The Magic of Medicinal Mushrooms

Overcome Cancer, Prevent Infections, Aid Your Heart, Cope with Stress, Counteract Aging and Improve Overall Health with Medicinal Fungi

Cancer and autoimmune diseases are common in modern society. People's immune systems are under a great deal of stress from exposure to chemicals and the fast pace of modern life. Therefore, keeping your immune system healthy is essential to reduce your risk of these serious health problems.

Fortunately, there are allies in the fungal kingdom that can help keep your immune system in top condition. Mushrooms are commonly thought of as just food, but scientific research has shown that over 270 species of fungi have medicinal value. This goes along with historical tradition of using mushrooms in herbal medicine, most notably in traditional Chinese medicine (TCM).

Medicinal mushrooms have many healing properties, but they are especially helpful for the immune system. They can stimulate the immune system to help fight infections and cancer. Some can also modulate the immune system to reduce excess immune activity in autoimmune disorders. Some are hepatoprotective, which means they protect the liver (and other organs) from damage from environmental toxins.

The adaptogenic, antioxidant and anti-inflammatory effects of medicinal mushrooms also make them great for promoting overall health. Mushrooms can also lower blood pressure and cholesterol to benefit the heart and circulation, which means they can help prevent the number one killer disease in modern society, heart disease.

How Mushrooms Improve Health

Medicinal mushrooms contain many health-promoting compounds, including triterpenoids, proteins, and complex polysaccharides such as beta-glucans. Beta-glucans have been shown to stimulate immunity, reduce insulin resistance, and lower cholesterol. Mushrooms high in beta-glucans can be beneficial in helping the body fight infections and cancer by stimulating immune system activity.

In addition to beta-glucans, medicinal mushrooms can contain resistant starch, up to 15% by dry weight. This starch is an excellent prebiotic, which means it provides food for beneficial bacteria in the large intestine. A healthy intestinal biome helps keep the digestive system and the entire body in better health.

Essential sugars, or glyconutrients, make up about 10% dry weight of many fungi. These sugars have a stimulating effect on white blood cells and the formation of antibodies. They help the immune system recognize pathogens and cancer cells and communicate these discoveries to the rest of the immune system so it can perform its job more effectively.

Medicinal mushrooms are also nutritious. They contain B vitamins such as riboflavin, folate, thiamine, pantothenic acid, and niacin and trace minerals like selenium, copper and iron. Some species also contain significant amounts of vitamin D3, one of the most common nutritional deficiencies in modern society.

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Meet the Medicinal Mushrooms

There are many species of medicinal fungi, but they tend to have the following health promoting properties. They are immune stimulating, having antibacterial, antiviral and/or antifungal action. Many aid the ability of the body to recognize and destroy cancer cells. They also combat free radical damage and help the body cope better with stress. Here are some of the more popular medicinal fungi and their beneficial effects.

Cordyceps *(Cordyceps sinensis, C. militaris)*

Cordyceps made international headlines in 1993, when female Chinese runners smashed nine world records in a major competition. Not one of them was ranked in the top 10 before these contests. Their coach attributed this remarkable athletic performance to the use of caterpillar fungus, or cordyceps.

Cordyceps is a fungus that grows on the larvae of a caterpillar. While the caterpillar is hibernating underground, the fungus invades the organism and consumes the bug. The result is a caterpillar shaped mushroom. In the spring, it puts up a stem-like mushroom, which gives the herb its Chinese name—dong chong xia cao. Literally translated this means, "winter bug, summer grass."

Wild grown cordyceps, as shown above, is extremely expensive. Fortunately, it can now be cultivated as shown in the photo below.

Cordyceps is an energy tonic in Chinese medicine and has been used for about 1,500 years. It is right up there with ginseng as a superior tonic, due to its effects on increasing energy levels, sex drive and athletic performance.

It enhances both the yin and the yang energy in the body and it supports the Chinese kidney (water) and lung (metal) energy. The Chinese kidney system includes some aspects of adrenal function, because it relates to basic energy and stamina. There is also an aspect of reproductive function in the Chinese kidney energy system. Cordyceps helps in all these areas. It increases energy, improves stamina and can overcome sexual dysfunction.

In Western terms, cordyceps has adaptogenic, antioxidant, sedative and immune balancing characteristics. It also has an hepatoprotective effect, enhances kidney and lymphatic function and helps balance blood sugar levels. Researchers have shown that cordyceps increases ATP production, which enhances cellular energy. This helps explain its traditional use in enhancing strength and endurance.

Other studies suggest that cordyceps has potent antioxidant and anti-inflammatory properties. It measures 12,000 on the ORAC scale and can be helpful for inflammation associated with asthma and rheumatoid arthritis. It also has a protective effect on the liver and kidneys and is a tonic for the heart, cardiovascular system and lungs. It can help to improve blood flow, normalize cholesterol levels and may help reduce blood pressure.

Cordyceps stimulated testosterone production in laboratory animals and increased a type of estrogen essential to fertility in another study. This correlates with its Chinese reputation as a tonic for sexual weakness and reduced libido.

The lung or metal energy in the Chinese system relates to the immune function in Western medicine and cordyceps definitely aids the immune system. It enhances the ability of the body to prevent and fight infection and is very helpful for people who have weak lungs and are constantly getting sick.

It is also helpful in asthma and COPD (chronic obstructive pulmonary disease). Improvements in symptoms such as shortness of breath, cough, appetite and energy have been reported.

Cordyceps may also enhance the immune function in both cancer and autoimmune disorders. One study showed cordyceps helping animals with systemic lupus. It can strengthen a person undergoing chemotherapy and reduces blood vessel growth to the tumors.

If you want something that will boost your general vitality and immunity, cordyceps is a good remedy for you. It is especially helpful for counteracting the effects of aging. Doses of just 3 grams per day (about 6 capsules) have resulted in improvements in energy, libido, memory and tolerance to cold, and reductions in dizziness, tinnitus and frequent nighttime urination. A typical dose for enhancing respiratory or immune function would be 2-3 capsules three times daily. There are no known side-effects or drug interactions.

Reishi or Ling zhi *(Ganoderma lucidum)*

Japanese researchers began studying Reishi, also known as Ganoderma, in the mid-1980s. Their published findings caught the attention of Western researchers, who began to study the fungus, which has been used for thousands of years in traditional Chinese medicine (TCM). Reishi has consistently impressed the biomedical community as a potential source for compounds that can help hypertension, diabetes, hepatitis, cancer, and AIDS.

Clinical studies show that Reishi has a wide range of actions. For starters, it boosts the immune function (via natural killer cells, macrophages and interferon) to fight both viral and bacterial infections. It also balances or modulates the immune system in auto-immune disorders. Because of this, Reishi is widely used for conditions of immune deficiency such as cancer, AIDS and chronic fatigue syndrome, as well as autoimmune conditions such as lupus, rheumatoid arthritis, Crohn's disease, and Ankylosing spondylitis. It may also be helpful in relieving allergies, bronchitis, HIV and inflammation.

Reishi's anticancer activity is unique in that its triterpenes and polysaccharides limit tumor growth by blocking the abnormal reproductive cycles of cancer cells. Some of its compounds induce apoptosis (programmed cell death) in cancer cells, while

sparing healthy tissue. Other compounds in Reishi inhibit metastatic processes and decrease the expression of genes involved in cancer cell survival, proliferation, invasion, and metastasis.

Reishi may be helpful for combating viral infections. Polysaccharides isolated from Reishi have also proven effective in vitro against herpes simplex virus types 1 and 2. Reishi isolates have also been tested against other viral strains, including influenza A, and demonstrated effectiveness against their replication.

Reishi also helps your cardiovascular system by lowering blood pressure and cholesterol, and protecting the heart. It has been used in the treatment of heart deficiency, angina pectoris, heart palpitations and arrhythmia.

Reishi is hepatoprotective, protecting the liver against radiation and damage by toxins. It has an ORAC value of 4,000. Reishi also has neuroprotective properties. It has a significant ability to stimulate brain neurons.

Reishi can help to balance blood sugar and prevent the development of new fat cells in obese individuals. In a study involving diabetic rats, Reishi enhanced carbohydrate metabolism and promoted insulin secretion. In a clinical trial of patients with type II diabetes, 1800 mg. of Reishi given 3 times daily reduced glucose levels. In other clinical studies, the glucans in Reishi inhibited hypoglycemia. Reishi is the principle ingredient in the ***Chinese Wood Increasing Formula***, which helps people who are weak, anemic and deficient to rebuild their health.

Maitake *(Grifola frondosa)*

Maitake is a soft mushroom typically found growing at the base of aging oaks, elms and maple trees. It has been used in traditional Japanese medicine for centuries. After arousing the curiosity of Western medical researchers, extracts of maitake were studied for their effects on the immune system and various cancers. The research suggests that maitake induces apoptosis of cancer cells and helps restrict the proliferation of bloods vessels that feed tumors. Other studies show that maitake can shorten the course of cancer chemotherapy, prevent chemotherapy side effects, and prevent destruction of T cells by HIV.

Maitake is rich in complex polysaccharides, especially the beta-D-glucans. The mycelium contains low molecular weight sugars and exopolysaccharides, known to activate immune responses and enhance the ability of immune cells to kill and consume lung and breast cancer cells. Besides enhancing immunity, maitake may also help control both high blood pressure and blood sugar levels.

Shiitake *(Lentinula edodes)*

Famous for its rich texture and meaty flavor, shiitake may be the most researched fungi in terms of potential health benefits. Studies show that shiitake is rich in vitamins, minerals, antioxidants and phytonutrients, but it also contains powerful compounds that discourage inflammation and bad bacteria, inhibit tumor growth, and destroy harmful viruses and fungi. Studies also show that shiitake also have antiviral and anticancer effects. It produces a large amount of vitamin D when exposed to sunlight and can be used as a natural vitamin D supplement.

Shiitake has been used as medicine in China for at least 500 years, for upper respiratory diseases, poor blood circulation, liver trouble, exhaustion and weakness, and low life energy or qi. It contains lentian, a protein-rich polysaccharide that simulates macrophages which boost other parts of the immune system. It also contains antiviral compounds. For example, a water soluble lignin-rich fraction has been found to have powerful antiviral activity

Shiitake grows on dead or dying hardwood trees and has been cultivated for food and medicine on small scale in China and Japan for over 1,000 years. 1982 research made large-scale commercial cultivation possible, and shiitake subsequently entered the U.S. market, where it can often be found in supermarkets and eaten as an immune and health enhancing food or taken as part of the Immune Enhancing Mushroom Blend (described later).

Turkey Tail *(Coriolus versicolor, Polyporus versicolor)*

Turkey tail grows on dead hardwood trees and is one of the most abundant mushrooms found in deciduous forests. Enzymes secreted from its mycelium are some of the most potent toxin-destroyers found in nature, which means it could be very helpful for cleaning up environmental pollution.

There are numerous studies that show it contains compounds that boost immune activity. Studies suggest various compounds in turkey tail inhibit the growth of various types of cancer cells, initiate apoptosis and stimulate immune responses such as natural killer cells.

An extract of turkey tail, known as PSK or krestin, is an approved anticancer drug in Asia. PSK enhances the effect of chemotherapy and radiation, prevents metastasis and has broad neoplastic activity. It is immune enhancing and prolongs the activity of antibiotics. It helps antibiotics be more effective with antibiotic resistant bacteria like MRSA. It is also antiviral and inhibits the HIV virus involved in AIDS.

Additional Help and Information

For more information about how medicinal mushrooms can help you contact the person who gave you this newsletter. You can also consult the following resources:

Mycelium Running: How Mushrooms Can Help Save the World by Paul Stamets
The Fungal Pharmacy by Robert Rodgers, RH(AHG)
Oriental Materia Medica: A Concise Guide by Hong-Yen Hsu
Medicinal Mushrooms by Christopher Hobbs

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Chaga
(Inonotus obliquus)

Chaga typically grows on birch trees in Northern Europe, Asia, and Canada and has been used by Eastern Europeans, Eurasians, Scandinavians, and Native Americans. The dried mushroom is used as a tinder to make fires, which where it gets the common names clinker polypore and cinder conk.

Chaga was traditionally used for tuberculosis, ulcers, heart, lung and liver problems. In 1955 an extract from it was approved as an anticancer drug (betungin) in Russia. There has been some pharmacological research done on it in, but more research is needed.

It has immune modulating qualities and stimulates macrophage and natural killer cells, which are part of the innate immune system. It also appears to contain antiviral and antioxidant compounds.

Agaricus *(Agaricus bitorquis, A. rodmannii)*

There are many agaracus species, which includes the white mushrooms most people are familiar with as well as crimini and portobello mushrooms. Not all species in the Agaricus genus are edible, however. The edible Agaricus are great mushrooms for helping to utilize waste from feedlots. They grow well in manure, especially when it is mixed with straw or sawdust.

In traditional Chinese medicine, button mushrooms are used to regulate body energy and remove phlegm from the body. They are often combined with reishi. They contain beta-glucans and other compounds that are antibacterial and antiviral. So, they can help to boost immune responses.

Poria or Hoelen
(Wolfiporia cocos)

Poria is a white mushroom that grows on wood, particularly on pine trees. However, the medicinal part isn't the mushroom, it's the sclerotium, which is a mass of hardened fungal mycelium that stores food reserves. The sclerotium develops underground and looks somewhat like a coconut. It has a long history of use in Chinese medicine.

In TCM it is considered a diuretic, relaxing nervine and nutritive. It has antibacterial activity and is used as a fortifying agent in many TCM formulas.

Using Medicinal Mushrooms

There are many beneficial mushrooms besides those mentioned in this article. Other varieties that may benefit human health include lion's mane, morels, and oyster mushrooms.

Mushrooms are extremely safe remedies, but don't harvest them from the wild unless you know what you are doing, as there are many toxic fungi as well. Remember the old saying, "There are old mushroom hunters, and bold mushroom hunters, but there are no old, bold mushroom hunters." So, get your medicinal mushrooms from quality suppliers who can guarantee you've got the right fungi.

For general health effects, a combination of mushrooms, taken frequently or even daily, can provide a broad umbrella of protection. All of the previously mentioned mushrooms, excluding Poria, are part of a good ***Immune Enhancing Mushroom Blend***. It can be taken for general health or as part of a natural protocol to fight infections or cancer. As a powder you can add a scoop to smoothies, soups or stews to fortify them with immune enhancing benefits.

If you're battling cancer or a serious infection you can also try an ***Immune Stimulating Formula***, which contains beta-glucans along with cordyceps, reishi and maitake. Take 2 capsules every 2-4 hours to boost the immune system when fighting infection or 2 capsules 3-4 times a day to aid the immune system in fighting as part of a holistic approach to cancer.