

## **MUSHROOMS AND DIABESITY**

Within the industrialized nations of the world, obesity and insulin resistance are becoming more and more of a serious problem. Never before in our history have human beings been surrounded by so many easily attained calories while at the same time having the liberty of leading a completely sedentary lifestyle. This has led to a critical health crisis and from a public health perspective, it is vital to find methods of dealing with this problem that improve lipid and glucose metabolism immediately. One strategy is the use of food products that have a high nutritional value as well as a cholesterol and glucose lowering effect. It is within mushrooms that we find perfect candidates for this role.

Not only are mushrooms low in calories, they are full of biochemical properties, including fiber, amino acids, vitamins and minerals. The vitamins provided by mushrooms are A, B-complex, niacin, C and D. Some people are even of the opinion that mushrooms provide the best source of vitamin D2 to be found in any land organism. The minerals that can be found in mushrooms include copper, selenium, phosphorus, calcium, riboflavin and iron. These bioactive nutrients, found in a single mushroom, nutritionally support and assist the body in maintaining various bodily functions including: heart function, nerve and muscle function, fluid balance, a healthy immune system, and normal endocrine and male reproductive systems. In addition, mushrooms supply strong antioxidants to fight cell-damaging free radicals, help produce red blood cells, and release energy from the fat, protein and carbohydrates in food.

Mushrooms also contain a large amount of protein and hold all of the essential amino acids needed in our diet. The level of essential amino acids found within mushrooms is even higher than corn, peanuts and various types of legumes.

Finally, mushrooms are high in dietary fiber, which is an incredibly important component of a healthy diet. Dietary fiber stabilizes your glucose levels; keeping you from getting hungry too soon after eating and making sure that you stay full for longer periods of time.

Mushrooms can obtain nourishment and grow on all types of wood and soil, green plants, fruits and vegetables, old feathers, leather, bones, paper, cloth and all decaying organic matter in general. The enzyme systems within mushrooms can unlock the nutritional values of the materials upon which they grow. These biologic organisms contain incredible nutritional value and there is no doubt that mushrooms represent one of the world's greatest untapped resources of nutritious and palatable food for the future.

Perhaps one of the most amazing compounds found in various types of mushrooms are a type of polysaccharide known as beta-glucans. The beta-glucans within mushrooms are completely unique, yet are able to bond with specific receptors in various cells of the human body and greatly enhance immune support activity. Starting in the 1960's, universities, hospitals and laboratories began reporting significant research results involving medicinal mushrooms and the properties that their unique beta-glucans seemed to grant them. As of 2008, there have been thousands of mushroom studies and scientific papers filed with the US national library of medicine.

Not only have these mushrooms with medicinal properties been shown to stimulate the immune system, results of research and studies have shown a huge range of other benefits. They have been proven to also have cholesterol-lowering, anti-inflammatory, antimicrobial, antioxidant, anti-mutagenic, anti-tumor and adaptogenic effects as well as properties that help reduce the risk of heart disease, assist in the treatment of AIDS, herpes and other viral conditions, help treat Hepatitis as well as aid the treatment of Chronic Fatigue Syndrome, Influenza, Tuberculosis, staphylococcus sepsis, leprosy, environmental allergies, Bronchial Inflammation, Hodgkin's disease and stomach ulcers. Derivatives of medicinal mushrooms have also been shown to be an excellent adjunct with chemotherapy, radiation therapy and immunotherapy.

Beta-glucans may also be a useful nutritional tool to control metabolic disorders and appetite by helping to balance insulin levels. Mushrooms can further curb one's appetite by giving the body an excellent source of fuel that is low in calories which may result in weight loss.

Even with this very impressive list of positive benefits and qualities, perhaps the most important property that edible medicinal mushrooms possess is that they have minimal to no toxicity to the human body. They are a natural and completely safe food resource provided by millions of years of evolution, not an artificial product created in a lab. The unfortunate reality of Western medicine and its biochemical treatment approach to disease, especially when used in conjunction with serious illness or disease, is that there is a very wide range of possible side effects or allergic reactions. The very tragic irony is that often, the radical treatments which are necessary to help a patient in a dire situation ravage and destroy other functioning parts of their biologic system . Medicinal

mushrooms on the other hand positively enhance the aspects of health that are already present in a person body and don't take anything away in the trade off. Truly they stand alone in their own category of medicinal excellence.

And this medicinal excellence that mushrooms possess has not gone unnoticed throughout human history. In 1991, hikers in the Italian Alps discovered the frozen remains of a man who had died 5300 years earlier and within his pouch, discovered a string of dried mushrooms called birch polypores. This type of mushroom can be used as a medicine for treating wounds or for making a rich tea with immuno-enhancing properties.

A cave painting dated 3500 BC shows the image of mushrooms with electrified auras surrounding a dancing shaman. There is also a popular theory that the sacred and mysterious soma found in Vedic literature (1200 BC) was actually a mushroom. Soma was described as granting instantaneous enlightenment to whoever tasted it. Egyptian hieroglyphics from 2600 BC show that Pharaohs viewed mushrooms as the plant of immortality, resulting in the decree that no one could ever touch them except for the Pharaoh.

The medicinal properties of mushrooms were also acknowledged in the writings of Hippocrates (460 BC) as well as the famous herbalist Pliny (26 AD). In various other civilizations throughout the world including Russia, Greece, Mexico and Latin America, mushroom rituals have been practiced for hundreds, if not thousands of years.

Of all the world cultures throughout history though, none has been so closely entwined with medicinal mushrooms as China. The Reishi mushroom appears in the

medical literature of every dynasty that has ever ruled there. Ancient Chinese emperors even commanded that Reishi mushrooms, one of the most powerful tonic herbs, be handed over only to them. A large part of this can probably be attributed to the Taoists monks, who are the source of a large part of Chinese medicine. The Taoists monks in Chinese history believed in a divine form of immortality and their goal was to flow into the great Tao and become one of the immortals. In pursuit of this, they practiced many variations of advanced alchemy, one of which was the careful search for the elixir of immortality and the most important ingredient of the elixir of immortality was of course, the Reishi mushroom. China's first self-proclaimed emperor, Shih Huang, born in 259 BC, had many temples erected to the immortals in the hopes of luring those with the knowledge of making this elixir. With these influences, there have been many times in Chinese history when the Reishi mushroom has been worth more than gold.

Yet even with all of this rich and wonderful history and scientific data showing the medicinal properties of some mushrooms, they are still not recognized as a great resource in the West. Western culture sees the majority of mushrooms as something deadly and alien and folk medicine and its use of mushrooms has always been viewed as Pagan, backwards and within the realm of charlatans and quacks. But this deep emotional response is elicited only because of fear and ignorance.

Chinese culture on the other hand has never made a distinction between folk medicine and higher medicine. Western medicine attempts to treat the effects of an affliction, the observable reactions and functions of the body's chemistry and cells; while Chinese medicine attempts to treat the energy that is the source of the affliction. The result of this

is that the cause of real diseases such as chronic fatigue syndrome escape the understanding of Western medicine, while Chinese medicine understands it as a disharmony in the body's core energy and uses treatment techniques in the form of acupuncture and herbs and tonics; treatments that often prove to be incredibly effective. Although traditional Chinese medicine may appear strange to some Westerners, it represents the culmination of 4,000 years of clinical practice and observation and the use of mushrooms in tonics, teas and powders has been an integral part of that history.

The more knowledge that one gathers about the properties and benefits of medicinal mushrooms, the more obvious it becomes that incorporating them into the diet will only bring positive results. Mushrooms are a nutritional goldmine and are one of nature's greatest providers of completely natural health benefits with no toxicity, thanks to the unique properties of their beta-glucans. They can grow on practically any material and can be harvested by careful cultivation. Throughout the history of mankind, mushrooms have been used as a sacred tool of the gods, seekers of immortality and a primary component of Eastern medicine. It is only a recent occurrence in the history of mankind that some cultures have suddenly shied away from their use. Western culture and attitudes are finally starting to show signs of catching up with the knowledge that the rest of the world has known for thousands of years, finally seeing the massive amounts of benefits, nutritionally and medicinally, that mushrooms contain. Mushrooms are not something to be scared of; they are a completely natural and reliable source of nutrition and also offer a wide variety of medical benefits and making them an integral part of a person's diet will bring positive change in both body and mind.

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