



Health Benefits of Edible Mushrooms: A Mini Review

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A mushroom is the reproductive structure produced by some fungi and is the fleshy, spore-bearing fruiting body of a fungus, typically produced above ground on soil or on its food source. It is somewhat like the fruit of a plant, except that the "seeds" it produces are in fact millions of microscopic spores that form in the gills or pores underneath the mushroom's cap. The spores blow away into the wind, or are spread by other means, such as animal feeding. If they land on a suitable substrate (such as wood or soil) spores will germinate to form a network of microscopic rooting threads (mycelium) which penetrate into their new food source. Unlike the mushroom, which pops up then passes away quickly, the mycelium persists, often for many years, extracting nutrients and sending up its annual crop of mushrooms. Mushrooms are fungi. They belong in a kingdom of their own, separate from plants and animals. Fungi differ from plants and animals in the way they

obtain their nutrients. Generally, plants make their food using the sun's energy (photosynthesis), while animals eat, then internally digest, their food. Fungi do neither: their mycelium grows into or around the food source, secretes enzymes that digest the food externally, and the mycelium then absorbs the digested nutrients. There are exceptions to these generalizations; some organisms are placed into their respective kingdoms based on characteristics other than their feeding habits.

One cannot speak about mushrooms without mentioning their incredible history. Mushrooms are one of the oldest forms of life on this planet, pre-dating plants and animals. They actually have a common ancestry to humans, but are much older. The largest mushroom currently living is underground in eastern Oregon, ranging 2,000 acres! Mushrooms are at the foundation of the food web. Mushrooms have been used medicinally, and as food, as far back in history as we can go. The famous "Iceman" was carrying two mushrooms. There are approximately 700 mushroom species that can be eaten as nutritious food. The Chinese and other cultures have used mushrooms as medicine traditionally for thousands of years.

Although the general medicinal benefit of mushrooms is immunity enhancing, varying mushrooms have varying degrees of specific benefits. Polysaccharides (specifically beta-glucans) are at the base of these benefits. Polysaccharides 'awaken' the immune system. It appears that combining several types of mushrooms in a formula, creates a synergistic immune response. So often it's beneficial to use formulas containing several varieties. It's very important to understand the source and processing of mushrooms for several reasons. First off, they must be organically grown. Otherwise, fungicides are used in the farming of them. Secondly, their medicinal value is completely linked to their genetic material; meaning they must maintain a close genetic connection (strain) to their wild originals/counterparts. And thirdly, how they are processed for medicine is important. Traditionally, hot water extraction has been the standard. This is



what the Chinese have always used for their medicinal purposes. This breaks down the indigestible chitin (a hard cellulose cell wall), which contains the potent immune-stimulating

compounds. Hot water extraction is the only proven method for breaking down these cell walls, and releasing the active compounds.

There are a wide variety of medicinal mushrooms available. Below I will discuss several that are currently used widely in the marketplace. Two companies that I am familiar with and trust are Fungi Perfecti and Mushroom Science. Both have great informational resources available. It is probably best to consult with a practitioner to find out what would be a good choice for you. Cordyceps sinensis traditionally used in Chinese medicine, Cordyceps is considered of benefit to the lung and kidney channels. It is used for rejuvenation and stamina. It is anti-bacterial, an anti-oxidant, anti-tumor, anti-viral, is helpful with blood pressure, blood sugar, cardiovascular health, cholesterol, immunity, kidney tonic, liver tonic, lungs, nerve tonic, sexual potentiator, and a stress reducer.

Reishi (*Ganoderma lucidium*) one of the most revered mushrooms in traditional Chinese medicine, with a long documented history. It is one of the best choices when looking for a general health tonic. It is considered an adaptogen. Along with its other benefits, Reishi is used to combat altitude sickness. It is also anti-bacterial, anti-candida, anti-inflammatory, anti-oxidant, anti-tumor, anti-viral, is helpful with blood pressure, blood sugar, cardiovascular health, lowering cholesterol, immune boosting, a kidney and liver tonic, aids in respiratory health, and reduces stress. Maitake (*Grifola fondosa*) one of the most studied extracts, Maitake has a long history of being both food and medicine. The Japanese have long used Maitake as an adaptogen. Research has shown that this mushroom has great anti-tumor benefits. It also seems to make chemotherapy more effective, while reducing the adverse side effects (hair loss, nausea, pain), as well as diminish pain that comes with terminal stage cancer. It is also anti-bacterial, anti-candida, anti-viral, blood pressure and blood sugar regulating, immune building, and a liver and lung tonic.



Lion's Mane (*Hericium erinaceus*) another mushroom used both medicinally and in food, Lion's Mane is a fairly new kid on the block with modern natural-health enthusiasts. Traditionally used in Chinese medicine for digestive tract ailments, this mushroom has recently also been discovered to potentially stimulate the production of Nerve Growth Factor (NGF), which is necessary for the growth of sensory neurons. An in vitro study has shown that an extract from this mushroom has promoted myelin sheath growth on brain cells. Researchers are hopeful that this will prove to be helpful for Alzheimer's and other neurological conditions. It is also anti-bacterial, anti-candida, anti-inflammatory, anti-tumor, and a nerve tonic. I have barely touched the surface of the wide range of medicinal mushrooms available, and being used today for great purpose. But I hope I have given you a good perspective on their far-ranging capabilities. Please consider them, when contemplating enhancing your own health and vitality. And remember, even the mushrooms you eat for fun, are beneficial!

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