

# the wonders of antioxidants

Anne-Marie Williams takes a look at how investing in the body's protection system could keep wrinkles and ill health at bay



**a**n increasing number of products from face creams to food supplements boast antioxidant properties and, although we may be forgiven

for thinking that antioxidants are an invention of marketing strategists, they do have health benefits; clinical research has shown that they can help prevent numerous diseases and illnesses, from coronary heart disease to cataracts and even Alzheimer's disease.

Antioxidants are a group of vitamins, minerals and enzymes that protect the body from the harmful effects of free radicals. Free radicals or oxidants are molecules with one or more unpaired electrons, this makes them unstable and in consequence they rush around the body causing oxidative damage to cells and tissues. They have both endogenous origin (created inside the body) and exogenous origin (coming from outside the body).

Endogenous free radicals are created:

- through normal bodily functions such as breathing and physical activity when oxygen is used to create energy, free radicals are the by-product of this process.
- when cells detoxify they create free radicals.

Exogenous free radicals enter our bodies through:

- pollution or cigarette smoke and radiation from the sun.
- industry sources and medical x-rays.

The damage they cause has been linked to over 100 diseases, which is why antioxidants are so important. They are protective molecules that help neutralise the effect of free radicals, either by preventing their formation in the first place, or if these are already formed, antioxidants are able to reduce their energy, thereby limiting the damage done to the body.

## fighting ill health

There are literally hundreds of antioxidants to be found in the foods we eat, the most

# Antioxidants

important being the vitamins C and E, the carotenoids beta-carotene, lutein and lycopene, and the mineral selenium.

Together these help prevent many diseases.

Studies on lycopene have concluded that this antioxidant, found primarily in tomatoes, can significantly reduce the risk of prostate, stomach and lung cancer. It has also been found to have an important preventive role in other cancers such as pancreas, colon, rectum, oesophagus, oral cavity, breast, and cervical cancer. Furthermore, a recent study published in the American Journal of Epidemiology concludes that women who have high blood levels of carotenoids can reduce their risk of developing breast cancer by up to 44 per cent.

Antioxidants also play a vital part in preventing coronary heart disease as they help to stop the oxidation of the bad LDL cholesterol molecule that is involved in the development of arteriosclerosis, which is one of the major causes of heart attacks and strokes. One study shows that those who consume high levels of antioxidants, especially lycopene, have half the risk of having a heart attack compared to those who consume fewer antioxidants.

The antioxidant lutein has an important role in preventing macular degeneration (the degeneration of the back of the eye which leads to loss of sight) and cataracts. The sun, which causes ageing in the skin, also causes oxidative damage in the eyes. Lutein can help prevent this oxidation which can result in blindness. The antioxidants selenium, vitamins C and E have also been shown to limit this eye damage.

## brain power

The American Society for Neuroscience has conducted studies that show that antioxidants are able to reduce the harm caused to the brain through ageing. By

protecting brain cells antioxidants can help reduce memory loss and prevent damage to nerve cell communications, which are important for movement learning and control.

Studies conducted at the University of Illinois in the US conclude that the antioxidant vitamins C and E not only help prevent skin cancer by combating the free radicals caused by ultraviolet radiation, but can also help fight the effects of ageing by keeping the skin firm and youthful.

*"The damage caused by free radicals has been linked to over 100 diseases, which is why antioxidants are so important"*

Sunscreens are not able to block out 100 per cent of ultraviolet light which means that residual light can penetrate the skin creating free radicals that can cause damage which can result in ageing and skin cancer. The good news is that by applying antioxidants, especially vitamin C and E, in a topical form it is possible to reduce the oxidation and ultraviolet radiation caused by the sun and

therefore preserve the youth and health of the skin.

Our health depends to a large extent on the body's ability to fight the damaging effects of free radicals. Therefore, antioxidants play a crucial role in disease prevention. The good news is that it isn't necessary to be rich to be able to benefit from them as they are found naturally in food products, particularly in fruits and vegetables. Herbs are also a rich source of antioxidants, with oregano having the

highest antioxidant properties, so rather than using salt or artificial flavourings in dishes it's much healthier and tastier to use herbs. What's more, antioxidants are thought to

be more powerful when combined together. So, in order to give the body the best chances of fighting free radicals, it is preferable to obtain them through a balanced diet. This should include at least five daily servings of fresh fruit and vegetables. In this way the body obtains many different antioxidants which help maintain the body's natural defences

## Sources of important antioxidants

**Vitamin C:** Fruits (especially citrus) and vegetables, including green and red peppers, tomatoes, potatoes and green, leafy vegetables.

**Vitamin E:** Vegetable oils (eg soybean, corn and safflower) and vegetable oil products (eg margarine), whole grains, wheat germ, nuts and seeds, and green, leafy vegetables.

**Beta-carotene:** Yellow-orange fruits and vegetables (eg carrots, sweet potato), dark green leafy vegetables (eg spinach), apricots, broccoli.

**Lycopene** - carrots, green peppers, apricots, tomato and tomato based foods, however tests show that the lycopene present in tomato juice is less easily absorbed by the body than the lycopene found in other tomato based and derived products.

**Lutein:** Spinach, kale, romaine, leeks, broccoli, celery, mustard greens, lettuce, parsley, corn, kiwi fruit, egg yolk.

**Selenium:** cashew nuts, halibut, salmon, scallops, tuna.

