GUIDE TO MEDICINAL MUSHROOMS

Welcome to the world of fabulous fungi...

At Erbology, we've been fans of medicinal mushrooms for a long time. Yet, they're still relatively unknown in the Western world.

We're determined to change that!

This guide is designed to give you an introduction to medicinal mushrooms. Here you can find out a bit about their history and use in traditional medicine, and explore the latest scientific research into their health effects. You'll also find plenty of information which will allow you to find the right mushroom for you, depending on the results you want to achieve.

At the end of this ebook, you'll find some of the most common questions our customers ask us about using medicinal mushrooms. Finally, we've included our very own decadent spiced hot chocolate recipe which was designed specifically to be a perfect vehicle for our medicinal mushrooms.

We hope you enjoy our guide. If you have any other questions about our medicinal mushrooms, please do get in touch with us via the 'contact us' section of our website. We'd be happy to help.

In the meantime, let's delve into the mysteries of these magnificent mushrooms.

What are medicinal mushrooms?

Medicinal mushrooms, sometimes called 'functional' or 'adaptogenic' mushrooms, are fungi which are thought to have special benefits for your health.

It's important to make the distinction between medicinal and 'magic' mushrooms. While magic mushrooms are hallucinogens, medicinal mushrooms do not have this effect. They will not make you feel 'high'! Rather, they are 'medicinal' in the sense that they can help support your natural wellbeing. For example, many medicinal mushrooms are famous for supporting your natural immune response.

Medicinal mushrooms also belong to a family of fungi and herbs known as 'adaptogens'. You can find out more about those overleaf.

Medicinal mushrooms have a long history in traditional medicine. Back then, they would have been used as medicines to treat specific ailments. However, nowadays they are more commonly used as a natural way to help you maintain overall good health and manage physical and emotional stress.

It's important to mention that medicinal mushrooms cannot treat, diagnose or cure any disease.

However, many people around the world take medicinal mushrooms daily as part of their health and wellness routine.

While all medicinal mushrooms are thought to have beneficial effects on your overall wellbeing and to support your natural immunity, different varieties are famous for different specific strengths. We'll talk more about that in our 'meet our mushrooms' section, below, and provide some guidance on how to choose the best mushroom for your needs.

This guide includes information on the health benefits of medicinal mushrooms which comes from traditional use and modern scientific research. Wherever we have referenced scientific research, we have included a reference to the original research at the end of the ebook in case you'd like further information.

Are medicinal mushrooms right for me?

Most people who enjoy medicinal mushrooms are looking to support their overall good health. If you feel generally well, but could use some help managing stress or would like to give your immune system a bit of extra support, medicinal mushrooms may be a great choice for you.

You will also need to be prepared to make a commitment to medicinal mushrooms to see the best results, taking them regularly over a long period of time. Unfortunately, they can't be used as a 'quick fix' in response to a single stressful event. Rather, if you take them regularly, you will notice their effects begin to build up over time. To see more on how long to take medicinal mushrooms for, check out our FAQs below.

The history of medicinal mushrooms

China; The Han dynasty.

Stretching for over 400 years, from 206 BC to 220 AD, it was the second imperial dynasty of China. The dramatic events that occurred in the family's royal courts, which included murder, intrigue and rebellion, brought the dynasty renown over the whole region. Members of the dynasty also presided over a crucial moment in China's history.(1)

Under their watchful eye, the Silk Road trade route opened between China and Europe, In, 105 AD, paper was invented.

Around one hundred years later, just as the Han dynasty's star was waning, the Shen Nong Ben Cao Jing was completed.

One of the most important medical texts ever written, its name translates to 'The Divine Farmer's Classic of Materia Medica'. Historians believe that it was written by a collection of practitioners based on oral wisdom. Thanks to their knowledge, the text captures the details of the most important herbs and plants for medical treatment at the time.

Within its pages are advice about the use of medicinal mushrooms, including reishi, cordyceps and chaga.

Mushrooms in medicine

Imagine if you had been living around this time, and were suffering from asthma, coughing, dizziness, insomnia or shortness of breath. You might have chosen to visit a medical practitioner. In order to treat your ailments, they would have taken your pulse and prescribed a handful of ingredients with instructions for their preparation.(2) Reishi is likely to have been among them.

Meanwhile, if you were suffering from gut issues, you may have been prescribed lion's mane.

"Medicinal mushrooms are said to support our 'Qi', or vital life force."

The lengthy use of medicinal mushrooms tells us two things. Firstly, that they are safe to take (when correctly prepared and dosed). And, secondly, that practitioners of traditional Chinese medicine have appreciated their value for almost 2,000 years.

The modern mushroom

While Traditional Chinese Medicine has long espoused their benefits, it has taken Western science quite a while to catch up. Only now are scientists beginning to explore the potential of medicinal mushrooms.

Fortunately, much promising research has already been conducted. In several cases, it appears to back up what adherents of Traditional Chinese Medicine have been saying for a very long time. Simply, the benefits are expressed using different language.

For example, Traditional Chinese Medicine often suggests using medicinal mushrooms to support one's 'Qi' or vital life force. Modern readers have interpreted this in different ways, but generally we can take it to mean they have a general beneficial effect.

One modern explanation of this might be that several types of medicinal mushrooms have been found to contain substances which can neutralise free radicals.

These are tiny unstable molecules formed during your body's normal processes. Your cells are well-equipped to neutralise a few of them, but stressors such as environmental pollution and alcohol can cause your body to produce too many of them. If the balance tips too far towards the free radicals, they can start to cause damage to your cells.(3) Substances found in medicinal mushrooms (as well as many other plants such as fruits and vegetables) can help your body neutralise the excess of free radicals before they can cause too much damage.

As such, where traditional medicine might say that medicinal mushrooms support our 'Qi', modern research might attribute the same effect to their ability to help us neutralise free radicals.

Naturally, traditional medicine has been around for many thousands of years, whereas modern scientific research is a comparatively recent invention. As a result, much of the research available is in its early stages, or calls for further research to be done in order to confirm its findings. That said, there are many promising results which already provide a glimpse into the scientific reasons for the health benefits of medicinal mushrooms.

What is an adaptogen?

A Russian scientist, Lazarev, coined the word 'adaptogen' in the 1950s. The term brings together plants and herbs that have been used medically for many, many thousands of years. However, they never really got the recognition they deserve in the West – until recently.

In short, an adaptogen is a compound which can intervene in the stress reaction and alter it.(4)

However, there are a few more criteria that a plant must meet in order to be called an adaptogen.

- Firstly, adaptogens must work in a general way, rather than acting only on specific symptoms. In other words, they must be able to help ward off stress from any type of source. This includes environmental stress, physical illness, unhealthiness and even emotional stress caused by interaction with others.

- Secondly, adaptogens must be able to help people get back into 'balance', or retain your sense of healthy equilibrium.

- Lastly, adaptogens must not affect or disrupt the other functions of our bodies.

The definition has since been altered and sometimes expanded. However, these are the characteristics which are central to adaptogen classification.

How do adaptogens work?

The human body reacts to stressors by first raising an alarm. This sets off a hormone called cortisol.

Let's say you've just heard a piece of alarming news: your department at work is making cuts.

Cortisol prompts the fight-or-flight response and other related responses. These include increasing your heart rate and blood pressure; you're feeling panicked that your job might be on the line.

Next comes the 'resistance' stage. It continues to fight off stress for a prolonged period. During this stage, you might be trying to remedy the source of your stress. For example, you might try to find out more about the job cuts in your department, start looking for other jobs, or speaking to your manager. If you can't find a resolution to the issue, your body keep on in the resistance stage for a long period of time, and the cortisol keeps coming.

After a while, the exhaustion stage kicks in. This is just what it sounds like. Your immune system suffers. You are left without energy. In our job-related example, this is the point at which flop onto the sofa at home, feeling more upset and helpless than anxious about the job cuts.

In serious situations, depression and anxiety may come into play.

Adaptogens and stress

Stress is normal and necessary. However, we live in chaotic times, and our bodies experience quite a lot of stress simply due to our modern way of life.

This stress may come from situations which we struggle to adapt to emotionally and mentally.

However, there are also physical stressors in our environment, such as toxins from pollution, cigarette smoke, and even pesticides in our food. While they might not cause you to feel stress, they put stress on important bodily functions.

When physical and emotional stress become too much, we can lapse into a state of semi-permanent exhaustion. We feel down, our immune defences are down and we're tired all the time. In common parlance, we're really stressed out.

Adaptogens can help increase our resistance. They work by decreasing the severity of our initial 'panic' response, and lengthening the amount of time we can stay in the resistance stage. In short, they help us deal more calmly with situations of stress.

What other adaptogens are there?

Medicinal mushrooms are members of a large family of adaptogens. Both plants and fungi can be classified as adaptogens, as long as they meet all the criteria listed above.

For example, the Ayurvedic tradition makes regular use of adaptogenic fruits such as amla (Indian gooseberry) and a famous three berry blend called triphala. Roots such as adhwagandha and turmeric, and herbs such as tulsi (holy basil) are also important adaptogens in Ayurveda.

Other famous adaptogens include rhodiola, the root of the Rhodiola rosea flower, and schisandra. which is the berry of a climbing vine and is also known as 'five flavour berry' or 'magnolia berry'.

MEDICINAL MUSHROOM HEALTH BENEFITS

SUPPORTS NATURAL IMMUNITY

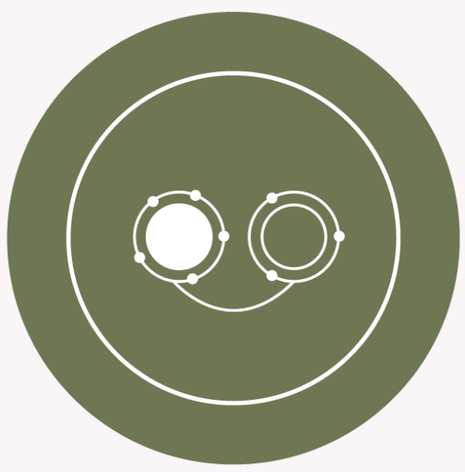
Medicinal mushrooms contain beta-glucans, a special type of polysaccharide which helps to support the natural functioning of your immune system. Erbology medicinal mushrooms are particularly high in beta-glucans. Some mushrooms, such as reishi, also contain substances which can inhibit the activity of certain bacteria and viruses.

SUPPORTS YOUR GUT HEALTH

Several types of medicinal mushroom, particularly turkey tail, contain prebiotic fibre. This nourishes the beneficial bacteria in your gut. A healthy, happy microbiome is associated with good overall wellbeing. It also plays an important role in immunity, as your microbiome is the first line of defence against germs brought in on the food you eat.

MAY IMPROVE ENDURANCE

Cordyceps is traditionally thought to support your natural life force and vigour. In the modern day, this seems to translate into giving you a boost of energy and athletic performance. Several studies have looked at the effects of cordyceps on the endurance and performance of athletes.



FIGHTS FREE RADICALS

Medicinal mushrooms contain substances which neutralise free radicals. These are tiny unstable molecules which are formed during natural processes such as exercise, and your cells are well equipped to clear a few of them away. However, stresses such as pollution and alcohol can cause more free radicals to be produced than your cells can handle. Here, antioxidants from natural foods can help your body deal with the excess.

BOOSTS YOUR ENERGY LEVELS

Cordyceps sinensis is being researched for its ability to reduce fatigue and bolster our energy levels. One particular experiment conducted on mice found that they could swim for much longer in a water maze when they had been given cordyceps sinensis.

BALANCES YOUR MOOD

Lion's mane mushroom is known to improve focus and balance your mood. Much of the recent scientific research into lion's mane has focused on its ability to support our cognitive health, with promising results.

What are beta-glucans?

To a simple question, a simple answer: beta-glucans are a type of fibre.

More specifically, they are a type of polysaccharide. This simply means that their structure is made up of several simple sugar molecules (monosaccharides) stuck together.

You may also come across the term beta-d-glucans. This just refers to a particular type of beta-glucan, which is found specifically in fungi and yeast.

Other types of beta-glucans can be found in foods such as oats.

Medicinal mushrooms such as reishi, cordyceps, turkey tail and chaga all contain high amounts of beta-glucans. They are thought to have a beneficial effect on your health.

Immunity

Scientists are only beginning to study beta-glucans and their possible benefits for our health. That said, there are a few paths of study which are proving particularly interesting.

Beta-glucans from mushrooms seem to support the immune system by enhancing the function of both microphages and natural killer cells.(5) Microphages are immune cells (more specifically, they are a small phagocyte cell). Phagocytes help eliminate pathogens from your body by engulfing them; the pathogen is effectively swallowed up by the phagocyte and broken down so it can no longer do you any harm.

A natural killer cell is a type of lymphocyte which detects and kills cells which have been infected by viruses. They can help control early signs of cancer.(6)

Beta-glucans also activate the complement system.(5) This lesser-known part of your immune system is made up of lots different plasma proteins which coat a pathogen, tagging it for destruction by other immune cells.

Its action 'complements' that of antibodies, hence its name.(7)

Cardiovascular health

A recent study found that eating beta-glucans in oats stimulated an increase in the population of a type of gut bacteria called Verrucomicrobia.

The regulation of this type of bacteria by beta-glucans also caused an improvement in plaque build-up within the walls of the aorta. Similarly, it helped to control the negative health effects of fatty deposits in arteries.(8)

Given that cardiovascular disease is the leading cause of death worldwide, adding some beta-glucans to your diet may be a good choice for your long-term health.(9)

A study on male participants with high cholesterol levels found that soluble beta-glucans (such as those found in oats) led to reduced blood cholesterol levels over the long term.(8)

Medicinal mushrooms contain both soluble and insoluble beta-glucans. The anti-cholesterol action of the latter type is less well understood, but studies continue to unravel their secrets.

Research has shown that consuming fungi reduces cholesterol levels in animals. Increasing their intake of these fungi, on the other hand, might lower the animals' risk of cardiovascular disease.(8)

"Beta-glucans are thought to be responsible for many of the health benefits of medicinal mushrooms."

Meet our mushrooms

All of the medicinal mushrooms listed below are adaptogens, meaning they can help you deal with physical and mental stresses. What's more, they all contain beta-glucans and health-promoting secondary metabolites. However, they also bring their own specific strengths to the table.

That means that, depending on the result you're hoping for, one mushroom may be more suitable for you than another. Let's take a look at the options.

Reishi

Reishi is a medicinal mushroom which is used in traditional Eastern medicine to treat a range of ailments. It has a flat, ear-shaped cap with a reddish-orange colour. In the wild, foragers tend to spot it growing at the base of trees.

Reishi is the Japanese name for the 'Ganoderma lucidum' fungus. The Latin word 'lucidus' means 'shiny' or 'brilliant', and refers to the shiny cap of the mushroom. In Chinese, reishi is known as 'lingzhi', which translates as 'divine mushroom'. Lingzhi is known as a 'herb of spiritual potency' in Chinese medicine.(10)

Traditional Chinese Medicine has made use of lingzhi, or reishi, for over 2,000 years. Early medical texts such as the Ben Cao Gang Mu, which appeared in around 1590 AD, mention reishi and comment on its health benefits. At the time, practitioners believed that reishi could enhance your 'vital energy', improve memory and cardiac function, and even have anti-aging effects.(10)

Reishi is fairly rare in the wild, and before we discovered ways to cultivate it, only the very wealthy could afford it. Many believed that the mushroom only grew in the land of the immortals, on the 'three aisles of the blest'.(10) These are legendary islands thought to be off the coast of China, and which are interwoven with Taoist beliefs about immortality. It was believed that the plants that grew on these islands could grant everlasting life.(11) It's perhaps not surprising, then, to hear that reishi is often referred to as the 'mushroom of immortality'.

More recently, scientists have looked at reishi's ability to support the immune system. Reishi is high in triterpenes, a special type of hydrocarbon found in many plants, animals and fungi. One study showed that triterpenes extracted from reishi mushrooms had an anti-inflammatory effect.(12) Another looked at the effect of polysaccharides taken from the plant and found that they had several immunity-supporting effects. These included promoting the function of antigen-presenting cells, which are essential for your adaptive immune system, and boosting cellular immunity.(13)

There's also evidence that some substances found in reishi can help to support your T and B lymphocytes, which play an important role in your immune system. (10) However, most of these studies have been conducted 'in vitro', meaning that their hypotheses haven't yet been tested on human beings. More research is needed to confirm whether or not the effect can be transferred to real people.

Other research noted reishi's powerful antioxidant properties, attributing these to the presence of triterpenes, the special hydrocarbons mentioned above.(10)

Some substances found in reishi have been shown to inhibit the activity of microbes such as viruses and bacteria. One study found that some substances extracted from reishi mushrooms were able to inhibit the herpes simplex and vesicular stomatitis viruses.(10) In another, an extract taken from the stem of the reishi mushroom, used in conjunction with known antibiotics, helped to improve the latter's effects against certain types of bacteria.(14)

Reishi has a rather bitter taste and woody texture, so it's ideal to take it in powdered form, mixed into a hot drink like coffee or hot chocolate.

Lion's mane

Lion's mane is an edible mushroom which is important in Traditional Chinese Medicine. Its Latin name is 'Hericium erinaceus', but it also goes by a wide variety of creative names in different countries. You might hear it referred to as 'Bearded Tooth Fungus', 'Monkey Head Mushroom', 'Satyr's Beard', 'Bearded Hedgehog Mushroom' or 'Pom Pom Mushroom'.

In Japan, lion's mane goes by the name of 'Yamabushitake', which translates to 'those who sleep in the mountains'. This is a reference to a sect of hermit monks called Shugendo who live in the mountains and wear long, flowing white robes. (15)

It can be eaten whole, and has a delicate texture which many people compare to seafood. However, it's also widely available as a powder.

Lion's mane mushroom has been a common feature in both Chinese and Japanese traditional medicine. Historically, it seems that traditional practitioners thought of lion's mane as a good 'all-rounder', with benefits for the whole body. They believed that lion's mane nourished the five internal organs (the liver, lung, spleen, heart, and kidney) as well as helping with digestion, strength and 'general vigour'.(16) Traditional Chinese medicine also recommends lion's mane to treat Qi deficiency. Your 'Qi' is your vital energy, so symptoms of a Qi deficiency might include insomnia and a general feeling of weakness.(16)

Lion's mane mushrooms are especially associated with brain and cognitive health. Buddhist monks may have used them as a 'brain tonic' and to help them concentrate during long periods of meditation.(15) Modern research seeks to confirm lion's mane's ability to support cognitive function. A Japanese double-blind medical trial looked at whether lion's mane could improve cognitive function in men and women between 50 and 80, who had been diagnosed with mild cognitive impairment. The participants took a tablet containing lion's mane three times a day for 16 weeks and were observed for a further four weeks. The people who had taken lion's mane scored higher on the cognitive function scale


Reishi


Lion's mane


Cordyceps sinensis


Chaga


Turkey tail

than a placebo group. The authors of the study concluded that their results suggested that lion's mane was an effective treatment for mild cognitive impairment.(17)

Lion's mane may also be helpful as an anti-depressant. A study from 2020 discovered that bioactive compounds found in lion's mane were able to somewhat mimic the effect of conventional anti-depressant medications.(18)

Cordyceps sinensis

Practitioners of traditional medicine have used cordyceps for generations to treat a range of ailments across different countries and cultures. Its Latin name is 'Ophiocordyceps sinensis'. In Nepal, reported cordyceps benefits include the treatment of diarrhoea, headache, cough, rheumatism and liver disease. In fact, the locals value cordyceps so much that it has acquired the nickname of 'Himalayan Gold'.(19) Local practitioners in Tibet have long been recommending that their male and female patients take cordyceps with a cup of milk to benefit from its aphrodisiac properties.(20)

Cordyceps has a fascinating life cycle. Rather than growing on decaying matter, it makes use of a live host: moth larvae.

"Cordyceps has powerful antioxidant properties and acts as an anti-inflammatory."

The spores of the cordyceps fungus infect the moth larvae during the summer, when they are underground. The spore grows inside the larva, using it for food during the winter. When spring arrives, the fungus directs the larva to the surface of the earth. There, the larva dies and the fungus emerges from it in the form of a stalk. This led to Tibetan locals naming it 'yartsa gunbu', which translates as 'winter worm, summer grass.' In English, Cordyceps sinensis is known as 'caterpillar fungus'.(21)

Fortunately, the vast majority of cordyceps on the market today grows in carefully controlled conditions. To replace the fungus's usual source of food, modern producers tend to grow cordyceps on a liquid or natural solid medium. This provides the fungus with all the nourishment it needs to grow, without having to depend on any unfortunate moth larvae.

Cordyceps has powerful antioxidant properties and acts as an anti-inflammatory.(22) Scientists are also investigating cordyceps for its ability to reduce fatigue and improve endurance, in both humans and animals. In one experiment, mice were once again returned to the swimming pool to see if cordyceps helped them to swim for longer. After three weeks of taking cordyceps, the mice were able to swim for significantly longer than their peers. The higher the dose of cordyceps, the more marked the effect.(23) The study put the results down to an increased heartbeat strength, reduced constrictions in the mice's tracheas, and better relaxation of their vascular smooth muscle (found in the walls of blood vessels).

Another study examined whether cordyceps would work in a similar way on human beings.(23) A double-blind, placebo-controlled study was undertaken at Beijing Medical University Sports Research Institute. The study showed that participants who had been given a product containing cordyceps were better able to clear lactate from their cells. Your body produces lactate (the ionised form of lactic acid) during anaerobic respiration. This usually occurs during intense exercise when oxygen supplies are short. If too much lactate builds up, you can suffer from lactic acidosis. Symptoms include nausea, weakness and muscle cramps.(24) So, athletes certainly want to avoid too much lactate in their systems. The study concluded that cordyceps could help athletes improve their anaerobic performance.

Turkey tail

Jutting out from deadwood or living trees like little shelves, turkey tail mushrooms boast beautiful brown, orange and white bands on their 'conk', or upper part. They fan out above the forest floor, looking truly like the tail feathers of a proud bird.

You might also hear turkey tail referred to by its Latin name, Trametes versicolor (formerly Coriolus versicolor). Any mushroom forager worth their salt will know that turkey tail mushrooms are a relatively common sight in the woodlands of North America, Europe and Asia. Turkey tail has a tough, leathery texture. So, many people choose to consume it in a tincture or tea, as opposed to cooking it as you might with a mushroom from the grocer's.

Practitioners of Traditional Chinese Medicine (TCM) have used turkey tail for around 2,000 years to treat various ailments.(25) These include the treatment of 'dampness' and 'phlegm'.(26)

Turkey tail naturally contains an active ingredient called polysaccharopeptide, or PSP. It can be found in the mycelium (thready bits) of the fungus, and also in fermentation broths made from turkey tail. PSP has been approved for clinical use in Japan and China since the 1970s.(25)

A recent review of 41 studies into the immunity-boosting benefits of turkey tail made some impressive conclusions. It found evidence across the different studies to show that PSP enhances immune cell function. PSP also seems to boost the ability of microphages to perform phagocytosis (the process by which microphages engulf or 'eat' invading pathogens).(25)

What's more, turkey tail seems to help out in another important area in our immune defences: the gut. Turkey tail provides prebiotic fibre, a special type of fibre which we humans can't digest. However, the 'good' bacteria in our gut can, leaving them nourished and better able to fight off germs coming in via the digestive system. A recent study found that turkey tail acted as a prebiotic and helped to regulate the gut microbiome of healthy people.(27)

Turkey tail also has free-radical-fighting properties. A 2018 study found that an extract of the fruiting body of turkey tail (the colourful, banded top part) was able to effectively scavenge free radicals and demonstrated good antioxidant activity.(28)

Chaga

Chaga is a fungus which grows on birch trees in the northern hemisphere, including Japan, Siberia, Ukraine and Canada. Hugging onto its birch tree host in the wild, it looks a bit like brittle charcoal.(29)

Scientists found that polysaccharides present in chaga were able to reduce glucose, triglycerides, fat acids and cholesterol levels in the blood.(30)

Another study found that chaga was able to help repair damaged pancreas tissues in mice with diabetes.(31) Chaga may also have benefits for your cholesterol levels. As a quick recap, it's thought that there are two types of cholesterol: 'good' HDL and 'bad' LDL cholesterol. LDL cholesterol is the type which is associated with a build-up of matter in your blood vessels.

Research on mice has shown that chaga reduced 'bad' cholesterol and increased blood levels of 'good' HDL cholesterol.(32)

However, it's important to note that this research has broadly been conducted either 'in vitro' or on animals such as mice and rats. While the results look very promising, more research is needed to see if the same health benefits can be applied to humans.

Immunity Blend

As mentioned above, all of these medicinal mushrooms contain beta-glucans. These special polysaccharides are thought to help support your natural immunity. So, if taking care of your immune system is your goal, any of the mushrooms listed above would be a good choice.

However, we've also created a special Immunity Blend of eight powerful mushrooms which can take the hard work of searching for the right mushroom for you.

Our blend contains reishi, cordyceps, lion's mane and turkey tail, along with shiitake, hen-of-the-wood, china root and mushroom of the sun.

If you're not sure which mushroom is the right one for you, why not start with our specially selected blend?

Which mushroom is right for you?

ENERGY + PERFORMANCE

47% beta-glucans

Promising scientific studies have revealed that cordyceps may help improve endurance and athletic performance. Cordyceps attracted international attention when the Chinese women's Olympics team credited it with their record-beating performances in 1993. It also has potent free-radical-fighting properties, helping to protect your cells from oxidative stress. If you're planning on going for a run or heading to the gym, try starting the day with a cordyceps coffee!

IMMUNITY + DEFENCE

20% beta-glucans

Reishi is known as the 'mushroom of immortality'. While it may not be able to deliver on that promise, it does contain beta-glucans and triterpenes. Both compounds have been shown to support the normal functioning of the immune system. What's more, substances in reishi appear to inhibit the activity of some viruses and bacteria. Those two properties combined make reishi a great choice if you're interested in bolstering your body's natural immune defences.

MOOD + FOCUS

32% beta-glucans

Lion's mane was once used by Taoist monks as a meditation aid and was often recommended by traditional practitioners as a good 'all-rounder' for general health. Modern scientific research has focused on the benefits of lion's mane for cognitive health, focus and mood. While further research needs to be done before it can be claimed conclusively, some research suggests that lion's mane can mimic the effects of anti-depressant medication. It may also help with cognitive impairment.

GUT HEALTH

Only available in the USA.

21% beta-glucans

Like all our mushrooms, our Organic Turkey Tail Powder contains immunity-supporting beta-glucans. However, it also provides prebiotic fibre. The beneficial bacteria in your gut break this down and extract the nutrients within, keeping them healthy and happy. Given the close link between gut health and immunity, keeping your microbiome healthy and diverse is an added boon to your natural immunity. Turkey tail is a great choice if you want to take care of your gut and overall health.

IMMUNITY + EASE

Not sure where to start with medicinal mushrooms? We've created a special blend of eight powerful mushrooms which is perfect for anyone who does not have much prior experience with medicinal mushrooms. Our blend contains reishi, lion's mane, cordyceps, turkey tail, shiitake, hen-of-the-wood, china root and mushroom of the sun. Simply stir into your morning tea or coffee and relax in the knowledge that you're helping to support your natural immune defences.

OVERALL WELLBEING

7% beta-glucans

Alongside the beta-glucans which support your immune system in the fight against invading germs, research suggests that chaga may also be helpful in controlling your blood sugar. Chaga may also help to regulate your cholesterol levels. One study (performed in mice) found that chaga could increase levels of 'good' HDL cholesterol while reducing 'bad' LDL cholesterol. Chaga is a good choice if you'd like to address these elements of your health.

What to look for when buying medicinal mushrooms

There are many suppliers of medicinal mushrooms out there. However, there is a huge variance in quality. Medicinal mushrooms are often considered a 'novel food' and as such, many countries around the world don't regulate them. So, how can you be sure you're getting a high quality product?

Luckily, there are a few simple steps you can take to make sure your chosen supplier is acting responsibly, and that your product is pure and of a high quality Before buying any medicinal mushrooms, we strongly recommend asking the following questions.

What is the percentage of beta-glucans?

The single most important measure of quality in medicinal mushrooms is the quantity of beta-glucans. These are the immunity-supporting polysaccharides mentioned above. Usually, the amount of beta-glucans is expressed as a percentage.

As the percentage of beta-glucans is a strong indicator of the medicinal properties of the mushroom, any good supplier will clearly state the quantity of beta-glucans in their products.

Important note: this is different from the overall percentage of polysaccharides. You should always judge mushroom quality by beta-glucans, rather than polysaccharides.

This is because some suppliers choose to grow their mushrooms on grain or starch. Sometimes, the supplier does not separate the starch from the mushrooms when they are ready to harvest, meaning your product is full of starchy fillers with no medicinal properties. As they are starches, they also register as polysaccharides, even though there are no health benefits whatsoever. Unscrupulous suppliers often use a measure of 'total polysaccharides' to trick consumers into thinking they are talking about beta-glucans. Beware of this practice, and don't be afraid to ask questions of the supplier if you're unsure.

Are you buying 'myceliated grain'?

Whenever you're considering buying a medicinal mushroom product, check the label carefully for any mentions of 'myceliated grain' or 'mycelium on grain'. This means that you are buying both the mycelium (thready, root-like part of the mushroom) and the grain on which it was grown. As a result your product will be less potent than one made with all parts of the fungus (including mycelium, fruiting body and secondary metabolites). It will also be worse value for money.

It is possible to grow mushrooms on a starchy substrate and separate it out during the harvest. However these products will be labelled as pure mushroom and not myceliated grain. Many reputable companies are aware of this issue and state clearly that they do not use starch or fillers in their product, Erbology mushroom powders, of course, contain only mushroom with no added starch or fillers.

What part of the mushroom is in the product?

There are three parts to any fungus: the mycelium, the fruiting body and secondary metabolites. Mycelium, as mentioned above, has a thready appearance and acts like the roots of the fungus The fruiting body is the cap and contains spores which help the mushroom reproduce. Finally, the fungus produces secondary metabolites. These are chemicals the fungus makes once it reaches maturity.

Some products contain a mixture of all these parts, while others use a specific part of the mushroom.

It's quite common to find products which only contain the mycelium, which you should avoid for two reasons. Firstly, the mycelium may actually be 'myceliated grain' (the label should provide this information) and secondly, you may be missing out on health-supporting secondary metabolites.

Have the mushrooms been tested for quality by an independent body?

As mentioned, medicinal mushrooms are not regulated in Europe or America. That means there are some unscrupulous producers on the market. Hopefully the information in this guide will help you to spot them.

However, thankfully, there are scientific tests which responsible suppliers can use to demonstrate the quality of their product.

These tests are undertaken by independent laboratories who do not have a vested interest in the product, so their results are reliable. Reputable companies are usually very happy to demonstrate that they have performed these tests on their products and should provide you with further information if requested.

At Erbology, we use an independent laboratory called Eurofins to test the quality of our products.

A test called Megazyme is used to measure the beta-glucans in our product. It is the most reliable test for beta-glucans currently available.

What cultivation methods are used?

While most medicinal mushrooms are grown in controlled conditions, you should still look for a company that uses organic cultivation methods. This means using an organic substrate and not using any chemical pesticides or additives. At Erbology our mushrooms, just like all of our products, are certified organic.

In fact, you can see the conditions our mushrooms are grown in for yourself! In the image above, a crop of reishi is being harvested for our Organic Reishi Mushroom Powder.

The mushrooms are grown on a natural substrate such as sawdust. This makes it very easy to separate the mushroom from the substrate when it's time to harvest.

Is your cordyceps Cs-4?

As discussed above, cordyceps sinensis has a rather unusual life cycle in the wild, making it trickier to grow in controlled conditions than other mushrooms.

Some producers therefore use a type of cordyceps known as CS4, which is grown in liquid and produces only mycelium.

Many suppliers use Cs-4, as it has a similar chemical makeup, and apparent health effects, as cordyceps sinensis.(33) However, as mentioned above, there are some downsides to choosing a product which only contains mycelium.

Erbology cordyceps is not Cs-4. We grow our cordyceps on a starchy medium and use all parts of it including the mycelium, fruiting body and secondary metabolites.

How to mix and match medicinal mushrooms

It's absolutely fine to mix and match your medicinal mushrooms as long as you don't exceed the daily recommended total dose. For example, we recommend taking half a teaspoon of our medicinal mushroom powders up to twice a day. So, you could use half a teaspoon of cordyceps in the morning and then half a teaspoon of lion's mane in the evening. Alternatively, you could mix the powders together, up to a total of half a teaspoon twice a day.

When mixing mushrooms, think about the effects you'd like to see. If you're using cordyceps to help you feel energised, it's sensible to take it in the morning. Meanwhile, mushrooms such as lion's mane and reishi could be taken before bed.

You can combine medicinal mushrooms in the way that best suits you and your goals. Many people like to combine reishi and cordyceps for immunity and energy. However, if your goals are related to balancing your mood and supporting your gut health, lion's mane and turkey tail would be a better pairing for you.

If you're not sure where to start, you can also let us do the blending! Our Immunity Blend powder was created to harness the immunity-supporting power of eight different mushrooms. It's a great introduction to medicinal mushrooms if you haven't had much experience with them before.

What's the best way to take them?

We recommend taking medicinal mushrooms by mixing half a teaspoon of your chosen powder into a hot drink such as tea, coffee or hot chocolate. This not only helps to mask any bitterness from the tougher mushrooms, such as reishi, but also helps to draw out the beta-glucans. On the next page you can find our very own special recipe for spiced hot chocolate, which was created specifically to provide a delicious way to take your medicinal mushrooms.

Alternatively, you can simmer any of our mushroom powders in water, soups or stews for 15-20 minutes.

How long should you take medicinal mushrooms?

For best results, you should take medicinal mushrooms every day for two to three months (one 'cycle'). You can take any of our mushroom powders up to twice a day. After three months, you should stop taking your mushrooms for a short period. This gives your body time to 'rest and reset'. A generally healthy person can take up to 3 cycles per year, each lasting 2-3 months.

Alternatively, you may wish to move onto a different type of adaptogenic herb for your next cycle.

What do they taste like?

Each mushroom has its own particular flavour. Some mushrooms, such as lion's mane and turkey tail, have a mild flavour. Lion's mane is regularly eaten as an ingredient in dishes such as stir fries in some parts of the world, and its flavour is pleasant and reminiscent of a 'normal' grocer's mushroom.

You might like, therefore, to add lion's mane and turkey tail into savoury dishes such as soups and stews, where its natural taste will add to the dish.

Other mushrooms, such as reishi and chaga, have a rather bitter flavour. This is why we recommend drinking them in a coffee or hot chocolate. Coffee, with its naturally bitter flavour, masks any bitterness from the mushrooms. Meanwhile, hot chocolate would be more suited to those with a sweeter tooth.

Who should be cautious when taking medicinal mushrooms?

Medicinal mushrooms can have a powerful effect on the body, and they should be used with care. If you have a medical condition or take medication, you should consult your doctor before adding any medicinal mushrooms to your routine.

You should avoid medicinal mushrooms if you have a mushroom allergy.

There is little scientific research which has looked at the safety of medicinal mushrooms for pregnant or breastfeeding women, or children. As a result, we would recommend that you err on the side of caution and do not use medicinal mushrooms if any of these apply to you.

If you are in any doubt, consult your doctor before using medicinal mushrooms.

When can I expect to see results?

As with all adaptogens, it can take a while before you feel the effects of medicinal mushrooms.

If you are taking medicinal mushrooms at the recommended dose every day, you should start to notice a change after two to three weeks of use.

How to make our delicious **spiced hot chocolate with medicinal mushrooms**

Ingredients

- 450ml almond milk (435ml water + 4 tbsp Erbology Organic Almond Flour)
- 1 tbsp raw cacao powder
- 1 tbsp dark brown sugar
- A tsp vanilla sugar
- ⅛ tsp hot chilli powder
- Pinch of sea salt
- 2 tsp Erbology Organic Lion's Mane Mushroom Powder, or another mushroom of your choice
- 2-3 whole star anise
- 4-6 cardamom pods
- 50g vegan dark chocolate, grated
- 2 tsp whipped coconut cream
- Whole star anise and ground cinnamon to decorate

Method

1. Place the almond milk, cacao, vanilla sugar, dark brown sugar, salt, chilli and mushroom powder into a blender and blend well.
2. Transfer the mixture into a saucepan and add the chocolate, star anise and cardamom. Simmer on low for 10-15 minutes until all the chocolate has melted and the mixture has slightly thickened.
3. Pour into two mugs and top with 1 tsp of whipped coconut cream in each mug. Garnish with a sprinkle of ground cinnamon and a whole star anise. Enjoy!

Image credits

On the 'Meet our mushrooms' page we have used the following images of mushrooms in their natural habitat:

1. Reishi: Licensed under CC0 1.0 Universal (CC0 1.0) https://creativecommons.org/publicdomain/zero/1.0/ Source: https://pxhere.com/en/photo/729023
2. Lion's mane: Photo by Lebrac, licensed under CC BY-SA 3.0 https://creativecommons.org/licenses/by-sa/3.0/ Source: https://commons.wikimedia.org/wiki/File:Igelstachelbart_Nov_06.jpg
3. Cordyceps sinensis: Photo by L. Shyamal, licensed under CC BY-SA 3.0 https://creativecommons.org/licenses/by-sa/3.0/ Source: https://commons.wikimedia.org/wiki/File:CordycepsSinensis.jpg
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