



Vitamin C

We all know the old adage “an apple a day keeps the doctor away” and we all know that we are told to take Vitamin C to ward off any lurking viruses but what is Vitamin C and why is it so vital to our overall health?

What is Vitamin C?

Vitamin C, also known as **ascorbic acid**, is a water-soluble vitamin found in certain foods and is also a popular food supplement. A water soluble vitamin means your body doesn't store it so **any excess is excreted**. The human body does not make Vitamin C therefore it must come from diet or supplementation. **Natural and synthetic L-ascorbic acid are chemically identical** and there are no known differences in their biological activity. The possibility that the bioavailability of Vitamin C from natural sources might differ from that of synthetic ascorbic acid has been investigated in at least two human studies and no clinically significant differences were observed.

What can Vitamin C do for me?

There are [various approved and recognised](#) studies on the benefits of taking vitamin C as an additional supplement. From helping boost the body's immune system to contributing to normal psychological function; it is worth knowing more about this simple but powerful vitamin.

Vitamin C is a **powerful antioxidant** and as such it helps to **protect cells** from the damage caused by free radicals. [Free radicals](#) are compounds formed when our bodies convert the food we eat into energy. People are also exposed to free radicals in the environment from cigarette smoke, air pollution, and ultraviolet light from the sun. Free radicals are an atom or molecule made in the body that can damage cells and cause gene mutations. It is thought that free radicals may play a role in cancer, heart disease, and age-related diseases (such as Alzheimer's, Parkinson's, and Motor Neurone Disease). If a diet lacks Vitamin C, supplementing can help the body prevent free radical damage.

Vitamin C is vital in assisting the body in the formation of [collagen](#). It helps the body form and maintain connective tissue, including bones, blood vessels, and skin which gives support and structure for other tissue and organs. Collagen is also important in the **wound healing** process so a diet that is deficient in Vitamin C can prevent successful healing of cuts and other skin damage.

In fact the role of Vitamin C in wound healing and surgery recovery has been examined in medical literature since 1937, when two Harvard Medical School surgeons [published an article](#) in a medical journal about vitamin C deficiency and wound healing.

The surgeons noted that spontaneous breakdown of surgical wounds in the absence of infection occurred with relative frequency in many patients, it was discovered that these patients had low levels of Vitamin C.

Their recommendation was administration of Vitamin C was a necessary post surgical adjunct based on their observations that **wound healing becomes faulty when vitamin C levels are inadequate**. Subsequently, [another early study](#) from 1941 recommended saturating the body with large doses of Vitamin C daily (1000 mg) for three days *prior* to surgery, and then keeping these high levels maintained post surgery with supplemental doses during the healing period.

In summary, the important component in tissue healing is collagen, which is comprised of the amino acids lysine, proline, and glycine. Collagen forms the structure of the connective tissue that becomes the framework around which the new tissue is rebuilt. The enzymes critical to forming collagen simply cannot function without their co-factor, which is Vitamin C.

Vitamin C also acts as an **immune system modulator**, but why does the body depend on Vitamin C for strengthening the immune system?

An intact immune system relies upon many layers of protection from multiple cell types ([NK cells](#), [Neutrophils](#), [Lymphocytes](#), and [Antibodies](#)) and a host of immunologically active signalling molecules. The optimum function of these specialised cells and molecules is likely **dependent on adequate supplies of Vitamin C** in the body. Additionally Vitamin C has been shown to stimulate both the production and function of white blood cells ([Leukocytes](#)) which are involved in protecting the body against both infectious disease and foreign invaders. Therefore, a higher supply of Vitamin C in the body enhances multiple immune system parameters.

For optimal immune function, various experts now recommend all adults should consider **supplementing with 1000 mg of Vitamin C daily** in addition to a diet rich in fruits and vegetables.

It is also thought that Vitamin C may protect coronary arteries by reducing formation of plaque which helps to prevent the oxidation of LDL cholesterol ('bad' cholesterol) especially in combination with vitamin E.

A daily dose of Vitamin C reportedly has a similar effect as regular light exercise such as walking on a protein called [endothelin-1](#). This potent protein promotes the constriction of small blood vessels (vasoconstriction) which can lead to heart disease and stroke. Vitamin C counteracts endothelin-1-mediated vessel constriction due to its role in [vasodilation](#). A significant amount of randomised, double-blind, and placebo-controlled studies have shown that treatment with Vitamin C consistently results in improved vasodilation in individuals with coronary heart disease. [One such study](#) examined the prospective association of plasma Vitamin C concentrations with incident fatal and non-fatal heart failure events in otherwise apparently healthy adults aged 39 to 79 years. It was found that the **risk of heart failure decreased with increasing plasma vitamin C**.

Maintaining the body's Vitamin C levels is such a simple intervention through diet or supplementation but it is capable of significant, far-reaching effects for general health over and above what we have learned so far.

"I never cease to be amazed at the number of persons who remain unaware that vitamin C is the best broad-spectrum antibiotic, antihistamine, antitoxic and antiviral substance there is." Thomas Levy MD JD.

Further reading

[Primal Panacea](#) – Thomas Levy MD

[The Clinical Guide to the use of Vitamin C](#) – Frederick Klenner MD

[Ascorbate: The Science of Vitamin C](#) – Dr Steve Hickey & Dr Hilary Roberts

[IVC Protocol](#) – Riordan Clinic

[UK FSA Guidance on Vitamin C](#)

[Surviving Ebola](#)