Antioxidants

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- Oxygen is the basis of all plant and animal life. It is our most important nutrient, needed by every cell, without it we cannot release the energy in food which drives all body processes.

- Oxygen is chemically reactive and highly dangerous, in normal biochemical reactions oxygen can become unstable and capable of “oxidising neighbouring molecules”, leading to cellular damage, which triggers cancer, inflammation, arterial damage and aging.
- Known as free oxidising radicals, this body waste must be disarmed to remove the danger.
- Free radicals are made in all combustion processes including smoking, the burning of petrol to create exhaust fumes, radiation, frying or barbecuing food and normal body processes.
- Chemicals capable of disarming free radicals are called antioxidants. The main players are vitamins A, C and E plus beta-carotene, the precursor of vitamin A that is found in fruit and vegetables.
- Bioflavonoid, anthocyanadins, pycnogenol and over a hundred other antioxidants, may literally be the balance between life and death

Antioxidants in health and disease

- A low calorie diet high in antioxidant nutrients is the best way to slow down the aging process.
- The risk of death is substantially reduced in those with either high levels of antioxidants in their blood or high dietary intakes.
- A lower level of vitamin A and vitamin E is associated with Alzheimer’s disease.

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- Elderly people with low levels of vitamin C in their blood have the risk of developing cataracts compared to those with high levels.
- Low vitamin E blood levels double the risk of developing cataracts.
- Low levels of vitamin A are linked to people with lung cancer.
- A high intake of beta-carotene from raw fruit and vegetables reduces the risk of lung cancer in non-smoking men and women.
- Antioxidants help boost the immune system and increase resistance to infection.
- Antioxidants have been shown to reduce the symptoms of AIDS, and sometimes reverse the condition.
- They increase fertility, reduce inflammation in arthritis and have an important role in many conditions including colds and chronic fatigue syndrome.
- The balance between the intake of harmful free radicals and of protective antioxidants can free us from several diseases.
- Health problems can be recognised when early warning signs start to develop like frequent infections, difficulty shifting an infection, easy bruising, slow healing, thinner skin or excessive wrinkles for your age.
- The best way to determine antioxidant status is to have a biochemical antioxidant profile done.
- This blood test measures the levels of beta-carotene, C and E in blood and determines how well antioxidant enzyme systems are functioning.

Antioxidants - the best foods

- Every year more and more antioxidants are found in nature, including substances in berries, grapes, and tomatoes.
- Vitamins A, C and E and the precursor of vitamin A, beta-carotene are the main essential antioxidant vitamins.
- Beta-carotene is found in red/ orange/yellow vegetables and fruits eaten raw, heat quickly destroys it.

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- Vitamin E is found in nuts and seeds and their oils.
- Watermelon is also excellent. The flesh is high in beta-carotene and vitamin C, while the seeds are high in vitamin E and in the antioxidant minerals zinc and selenium.
- The presence of non-essential antioxidants found in most fruits and vegetables are also important.
- Anthocyanidins and proanthocyanidins – particularly rich in berries and grapes, are reputedly good against gout and certain types of arthritis.
- Bioflavonoids have a number of beneficial roles.
- They act as potent oxidants.
- They bind to toxic metals and lead them out of the body; they have a synergistic effect on vitamin C, stabilising it in human tissue.
- They have a bacteriostatic and /or antibiotic effect, which accounts for their anti infection properties.
- They are anti-carcinogenic.
- They are applied in capillarity fragility, bleeding gums, varicose veins, haemorrhoids, bruises, strain injuries and, thrombosis.
- Bioflavonoid include rutin and hesperidin, found particularly in citrus fruit.
    - Source: Citrus fruit, berries, cherries, grapes, papaya, cantaloupe melon, plums, and tomatoes.
- Coumarins and chlorogenic acid- these substances prevent the formation of cancer-causing nitrosamines and are found in a wide variety of fruit and vegetables.
    - Source: Tomatoes, pineapple and strawberries.

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- Ellagic acid – neutralises carcinogens before they can damage DNA.
    - Source: strawberries, grapes and raspberries.
- Phytoestrogens play a protective role by binding excess oestrogens made in the body, or taken in from the environment via pesticides, plastics and other sources of oestrogen like chemicals, to a protein made in the blood. This action reduces the amount or oestrogens available to oestrogen-sensitive tissues.
    - Source: Citrus fruits.

Immune – boosting nutrients

- Immune strength is totally dependent on an optimal intake of vitamins and minerals.
- Deficiency of vitamins A, B1, B2, B6, B12, folic acid, C and E suppress immunity, as well as deficiencies of iron, zinc, magnesium and selenium.
- Vitamins B1, B2 and B5 have mild immune-boosting effects compared with B6.
- The production of antibodies, so critical in any infection, depends upon B6, as T-cell function.
- B12 and folic acid are needed for the rapid production of new immune cells to engage an enemy.
- Immunity can boost very effectively by the combination or nutrients.
- Selenium, iron, manganese, copper and zinc are all linked to antioxidation and have been shown to affect immune power positively. The most important are selenium and zinc.
- Vitamin C is unquestionably the master immune- boosting nutrient.
- They help immune cells to mature, improve the performance of antibodies and macrophages.
- Vitamin C is anti-viral, anti-bacterial and able to destroy toxins produced by bacteria.