitamin A helps regulate cell growth and division, it helps support the immune system, and helps to maintain healthy endothelial cells (cells lining the bodies interior surface) as well as supporting eye health.

Vitamin C is needed to produce collagen, it helps make hormones and chemical messengers used in the brain and nerves, it plays a role in controlling infections and healing wounds and it's a powerful antioxidant that also supports the immune system.

One reason they are so often used together is because they each make the other work harder; they are a powerhouse pair.

Did you know?

Vitamin A is destroyed by heat, light and air and therefore needs to be replenished daily to avoid vitamin A deficiency.

Like vitamin A, vitamin C also needs to be replenished daily as it is not stored well within the body and depletes very quickly.

There are of course other contributing factors that deplete these vitamins rapidly _____

Free Radicals

Free Radicals are the process of oxidisation, they are molecules that have been made electrically unstable and rapidly react with other molecules, as a result they destroy other surrounding molecules.

Free radicals are often viewed in a negative light; however, we need free radicals as part of our natural energy production and as an important mechanism for defence against infections.

White blood cells release free radicals to kill bacteria and viruses, if they release too many, we feel ill; if they release too few, we get infected. Free radicals can't be avoided, but they are increased by:

- Smoking

(One puff of cigarette smoke is reputed to hold over 3 trillion free radicals, it is the greatest exposure to free radicals)

- Pollution
- UV rays
- Strenuous exercise

(Adequate replacement of antioxidants is essential, antioxidants have been found to be very effective at neutralising free radical chain reactions and slowing down free radical activity before they can do any harm in the body)

- Stress
- Lack of sleep

Damage by free radicals is also linked to premature aging and damage to the DNA of the keratinocyte cell.

By snatching an electron from its neighbour, a free radical can set off a chain reaction that eats away at cell membranes and damages the DNA of the cells.

By making sure we replenish our bodies with antioxidants (such as vitamin C) we can inhibit free radicals to a certain extent.

Let's talk skin

Vitamins A and C are powerful vitamins that help support the skin

Benefits of vitamin A:

- Normalises cell differentiation

(The process during which young, immature cells take on individual characteristics and reach their mature form and function)

- Stimulates cell turnover

(The continuous process of shedding dead skin cells and replacing them with younger cells)

- Normalises melanin production

(Prevents hyperpigmentation which can eventually lead to dark spots or patches on the skin)

- Protects Langerhans cells

(Langerhans cells are responsible for taking down redness and inflammation)

- Normalises sebaceous glands

(Sebaceous glands are the microscopic glands found in hair follicles that secrete sebum)

- Stimulates fibroblasts

(Fibroblasts secrete collagen proteins that help maintain the structural framework of tissues)

- Stimulates blood circulation

(Good blood circulation is beneficial for carrying essential vitamins and nutrients around the body)

- Thickens the epidermis

(The epidermis is the outermost layer of skin and protects your body from harm, and keeps your body hydrated, the epidermis thins as we age)

- Compacts the stratum corneum

(The stratum corneum keeps moisture in the skin and is the skin's only protection against harmful environmental conditions, by making this layer more compact, it's harder for moisture to escape)

Benefits of vitamin C:

- Supports collagen and elastin production

(Vitamin C is essential for the activity of certain enzymes that promote the proper folding of the stable collagen triple-helix conformation)

- Improves overall skin texture

(Because of vitamin C's role in the formation of collagen it also contributes to smoother looking skin over all)

- Inhibits tyrosinase

(Tyrosinase is the enzyme that controls the production of melanin, vitamin C inhibits this enzyme preventing hyperpigmentation)

- Supports normal blood vessels and capillaries

(Endothelial cells lining the body's blood vessels and capillaries form a tight barrier which is weakened by inflammation, vitamin C tightens this barrier, strengthening the blood vessels and capillaries)

- Helps to take down redness and inflammation

(Vitamin C acts as an anti-inflammatory agent through its antioxidant properties, this means it smooths skin and can also help to reduce puffiness)

- Supports the skins natural SPF

(Due to vitamin C being a powerful antioxidant it helps to shield the skin by fortifying the skins natural barrier against UV, however it is NOT an alternative to using an SPF cream)

- Inhibits free radicals

(Vitamin C is a powerful antioxidant which helps to inhibit free radicals to a certain extent)

A deficiency in vitamins A and C are not always easy to spot and most people are unaware that they suffer from a chronic localised deficiency of vitamin A. Symptoms vary and some are more severe than others.

Vitamin C deficiency signs:

- Hair loss
- Delayed healing of skin wounds
- Fatigue
- Swollen or bleeding gums
- Skin spots caused by bleeding and bruising from broken blood vessels
- Iron deficiency anaemia

Vitamin A deficiency signs:

- Severe dryness of the eyes
- Night blindness
- Irregular patches on the white of the eyes
- Dry skin or hair

There are several ways we can get vitamin A and C into our bodies, diet is incredibly important in giving us essential nutrients and vitamins we need, however it's very difficult to obtain the daily recommended amount of nutrients and vitamins from diet alone. Especially for people who have restricted diets.

This is where vitamin supplements and topical skin care products play a huge roll in making sure we are getting the correct amount of nutrients and vitamins for our skin daily.

Many breakfast cereals, juices, dairy products and other foods are fortified with retinol (preformed vitamin A) and many fruits and vegetables contain beta-carotene (responsible for a lot of vegetables orange colour).

Foods containing vitamin A:

- Leafy green vegetables

(Kale, spinach, broccoli)

- Orange and yellow vegetables

(Carrots, sweet potatoes, pumpkin and other winter squash, summer squash)

- Tomatoes
- Red bell pepper
- Cantaloupe
- Mango
- Beef liver
- Fish oils
- Milk
- Eggs
- Fortified foods

Fruits and vegetables are the best sources of vitamin C.

Foods containing vitamin C:

- Citrus*

(Oranges, kiwi, lemon, grapefruit)

- Bell peppers*
- Strawberries*
- Tomatoes*
- Cruciferous vegetables*

(Broccoli, brussels sprouts, cabbage, cauliflower)

- White potatoes*

When taking any supplements its important not to exceed the daily recommended amount of vitamins and nutrients, its extremely difficult to exceed the daily recommended amount of vitamins A and C through diet alone and its unlikely to ever happen to someone with a generally balanced diet, its more than likely that diet alone would not provide enough vitamins and nutrients for maximum benefit.

The top supplements for getting vitamins A and C into the body are Advanced nutrition programme's Skin vit A and Skin vit C.

Both supplements provide recommended amounts of vitamin A and vitamin C without any bulking agents or harsh chemicals.

Skin vit A contains vitamin A in the form of retinol palmitate which is the most active form found in the body. Skin vit A also contains vitamin D to help support bone, muscle and immune health.

Skin vit C contains zinc to support skin, hair and nails and is also revered for its antioxidant protection. Skin vit C also contains acerola berry which features up to 100 times more vitamin C than oranges.

Things to note about these supplements:

- Skin vit A is not suitable during pregnancy*
- These supplements should not be used as a substitute for a varied and balanced diet and a healthy lifestyle*
- If under medical supervision, consult a doctor before use*

Vitamin A and vitamin C trump other vitamins when it comes to skin.

Skin is the largest organ on our body and a complex one at that.

It provides a protective barrier against infection, mechanical, thermal and physical injury and hazardous substances. Skin also prevents loss of moisture, reduces harmful effects of UV radiation and acts as a sensory organ.

Skin does so much for us, the least we can do is look after it.

Vitamins A and C

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