

Spirulina

Spirulina is a type of Blue-Green Algae.

Botanical Names

Spirulina fusiformis - *Spirulina maxima* - *Spirulina platensis* (also known as *Arthrospira platensis*) - *Spirulina* is from the *Oscillatoracea* family.

Health Benefits of Spirulina

Cardiovascular System

- Spirulina (12,000 mg per day) may alleviate (hypochromic) Anemia.
- Spirulina may inhibit abnormal Blood Clotting.
- Spirulina may help to prevent Atherosclerosis.
- Spirulina may stimulate the production of Blood Cells (both White Blood Cells and Red Blood Cells) (due to the Phycocyanin content of Spirulina).
- Spirulina may lower Blood Pressure in Hypertension patients.

Cells

- Spirulina may facilitate the repair of damaged Deoxyribonucleic Acid (DNA) in Cells (due to Polysaccharides in Spirulina).
- Spirulina may enhance the function of Stem Cells (due to the Phycocyanin content of Spirulina).

Electromagnetic Radiation

- Spirulina may reduce the quantity of Radioactive Isotopes absorbed into the body and may thereby help to counteract the toxic effects of exposure to Radioactivity.

Excretory System

- Spirulina may help to prevent Kidney Stones.
- Spirulina may help to prevent damage to the Kidneys caused by Kidney Stones.

Immune System

- Spirulina may alleviate Allergies (by lowering elevated IgE levels in Allergy sufferers).
- Spirulina may help to prevent Cancer and may cause the regression of some cases of Cancer.



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Nature's Link

Meeting People Where They Are

- Spirulina's ability to prevent and treat Cancer may occur from its ability to enhance the cytotoxic effects of NK Lymphocytes.
 - Spirulina may stimulate the apoptosis (cell death) of Chronic Myelogenous Leukemia cells (due to the Phycocyanin content of Spirulina).
 - Spirulina may help to prevent carcinogens-induced Colon Cancer.
 - Spirulina (applied directly to the tumor) may reduce the size of the tumors involved in Mouth Cancer.
- Spirulina may suppress the proliferation of *Candida albicans*.
- Spirulina may stimulate the Immune System:
 - Spirulina may increase the body's production of Antibodies.
 - Spirulina may enhance the production and activity of Macrophages.
 - Spirulina may enhance the function of NK Lymphocytes.
 - Spirulina may enhance the production and activity of Phagocytes.
 - Spirulina may increase the size of the Spleen (i.e. it may stimulate the growth of the Spleen).
 - Spirulina may enhance the function of T-Lymphocytes.
 - Spirulina may enhance the function of the Thymus (subjects receiving Spirulina are claimed to have a larger Thymus than those not receiving Spirulina).
- Spirulina may reduce Inflammation (due to its ability to selectively inhibit the Cyclooxygenase-2 enzyme that plays a role in the production of various pro-inflammatory Eicosanoids).
- Spirulina (1,000 mg per day) may inhibit Leukoplakia (a pre-cancerous condition that can lead to Mouth Cancer).
- Spirulina (*Spirulina platensis* form) may inhibit the replication of some types of Viruses (due to the Calcium Spirulan (Ca-SP) content of *Spirulina platensis*):
 - Spirulina may inhibit the HIV-1 virus that causes Acquired Immune Deficiency Syndrome (AIDS) - due to Calcium Spirulan and Lipids such as Glycolipids and Sulfolipids present in Spirulina (according to in vitro studies but not yet proven in human studies).
 - Spirulina may inhibit the replication of the Cytomegalovirus.
 - Spirulina may inhibit the replication of Herpes Simplex Viruses:



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- Spirulina may exert anti-viral effects against the Herpes Simplex Virus Type 2.
- Spirulina may inhibit the replication of the Measles Virus.
- Spirulina may inhibit the replication of the Influenza Virus Type A that causes some types of Influenza.

Metabolism

- Spirulina contains numerous Antioxidants.
- Spirulina may lower total serum Cholesterol levels:
 - Spirulina may increase HDL Cholesterol levels.
 - Spirulina may lower LDL Cholesterol levels.
- Spirulina may lower Blood Sugar levels and may control some of the negative side-effects in Diabetes Mellitus Type 2 patients.
- Spirulina may help to prevent Cirrhosis.
- Spirulina may help to prevent Exercise-induced damage to Skeletal Muscle.
- Spirulina may alleviate Hypoglycemia by increasing Blood Sugar (Glucose) levels and increasing the endogenous production of Insulin (due to the Glycogen content of Spirulina) (according to anecdotal reports).
- Spirulina may improve the function of the Liver:
 - Spirulina may help to prevent Fatty Liver caused by exposure to toxins such as Carbon Tetrachloride.
 - Spirulina (8,400 mg per day) may facilitate weight loss in Obesity sufferers.
 - Spirulina may lower elevated serum Triglycerides levels.

Musculoskeletal System

- Spirulina may help to prevent and treat Rheumatoid Arthritis.
- Spirulina may help to prevent Exercise-induced damage to Skeletal Muscle.

Nervous System

- Spirulina may inhibit the ability of Haloperidol to cause Tardive Dyskinesia.

Respiratory System

- Spirulina (2,000 mg per day) may alleviate (allergic) Rhinitis.



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Spirulina may Enhance the Function of these Substances

Cytokines

- Spirulina may increase the production of Interferon Gamma.
- Spirulina may increase the production of Interleukin 1.
- Spirulina may stimulate the production of Interleukin 12.

Hormones

- Spirulina may stimulate the body's production of Adrenaline.

Nucleic Compounds

- Spirulina may facilitate the repair of damaged Deoxyribonucleic Acid (DNA) in Cells (due to Polysaccharides in Spirulina).

Spirulina may Counteract these Potentially Toxic Substances

Environmental Toxins

- Spirulina may inhibit the ability of Carbon Tetrachloride to cause Liver damage.

Enzymes

- Spirulina may selectively inhibit Cyclooxygenase-2 (COX-2).

Immune System Chemicals

- Spirulina may lower elevated IgE levels.
- Spirulina may lower elevated Interleukin 4 levels.

Minerals

- Spirulina may facilitate the removal of Arsenic from the body.
- Spirulina may counteract the toxic effects of Lead.
- Spirulina may counteract the toxicity of Mercury.
- Spirulina may reduce the absorption of Strontium-90 (a radioactive form of Strontium) into the body from dietary sources.

Pharmaceutical Drugs

- Spirulina may reduce the toxicity of Cisplatin.
- Spirulina may inhibit the ability of Doxorubicin to damage the Heart.
- Spirulina may inhibit the ability of Gentamicin to damage the Kidneys.
- Spirulina may inhibit the ability of Haloperidol to cause Tardive Dyskinesia.

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Spirulina Contains these Substances

Amino Acids:

Alanine
Arginine
Aspartic Acid
Cystine
Glutamic Acid
Glycine

Histidine
Isoleucine
Leucine
Lysine
Methionine
Phenylalanine
Proline

Serine
Threonine
Threonine
Tryptophan
Tyrosine
Valine

Vitamins:

Biotin
Vitamin B1
Vitamin B2

Vitamin E
Vitamin B3
Vitamin B6
Vitamin B5

Inositol
Folic Acid
Vitamin A

Vitamin B12 - The Vitamin B12 content of Spirulina is in a bound, non-bioavailable state

Minerals:

Cobalt
Iron
Calcium Gluconate
Magnesium

Potassium
Phosphorus
Chlorine
Manganese
Zinc

Bismuth
Sodium
Copper
Selenium
Germanium

Carbohydrates:

Glycogen

Polysaccharides:

Calcium Spirulan (Ca-SP)
Sodium Spirulan (Na-SP)

Carotenoids:

Beta-Carotene
Xanthophyll
Zeaxanthin



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Enzymes:

Superoxide Dismutase (SOD)

Polyphenols:

Rutin

Proteins - Chromoproteins:

Chlorophyll

Phycocyanin

Lipids:

Gamma-Linolenic Acid

Alpha-Linolenic Acid

Arachidonic Acid

Glycolipids

Sulfolipids

Linoleic Acid

Myristic Acid

Palmitic Acid

Palmitoleic Acid

Oleic Acid

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