

## Bonus Report #1

# Diabetes: The Chromium Connection

By Ty Bollinger

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## Bonus Report #2

# Frankincense & Myrrh:

Were the “Wise Men” on to Something?

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## Bonus Report #3

# Hydrogen Peroxide: Medical Miracle

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## Bonus Report #4

# Medicinal Mushrooms:

Some Facts about Fantastic Fungi

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## Bonus Report #5

# rBGH: Cows on Steroids!

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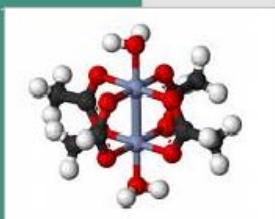
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**BONUS REPORT**

# **Diabetes:**

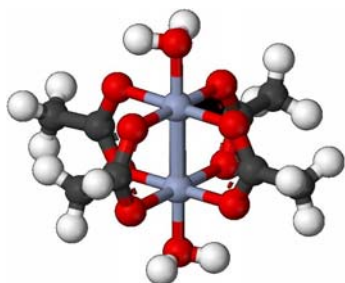
The Chromium Connection

**By Ty Bollinger**

# Diabetes:

## The Chromium Connection

Did you know that a highly refined diet that contains too few micronutrients has been recognized as the dominant factor in the rising incidence of diabetes? Among the missing micronutrients, chromium has the greatest impact on insulin response.



The necessity of chromium for human health, however, is without dispute. However, until recently, few physicians recognized the importance of supplementing chromium in the management of diabetes. Research at the USDA has revealed that chromium plays a very important role in amplifying insulin response in diabetics.

In 1977, the first published case of a chromium-diabetes link showed that the severe diabetic symptoms that developed in a woman while on long-term IV feeding were alleviated by supplemental chromium. According to Dr. Walter Metz, the USDA researcher who identified chromium as the fundamental component of the glucose tolerance factor (GTF), *“often 50% or more of the subjects in various studies improve following chromium supplementation.”*

The body needs GTF to metabolize sugar. Scientists have found that eating foods high in simple sugars stimulate chromium loss through the urine. In addition, refined

carbohydrates are devoid of chromium and other imperative trace minerals.

### Why Insulin?

Insulin is produced in the pancreas, and plays a primary role in the body’s response to carbohydrates, proteins, and fats. After you eat a meal, your pancreas releases insulin into the bloodstream. Glucose (blood sugar) levels also rise, but glucose cannot get into the cells without the help of insulin, which binds to special receptors on the cell membranes, facilitates the cell’s uptake of glucose.



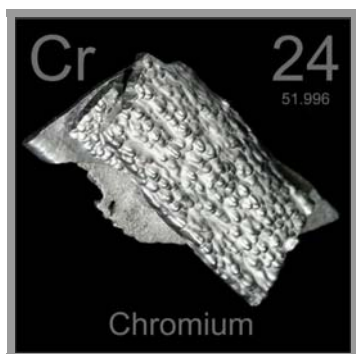
As you eat more refined foods, this causes sugar to **very quickly** enter the blood, thus requiring more insulin to transport it into the cells. If not enough insulin is produced, or if the insulin present is not sufficiently effective, the elevated blood glucose levels that normally follow a “*high carb*” and “*high sugar*” meal do not subsequently fall in the normal pattern.

This occurs because glucose cannot enter the target cells in the liver, muscles, and fat for storage or conversion to usable energy. This is why a highly refined diet is particularly troublesome for anyone with a blood sugar imbalance such as diabetes.

### The Vital Role of Chromium

All chromium compounds come from chromite ore and are found in air, water, soil, and biological samples. While glucose transport is the primary role of insulin,

chromium's main function is increasing insulin's **efficiency** in regulating blood sugar levels. Research indicates chromium helps open the door to the cell membrane, allowing glucose to enter. This occurs when chromium is converted into GTF, which supports the functions of insulin in the body.



However, unless you're a bodybuilder (which I used to be), you're probably unaware of chromium supplements. Chromium GTF, chromium picolinate, and chromium chloride are the most common chromium supplements. The trivalent form of chromium (Chromium III), which is the form of chromium found in our foods and in chromium supplements, appears to be among the safest of nutrients, with no potential to overdose.

Natural sources of chromium include broccoli, organ meats, brown rice, oatmeal, prunes, dried beans, apples, mushrooms, corn, brewer's yeast, red clover, wild yam, nettles, oysters, grapes, bananas, brown sugar, molasses, cocoa, beer (due to the brewer's yeast), wine, and green peppers.



## Type I vs. Type II Diabetes

With Type I diabetes (aka "juvenile-onset" diabetes), the cells of the pancreas do not produce and secrete enough insulin. Type II diabetes (aka "adult-onset" diabetes and "non-insulin-dependent" diabetes) develops when the amount of insulin secreted is normal yet ineffective in causing cells to take in glucose from the blood. This condition, known as insulin resistance, is the first step in the development of Type II diabetes.

Chromium deficiency causes insulin resistance, and supplementation with adequate chromium overcomes that resistance. It is generally presumed that chromium supplementation is of little benefit to people with Type I diabetes, since their problem is insulin insufficiency. This is not necessarily true, since Type I is sometimes combined with Type II, thus chromium supplementation does help the patient.

## How Much Is Enough?

The typical American diet is deficient in chromium. Healthy individuals need at least 80 mcg of chromium each day. Anyone with diabetes or hypoglycemia needs at least 200 mcg two to three times daily. Anyone with cardiovascular disease needs at least 200 mcg twice a day. Anyone with diabetes who uses insulin should consult with a healthcare provider about chromium supplements, since the insulin dosage may have to be adjusted.

According to Dr. Scott Whittaker, author of the best-selling book MediSin, "without a doubt, using food grade chromium GTF will eliminate diabetes within 6 weeks along with cod liver oil and a diet that has eliminated all processed grains and refined sugars."



**BONUS REPORT**

# **Frankincense & Myrrh:**

Were the "Wise Men" on to  
Something?

**By Ty Bollinger**



## Frankincense & Myrrh: Were the “Wise Men” on to Something?

Every year around Christmas time, we hear stories about the birth of Christ. And I’m sure that we’ve all heard about the “Wise Men” and their gifts of gold, frankincense, and myrrh. Have you ever wondered why they chose these gifts? Well, we all know that gold is the most precious metal, but why would they bring frankincense and myrrh?



### The History of Frankincense & Myrrh

Frankincense and myrrh are produced from closely related species of balsam trees. Frankincense is derived from the *Boswellia* tree, while myrrh is derived from the *Commiphora* tree. Both species of trees originate in the mountains of south Arabia (*Yemen and Oman*) and mountains of Somalia. Both frankincense and myrrh are considered to be oleo gum resins. This basically means that they are oily looking and are partly water soluble and partly alcohol soluble. Both frankincense and myrrh are collected as a thick liquid from natural cracks or cuts in the tree bark, which then dries into lumps. The essential oils which are distilled from these resins are typically very thick with a warm, sweet, and spicy aroma.

In ancient times, the Egyptians imported great quantities of frankincense and myrrh

from Palestine. Because of their unique aromatic fragrance, both oils were highly valued as trade commodities. The Ishmaelite travelers who purchased Joseph from his mean spirited brothers were journeying to Egypt with camels loaded with spices, balm, and myrrh (Genesis 37:25). It was believed that the Queen of Sheba brought great quantities of frankincense and myrrh and other spices from Yemen as gifts for King Solomon. As a matter of fact, the long-heralded "*balm of Gilead*" is a member of the myrrh family, known far and wide as a healing agent for wounds.

The trading of frankincense and myrrh expanded greatly around the 1100 BC, with the establishing of improved land routes and domestication of the camel. By 1000 BC, both resins were widely distributed throughout Babylon, Rome, Assyria, Egypt, Persia, Greece, and China. Frankincense and myrrh were prized possessions in the ancient world, rivaling the value of many precious gems and metals.

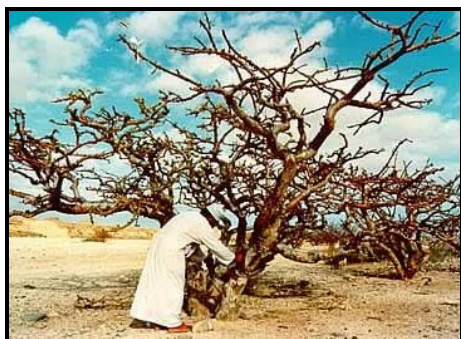
In his book *Healing Oils of the Bible*, Dr. David Stewart suggests that frankincense and myrrh (*and their uses*) were well known at the time the Bible was recorded. Although these healing oils were very valuable and not commonly used except by the wealthy, most people would have known exactly what they were and how they could be used.

### Frankincense

Frankincense is an oleo gum resin from *Boswellia* trees, of which there are over 25 species. Arabs called the milky sap of the *Boswellia* tree "*al lubn*" meaning "*milk*." *Al lubn* became anglicized to *olibanum*, which is another name for frankincense. When burned, frankincense produces a brilliant flame and produces a pleasant aroma.

Since frankincense encourages healthy growth and regeneration of skin cells, it is useful in treating cuts and wounds. Powder of the dried gum is a common ingredient in herbal plasters and pastes used to treat wounds, especially in Chinese medicine. A traditional recipe for an antiseptic wound powder is to mix the powdered resins of frankincense, myrrh, and dried aloe.

Tree sap has antibiotic and antifungal properties which protect the tree from infections. So when humans use oleo gum resins or essential oils derived from trees, we are utilizing the molecular components of the trees immune system to boost our own. Frankincense is used for treating a variety of respiratory problems such as bronchitis and laryngitis. Steam inhalation of the essential oil, combined with other respiratory oils such as eucalyptus, is highly effective.



Boswellia (*frankincense*) tree

The oleo gum resin of Indian frankincense (*Boswellia serrata*) contains four major pentacyclic triterpenic acids, referred to as boswellic acids. Studies have shown that boswellic acids have an anti-inflammatory action much like conventional non-steroidal anti-inflammatory drugs (NSAIDs). This being so, they have been found to be highly effective in such conditions as rheumatoid arthritis, osteoarthritis, colitis, Crohn's disease, and asthma. Recently, a few studies showed that boswellic acids may have anti-cancer effect on leukemia and brain tumors.



Frankincense resin

Researchers at Virginia Tech's college of veterinary medicine recently discovered that frankincense is effective at treating skin cancer in horses. Frankincense is "carrier oil" in that it penetrates membranes and cell walls. It is one of the few substances known to cross the blood barrier. A cancerous cell wall loses its ability to transfer substances across the membrane. Therefore, not all herbs or medications can effect a cancerous cell. However, "carrier" agents like frankincense, DMSO, and very alkaline minerals like cesium are highly penetrable across the membranes and have the opportunity to act on a cancerous cell or a brain tissue that is separated by the blood brain barrier.

Frankincense has been clinically researched to combat cancer and for use as an antidepressant. It is commonly used in European hospitals. Frankincense is being researched for its ability to simulate human growth hormone production and to assist in hormone balance.

When the oleo gum resin is collected exclusively for essential oil production, the fresh semi-solid material is also used. The fresh gum is chewed for strengthening the teeth and gums, to stimulate digestion, to expel congested phlegm, and to combat halitosis. Chewing of frankincense resin has the secondary benefit of cleansing the digestive system by stimulating bile flow and enzyme secretion and reducing fermentation.

Burning frankincense in churches had hygienic functions as well as spiritual importance. People of the Middle Ages lived in extremely unsanitary conditions, so the fumigation of churches helped reduce the smell from unwashed parishioners (*that slept with animals*) and reduce contagion through purifying the air.

Frankincense was used to make eyeliner. But not just any eyeliner — I mean that weird Egyptian stuff Elizabeth Taylor wore in *Cleopatra*. This was back in the days when they weren't sure whether the purpose of cosmetics was to enhance womanly beauty or scare off birds. ☺ Burning frankincense also repels mosquitoes and flies.

As you can see, the uses of frankincense are so numerous that it can accurately be described as a **panacea**, used for everything from colds to cancers. The general functions of frankincense resin and essential oil can therefore be described as immune-enhancing; antibiotic, antifungal, antiviral, and antiseptic. And as we have seen, frankincense also heals wounds and has distinct anti-inflammatory properties.

## Myrrh

Myrrh is an oleo gum resin obtained from Commiphora trees, of which there are over 50 species. These trees are very thorny trees which grow in thickets to a height of about nine feet. The name “myrrh” is derived from the Hebrew word “maror,” meaning bitter.

Myrrh is one of the oldest medicines in the world. It has been mentioned in Egyptian medical texts since 2,800 BC. It was used in embalming the Egyptian pharaohs and was also burned in temples of Greece, Babylon, India, Rome, and China. After Jesus was crucified, Joseph of Arimathea and

Nicodemus took His body and prepared it for burial using 75 pounds of myrrh and aloes (*John 19:39*). Myrrh was commonly used as perfume in the Middle East. In ancient Persia, when King Ahasuerus set about choosing a new queen to replace Vashti, the eligible girls had to complete a full year of beauty treatments, including a six-month cosmetic regimen with the oil of myrrh (*Esther 2:12*).



Myrrh tree in Somalia

Myrrh is similar to frankincense in its wound-healing and blood-vitalizing properties, and the two are often combined in salves. Like frankincense, myrrh resin is a predominant part of the immune system of the tree. Therefore, many of the therapeutic functions of myrrh are quite similar to frankincense.

Myrrh is a specific and highly effective antiseptic astringent for inflammations of the mouth, throat, and gums. It is also an effective treatment for chronic halitosis, gingivitis, and periodontal disease. It is a common ingredient of herbal toothpastes and mouthwashes, and is widely used throughout the Middle East and India for dental problems.

Myrrh was used as a perfume and was also added to cheap wine to make it more drinkable. Such a mixture was offered to condemned convicts to numb their pain before death. You might remember that the soldier offered the Lord Jesus some wine



mingled with myrrh while He hung on the cross (*Mark 15:23*).

This amazing substance has even been shown to be effective at treating step throat and tonsillitis. For these symptoms, tincture of myrrh can be combined with Echinacea and golden seal and used as a mouthwash and gargle. Myrrh is also beneficial for acne, rashes, and inflammatory skin problems. Myrrh oil can be applied directly to abrasions and wounds, and it can be made into salves for treating hemorrhoids and bed sores.



Myrrh resin

Since myrrh is very bitter, it stimulates the flow of digestive juices and improves nutrient absorption. Its antibacterial and antifungal powers help reduce candida and other pathogens in the gut. By improving digestion, myrrh clears toxins from the digestive tract and acts as a general detoxifying and anti-inflammatory remedy, thereby treating the root causes of arthritis, rheumatism, and gout. Interestingly, myrrh also has distinct anti-parasitic, anti-microbial, and antibacterial properties, and is a direct stimulant of white blood cell production. It is one of the most effective of all known disinfectants from the plant kingdom.

Researchers at Rutgers University have found two compounds in myrrh that are strong painkillers, another compound that helps lower cholesterol, and most recently, a potent anti-cancer agent. What makes myrrh such an exciting player in the anti-cancer field

is not only how well it kills cancer cells in general, but how it kills those that are resistant to other anti-cancer drugs. “*The myrrh compound definitely appears to be unique in this way; it is working where other compounds have failed,*” says Dr. Mohamed M. Rafi, an assistant professor in the department of food science at Rutgers. Myrrh has been shown to be selectively toxic against MDR (*multiple drug resistant*) tumor cells found in the breast and prostate.

Myrrh is believed to work by inactivating a protein called Bcl-2, a natural factor that is overproduced by cancer cells, particularly in the breast and prostate. When levels of this protein go too high, say experts, it not only promotes the growth of more abnormal cells, it can also make those cells resistant to anti-cancer drugs. In Dr. Rafi’s laboratory research, the myrrh compound was able to inactivate the protein in a line of breast tumor cells known as MCF-7, cells that in the past were particularly resistant to treatment.

The Greeks considered myrrh to be a sacred substance and those who could afford the resin used it as incense and to treat virtually every illness. Myrrh is the most often repeated aromatic essential oil in the Bible.

## Summary

A comparison of frankincense and myrrh reveals that myrrh is more astringent, antiseptic, and disinfectant, while frankincense is more anti-inflammatory and blood vitalizing. These resins and their essential oils were priceless medicines, worth their weight in gold to the Egyptians and Greeks, and were used to treat everything from skin disorders to viral infections, from cancer to depression and more. I guess it’s safe to say that the “wise men” may have been on to something after all. . .



**BONUS REPORT**

# **Hydrogen Peroxide:**

Medical Miracle

**By Ty Bollinger**

# Hydrogen Peroxide: Medical Miracle

Hydrogen peroxide ( $H_2O_2$ ) is one of the few “miracle substances” still available to the general public.  $H_2O_2$  is safe, readily available, and dirt cheap. And best of all, it works! The multiple uses of hydrogen peroxide ranks it right up there with Dimethyl Sulfoxide (DMSO). If you’ve never used either of these compounds, then you are overlooking two of the most powerful healing tools ever discovered.



## Sources & History

Did you know that you probably had your first sip of hydrogen peroxide shortly after you took your first breath? That’s right... mother’s milk (especially colostrum) contains extremely high concentrations of  $H_2O_2$ . In light of the fact that we know that one of the main functions of mother’s milk is to activate and stimulate the immune system in the infant, the fact that it contains abnormally large amounts of  $H_2O_2$  makes sense.

When ozone mixes with moisture in the air, it forms hydrogen peroxide, which comes down in rain and snow. It occurs naturally in fresh fruits and vegetables, some coming from rain and some manufactured during photosynthesis.

No one yet fully understands the complete workings of hydrogen peroxide, but we do know that it is **loaded** with oxygen. A pint of the food-grade 35% solution contains the equivalent of 130 pints of oxygen, while a pint of 3% hydrogen peroxide found at the local drugstore contains 10 pints of oxygen. We know that when  $H_2O_2$  is taken into the body (orally or intravenously) the oxygen content of the blood and body tissues increases dramatically.

As far back as the early nineteenth century, hydrogen peroxide was widely used in medicine. Many bacterial diseases (including syphilis) responded to  $H_2O_2$  when no other treatment was effective. In the early twentieth century,  $H_2O_2$  was used to treat several common diseases, such as whooping cough, cholera, typhoid fever, ulcers, tuberculosis, and asthma. However, as the pharmaceutical industry began to develop expensive, new drugs, hydrogen peroxide was increasingly ignored and finally discarded as a treatment.

## Cancer & $H_2O_2$

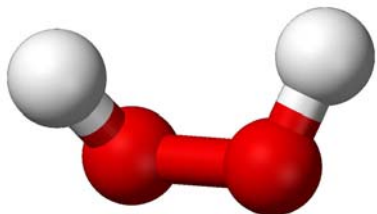
In 1932, Dr. Otto Warburg won the Nobel Prize for his discovery that cancer cells have different metabolic properties than normal cells. Healthy cells are aerobic, which means that they generate energy “with oxygen.”

However, cancer cells have reverted to a more primitive metabolic process, called fermentation which is anaerobic, or “without oxygen.” Based upon this premise, we know that cancer cells thrive in a low-oxygen environment.

One possible way in which  $H_2O_2$  can treat cancer is by releasing pure oxygen in the body. By saturating the cells and tissues with

oxygen, hydrogen peroxide promotes healthy, aerobic metabolism.

It is important to note that  $H_2O_2$  apparently does **not** produce free-radical lipid peroxidation, but instead stimulates important detoxifying oxidative enzyme systems. This is the direct opposite of what might be expected.



Dr. Charles Farr has shown that  $H_2O_2$  stimulates oxidative enzyme systems throughout the body, which triggers an increase in the metabolic rate, causes small arteries to dilate and increase blood flow, clears out toxins, raises body temperature, and enhances the body's distribution and consumption of oxygen.

### Free Radicals & $H_2O_2$

In the 1950's, Dr. Denham Harman developed the free-radical theory of aging. Free radicals are molecules that have a chemically active oxygen atom attached to them and can damage cells. Initially, it seemed that extra oxygen was always damaging, and that the antioxidants were the "good guys," but now it appears that not all free-radical reactions are bad.

For instance, oxygen assists the body's cleansing enzymes in removing toxins, and it is used by the immune system to attack invading bacteria. Also,  $H_2O_2$  stimulates natural killer (NK) cells, which attack cancer cells as they attempt to spread throughout the body. In the body's immune response,

hydrogen peroxide is released by T-cells to destroy invading bacteria, viruses and fungi. Blood platelets release hydrogen peroxide on encountering particulates in blood.

In the large intestine, acidophilus lactobacillus produces  $H_2O_2$  which keeps the ubiquitous candida yeast from multiplying out of control. When candida spreads out of the intestine, it escapes the natural control system and can gain a foothold in the organs of the body, causing what is called chronic fatigue syndrome.

### Conclusion

Most people are familiar with the common drugstore variety of 3% hydrogen peroxide, used for everything from sterilizing a cut to cleaning kitchen countertops. Hydrogen peroxide's sterilizing power comes from its extra oxygen atom.  $H_2O_2$  has a similar cleansing power in the body. But please note, the drugstore variety of  $H_2O_2$  should never be used internally, because of the chemicals it contains as stabilizers. For internal consumption, you will need food grade  $H_2O_2$ .



Bathing in hydrogen peroxide is the best way to get it into the body, and is inexpensive. The recommended rate is 8 ounces of 35% food grade hydrogen peroxide in a tub of non-chlorinated water, soaking 30 minutes.





## Medicinal Mushrooms: Some Facts about Fantastic Fungi

Mushrooms have been treasured as both medicine and food and medicine for thousands of years. Across the globe, many people enjoy hunting for wild mushrooms, appreciating the variety of colors, shapes, and sizes.

In Japan, street vendors sell many species of medicinal mushrooms to health conscious citizens who utilize them to maintain health and promote long life. Some Japanese people travel hundreds of miles in order to collect wild mushrooms that only grow on very old plum trees. Likewise, for thousands of years, the Chinese have valued many mushrooms for their healing properties, particularly tonics for the immune system.

Most medicinal mushrooms contain polysaccharides (complex sugar molecules) called beta-glucans that increase DNA and RNA in the bone marrow where immune cells (like macrophages and T-cells) are made. The combination of compounds in mushrooms is believed to target the immune system and aid in neuron transmission, metabolism, and the transport of nutrients and oxygen. Three mushroom varieties (reishi, shiitake, and maitake) have been studied intensively and have proven to possess strong medicinal properties.

### Reishi

Reishi (*Ganoderma lucidum*) is, without doubt, one of the most famous medicinal mushrooms. The Latin word *lucidum* means “shiny” or “brilliant” and refers to the varnished surface of reishi’s cap, which is reddish orange to black. Traditionally, reishi was very expensive, because it only grew in

the wild (on old plum trees), but it is currently both accessible and affordable due to cultivation techniques developed in the last quarter century. Reishi is renowned for its cancer-fighting properties and immune-stimulating effect.

An example of reishi’s cancer-fighting potential occurred in the summer of 1986. A Japanese woman had been refused an operation by several hospitals due to the advanced stage of her lung cancer. Desperate, she returned home where she found her husband had collected reishi in the forests. He boiled the mushroom and gave it to her to drink as a tea.



Reishi Mushrooms (above)

While this was going on, she approached Dr. Fukumi Morishige, M.D., Ph.D, a renowned Japanese surgeon (and a member of the Linus Pauling Institute of Science and Medicine) for help in treating her cancer. When Dr. Morishige looked at her X-rays, he was amazed that the tumors had shrunk and only scar tissue remained.

That was the impetus for Dr. Morishige to begin his studies of reishi as a treatment for “terminal” cancer. He found that in addition to the beta-glucans, reishi also increases immunoglobulin levels (immunoglobulins are specific types of antibodies) to produce an increased response to foreign “invaders” such as bacteria and viruses and also tumor cells.

After years of study, Dr. Morishige is now convinced that reishi is not only an excellent

cancer treatment, but also a very effective cancer preventative.

One interesting finding by Dr. Morishige was that the efficacy of reishi could be amplified by combining it with high doses of vitamin C, which helps the body to break down the huge polysaccharide molecules. In other words, vitamin C increases the bioavailability of reishi, and therefore, synergistically increases its anti-cancer and immune-stimulating properties.

As Dr. Andrew Weil writes, *“Reishi is a purely medicinal mushroom, not a culinary one, both because it is hard and woody and because it tastes very bitter. But it is non-toxic and has been the subject of a surprising amount of scientific research, both in Asia and the West. Although most of the research has been in animals, the results are so promising that I think human studies will soon follow.”*

He continues, *“...reishi improves immune function and inhibits the growth of some malignant tumors. Additionally, it shows significant anti-inflammatory effect, reduces allergic responsiveness, and protects the liver.”*

Another substance in reishi, called canthaxanthin, slows down the growth of tumors, according to author Phyllis A. Balch and other experts. As a result of these amazing anti-cancer abilities, the Japanese government officially recognizes reishi as a cancer treatment.

Besides cancer, reishi can help and treat cardiovascular disease, which is another of America’s top killers. Reishi is so effective at preventing heart disease due to its high content of substances like sterols, coumarin, ganoderic acids, and mannitol. Experts believe that the ganoderic acids lower

triglyceride levels and blood pressure, remove excess cholesterol from the blood, reduce platelet stickiness, and even help correct arrhythmia.

## Maitake

Maitake (*Grifola frondosa*) means “dancing mushroom” in Japanese. In ancient times, people who found the mushroom were said to dance with joy because it could be exchanged for its weight in silver. Maitake is a giant mushroom that often reaches 20 inches in diameter and that may weigh up to 100 pounds! In the USA, they also are known as “hen-of-the-woods” because the mass of mushrooms looks like fluffed-up feathers.



Maitake Mushrooms (above)

Maitake is common in eastern North America, Europe, and Asia. Until cultivation techniques were devised in the late 1970’s, maitake was harvested from the wild. But today, maitake is mass cultivated on a global scale.

Maitake contains grifolan, an important beta-glucan polysaccharide, which has been shown to activate macrophages in the immune system. In China, a maitake extract was shown to have an anti-cancer effect in patients with stomach cancer, lung cancer, and leukemia. Dr. Joan Priestley, MD reports that her patients with Kaposi’s sarcoma and other symptoms of AIDS show improvement

when administered maitake extract. Maitake's antiviral activity against the HIV/AIDS was confirmed by the National Cancer Institute in 1992.

But maitake not only helps with immune deficiency diseases, it seems to be able to reduce resistance to insulin in people with type 2 diabetes and lowers blood glucose. And if that's not enough, researchers have suggested that it's a good adjunct to chemotherapy, especially since it can help relieve chemo's serious side effects. Maitake also potentially benefits people with hypertension. And like reishi, the efficacy of maitake can be amplified by combining it with high doses of vitamin C.

## Shiitake

Shiitake (*Lentinula edodes*) is a prized mushroom with a delicious taste and texture that can be found on fallen hardwood trees. The caps have nearly ragged gills and they are covered with a delicate white flocking. Indigenous to temperate Asia, they are not found in the wild in the USA but are widely cultivated.



Shiitake Mushrooms (above)

A vast amount of research into shiitake's medicinal properties has been completed and shows that it has the ability to fight tumors and viruses and enhance the immune system. It is also used medicinally for treating AIDS, Candida, and frequent flu and colds.

Shiitake is also beneficial for soothing bronchial irritation and inflammation, reducing high cholesterol, treating liver ailments, and even regulating urine incontinence.

According to one prominent Japanese researcher, lentinan (a cell-wall constituent extracted from the fruiting bodies of shiitake) is an "immuno-modulating" agent which may be useful both as a general rejuvenative (for the elderly) and also to protect healthy, physically active young people from overwork and exhaustion.

Commercial preparations of shiitake are available in natural food markets. Standardized extracts are preferred because the amount of lentinan present is clearly stated on the bottle. Although fresh shiitake can be a valuable dietary supplement, the amount one would need to eat for medicinal doses is so high that it might cause digestive upset, so I recommend the extract. And like reishi and maitake, the efficacy of shiitake can be amplified by combining it with high doses of vitamin C.

## Conclusion

Reishi, maitake, and shiitake mushrooms have many overlapping properties: all boost immune function, all support cardiovascular health, and all show promise in lowering the risk of (and treating) cancer. However, reishi promotes respiratory and cardiovascular health; maitake is specifically recommended for the stomach and intestines, as well as blood sugar levels; and shiitake treats nutritional deficiencies and liver ailments.

And remember that all mushrooms must be cooked to get the nutritional value. The cell walls cannot be digested unless they are tenderized by heat.



## rBGH: Cows on Steroids!

Tens of thousands of US dairy cows are injected with rBGH each week, and virtually the entire American population is exposed to milk from rBGH-treated cows through milk, cream, cheese, yogurt, frozen yogurt, buttermilk, cream cheese, ice cream, iced milk, and baked goods.



### What is rBGH?

Recombinant bovine growth hormone is a genetically engineered hormone injected into cows to increase milk production. The Monsanto Corporation manufactures the product, which is sold under the trade name Posilac, though you'll also find it called BGH, rBGH, BST, and rBST.

### Health Effects

Recombinant bovine growth hormone causes harm to cows and may pose harm to humans. Injections of rBGH increase another powerful hormone, called IGF (insulin-like growth factor), in the cow and the cow's milk. According to Dr. Samuel Epstein, M.D., "IGF is not destroyed by pasteurization, survives the digestive process, is absorbed into the blood and produces potent growth promoting effects." Epstein says it is highly likely that IGF helps transform normal breast

tissue to cancerous cells, and enables malignant human breast cancer cells to invade and spread to distant organs. Too much IGF in humans is also linked with increased rates of colon and prostate cancer.

As I already mentioned, the use of rBGH on dairy cows increases the rate of mastitis, a bacterial udder infection. Mastitis leads to increased use of antibiotics, including penicillin. The overuse of antibiotics is already a serious problem in the livestock industry – giving rise to new strains of "superbugs" that are becoming more resistant to antibiotics and are strongly linked to hard-to-treat illnesses in people.

Also, in cows treated with rBGH, other significant health problems often develop, including a 50% increase in the risk of lameness (leg and hoof problems) and serious animal reproductive problems, such as infertility, cystic ovaries, fetal loss, and birth defects.

Interestingly, rBGH is like "crack" for cows. It "revs" their system and forces them to produce a lot more milk - but it also makes them sick. Even the FDA admits that cows injected with rBGH could suffer from increased udder infections (mastitis), severe reproductive problems, digestive disorders, foot and leg ailments, and persistent sores and lacerations.

Dairy cows typically have a lifespan of around 15 to 20 years. However, in a 1998 survey by Family Farm Defenders, it was found that mortality rates for cows on factory dairy farms in Wisconsin (those injecting their herds with rBGH) were running at 40% per year. In other words, after 2½ years of rBGH injections, most of these drugged and "revved up" cows were dead.



## Corruption

Since its approval in 1993, there has been sixteen years of controversy surrounding rBGH.



Chemist Joseph Settepani, in charge of quality control for the approval process of veterinary drugs at the Center for Veterinary Medicine, testified at a public hearing about threats to human safety. Soon afterwards, he was reprimanded, threatened, stripped of responsibilities, and relocated a trailer at an experimental farm. In later testimony before a congressional subcommittee, Settepani said, *“Dissent is not tolerated if it could seriously threaten industry profits.”*

The potential link between rBGH and cancer was one of the topics revealed in a 4-part news series set to air in February of 1997 by a Tampa-based Fox TV station. Just before the series was to air, however, Fox received threatening letters from Monsanto’s attorney, threatening *“dire consequences for Fox News.”* The show was postponed indefinitely. The reporters who had created the series later testified that they were offered hush money to leave the station and never speak about the story again.

Attacks on rBGH whistleblowers are not limited to the USA. In 1998, six Canadian government scientists testified before the Senate that they were being pressured by superiors to approve rBGH, even though they believed it was unsafe for the public. Their detailed critique of the FDA’s evaluation of

the drug showed how the US approval process was flawed and superficial. They also testified that documents were stolen from a locked file cabinet in a government office, and that Monsanto offered them a bribe of \$1-2 million to approve the drug without further tests.

## Consumer Backlash

A few years ago, the Tillamook County Creamery Association voted to ban rBGH in their cheese production due to consumer requests. Tillamook is actually my family’s favorite brand of raw cheese. Consumer backlash has led more supermarkets and dairy processors to reject the use of rBGH. The rise in popularity of “rBGH-free” labels shows consumers are taking greater interest in how and under what conditions their food is being produced.

When purchasing dairy products, be sure to look for labels similar to the following:



**BEWARE:** Most of the USA’s 1500 dairy companies are allowing the “co-mingling” of rBGH and non-rBGH milk, thereby contaminating between 80% and 90% of the milk and dairy supply (including all of the major infant formula brands). For a list of organic and rBGH-free dairies in the US consult the Organic Consumers Association website: [www.organicconsumers.org](http://www.organicconsumers.org).

Since its emergence on the market in 1993, **every industrialized country in the world (except for the USA) has banned rBGH.**