

akashā

mycology

This booklet has been primarily compiled by using 'The Bible of Medicinal Mushrooms', by J.P. Rae as a reference.



SHIITAKE

Mushroom Tincture

[LENTINULA EDODES]

GIVE YOUR HEART WHAT IT DESERVES

The heart is the life force of the body. With each pump it is sending blood and other essential compounds to other parts of the body. If we are going to start taking care of our bodies, we also have to take care of our hearts.

The shiitake mushroom has some fantastic heart health benefits that will give this hardworking organ the care it deserves and what it needs to keep us healthy and happy.

Benefits of Shiitake:

- Boosts Heart Health
- Boosts Immune Health
- Promising Antiviral and Antibacterial Effects
- May Strengthen Bones

Boosts Heart Health

The biggest benefit associated with shiitake mushrooms is boosting overall heart health. Unlike other mushrooms that may only lower cholesterol, the shiitake mushroom **supports heart health from multiple fronts.**

The shiitake mushroom contains three compounds that has been shown to **reduce bad cholesterol:**

sterols: help to block cholesterol absorption that occurs in the stomach
eritadenine: inhibits the production of enzymes that produce cholesterol
beta-glucans: a fiber that lowers cholesterol

Research also suggests that regular intake of shiitake mushroom may regulate **blood pressure** by preventing it from increasing (Jennings, 2019). In addition, shiitake mushrooms have also shown **decreased fat levels in the liver** and less plaque build-up on artery walls associated with a high-fat diet.

Regulating blood pressure, reducing plaque, and lowering cholesterol are all vital for improving circulation, which in turn may greatly boost overall heart health.

Boosts Immune Health

Shiitake mushrooms have been shown to **increase Immunoglobulin A (IgA)**, which is an **antibody protein** that is part of your immune system. This key immune cell is linked to your first line of defense when it comes to immunity.

Furthermore, shiitake mushrooms contain **lentanin**, a polysaccharide that has illustrated great promise as an immune system-boosting agent.

Promising Antiviral and Antibacterial Effects

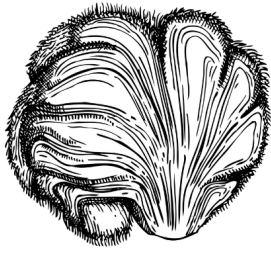
Illnesses and disease seem to evolve as we find ways to treat them. **Antibiotic resistance** is growing and many scientists are turning their attention to explore the antimicrobial potential of the shiitake mushroom.

The shiitake mushroom has various **antifungal, antibacterial, and antiviral compounds**. Although studies conducted in this regard are in its preliminary phases, the potential for isolating the required compounds for maximum effectiveness seems promising.

May Strengthen Bones

Generally all medicinal mushrooms contain **vitamin D2**, a property that makes it unique to any other plant. Coincidentally, mushrooms are potentially the only **non-animal**, unfortified food source of vitamin D. Furthermore, shiitake mushrooms contain essential amino acids that are normally found in animal food sources.

Vitamin D2 stimulates the synthesis of **calcium transportation** in the small intestine, thereby enhancing the absorption of dietary calcium in the human body, making shiitake mushrooms a powerful medicine in the prevention of **osteoporosis**.



LION'S MANE

Mushroom Tincture

[HERICIUM ERINACEUS]

SUPERFOOD FOR THE BRAIN

Lion's mane mushrooms have multiple benefits for **mental and physical health**, which can help to improve your cognitive abilities and general mental clarity.

The lion's mane mushroom is renowned for its effects on our brain and neural functioning. Combined with its positive effects on our physical health, lion's mane truly curbs cognitive and mental decline from **multiple angles**.

Mental Benefits:

- May Relieve Symptoms of Anxiety and Depression
- May Protect Against Dementia and Alzheimer's
- May Speed up the Recovery Time of Nervous System Injuries

Physical Benefits:

- High Concentration of Nutrients and Vitamins
- Supports your Immune System and Reduces the Risk of Various Diseases, Viruses, or Illnesses

May Relieve Symptoms of Anxiety and Depression

Cognitive decline can be caused or worsened by symptoms of anxiety and depression. Due to its **anti-inflammatory properties**, lion's mane can help to relieve these symptoms while also improving cognitive function.

The **hippocampus** is the brain area where **emotional responses and memories** are processed. It becomes impaired when experiencing anxiety and depressive symptoms.

The **anti-inflammatory** and **immune-boosting** properties of lion's mane have been shown to help **regenerate brain cells** and improve the functioning of the hippocampus, which can help relieve the symptoms of depression anxiety and **enhance memory formation** (Julson,2018).

The decrease in these symptoms in turn helps to improve one's ability to **focus, concentrate and process memories**.

May Protect Against Dementia and Alzheimer's

Dementia arises as we grow older, when the brain cannot make as many connections as before. When this ability is severely diminished, the **existing connections** start to wither and are not renewed with **new connections**. This causes memory loss and confusion associated with **dementia or Alzheimer's**.

Lion's mane mushrooms have **two compounds** namely, **erinacines** and **hericenones**, that stimulates cell growth in the brain and the creation of more neural connections. When the brain makes a **new connection**, it reinforces what it already knows and introduces further information.

A major advantage of this **powerful nootropic**, lies in the fact that these compounds can easily pass through blood vessels and the membrane of the brain, **without the side effects** of the widely used stimulants prescribed on a daily basis.

Amyloid-beta plaque buildup is a sign of someone entering into the **early stages of Alzheimer's**. This plaque then causes **neuronal damage**, which prevents the brain from making connections and causes **memory loss** and **neurological degeneration**. Studies indicate that lion's mane mushrooms could protect against the damage caused by amyloid-beta plaque.

One could say that lion's mane mushrooms act as a cognitive superfood of sorts. Lion's mane produces the bioprotein **NFG** (nerve growth factor) and **myelin**, the insulation that forms around nerve fibers. Both of these components are essential for our brain's health, and when these are imbalanced, this is when multiple sclerosis, Alzheimer's, and dementia can start to develop.

A regulated consumption/dosing of lion's mane helps balance NFG and myelin, protecting the brain and promoting cognitive health.

***A note on Neurodegeneration**

It is important to recognise that the effectiveness of lion's mane mushroom tinctures is in no sense infinite.

Research suggests that individuals with mild cognitive impairment may see more positive effects/results than those in positions of severe cognitive impairment. In addition, the positive effects of consuming a lion's mane tincture may also be dependent on constant exposure rather than short-term use.

Healthy habits such as eating healthy foods, getting enough sleep, and exercising are some of the best habits that you can practice. Lion's mane is one of the best mushrooms you can add to your diet that will help provide nutrients that can boost your cognitive health and keep your nervous system healthy.

Can Speed the Recovery Time of Nervous System Injuries

The **nervous system** contains the brain, nerves, and spinal cord. Our nervous system is responsible for **sending and receiving** signals for various bodily functions. When there is an **injury** to our nerves, brain, or spine, it causes the nervous system to become impaired.

Brain injuries can be extremely devastating to cognitive functioning and injuries to the nervous system can often take **a long time to heal**.

Research suggests that lion's mane mushrooms can help speed up the recovery of nervous system injuries as it promotes the **growth and repair** of nerve cells.

Along with **decreasing inflammation**, by promoting the repair and growth of nerve and brain cells, the lion's mane mushroom may help to reduce brain damage caused by strokes.

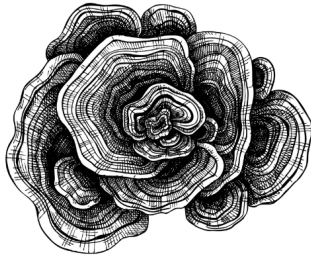
Physical Health Benefits of Lion's Mane

Like all other edible mushrooms, lion's mane is packed with **nutrients** and **vitamins** that support the body in a multitude of ways.

The **anti-inflammatory** and **immune-boosting** properties of lion's mane mushrooms also contribute to strengthening your immune system and in turn reduce the risk of various diseases, viruses, or illnesses.

The physical health benefits of consuming lion's mane mushrooms include:

- reduces the risk of heart disease
- stops the formation of digestive tract ulcers
- encourages the growth of good gut bacteria
- lessens regular symptoms of diabetes
- helps fight cancer



TURKEY TAIL

Mushroom Tincture

[TRAMETES VERSICOLOR]

IMMUNE WORRIOR

The nutrients that we consume daily serve to be our defense against illness. When we don't have enough nutrients, the body's warriors, the white blood cells, the natural killer cells, and many other proteins and compounds cannot fight off diseases and viruses, and our body can become overwhelmed.

Many medicinal mushrooms have some of these **immune-boosting benefits**, but what makes the turkey tail mushroom one of the most researched, is its particular application in **fighting cancer**.

Immune Boosting Benefits:

- Improve Immune Function in Cancer Patients
- Enhance the Speed of Cancer Treatments
- High Concentration Polysaccharopeptides
- Packed with Antioxidants
- May Improve Gut Health

Improve Immune Function in Cancer Patients

Laboratory studies of the turkey tail mushrooms have shown **antitumor properties** that help stop the growth and spread of tumors. The reduction in tumor size has been connected to the turkey tail mushroom's ability to **boost immune function**.

It does this by specifically stimulating the activity of **immune cells**, whilst promoting a beneficial shift in the **systemic immune state** of the body, thereby supporting both the **adaptive and innate immune** responses.

Turkey tail mushrooms have been successfully used alongside radiation and chemotherapy treatments for humans.

Enhance the Speed of Cancer Treatments

After years of medical trials and research, turkey tail mushrooms are among the most widely used mushrooms for treating cancer alongside traditional allopathic treatments such as chemotherapy.

A study of breast cancer patients showed an increase in **cancer-fighting** cells such as **lymphocytes** and **natural killer cells** in patients given turkey tail daily. (Kubala, 2018).

High Concentration Polysaccharopeptides

Polysaccharopeptides are potent immune-boosting compounds found in high concentrations in the turkey tail mushroom.

The polysaccharopeptides; Polysaccharide- (PSP) and Krestin- (PSK) peptides specifically, can **activate and inhibit immune cells**. This can trigger and stimulate the immune system to create more natural killer cells.

Research studies show that PSP **activates monocyte activity** (Kubala, 2018). Monocytes are white blood cells that boost immunity and fight infections. PSK activates white blood cells known as **macrophages**, which act in protecting the body from harmful bacteria and substances. PSK also **activates dendritic cells**. These cells help regulate the responses of our immune system and promote immunity against toxins.

Turkey tail extracts have shown to be used effectively during surgery, radiation, and chemotherapy, due to the **powerful immune-boosting** properties that PSP and PSK offer. Those undergoing surgery or who have

cancer, are often more prone to infections, so the PSK and PSP in turkey tail may help bring the immune system back up.

Packed with Antioxidants

Oxidative stress is one of the leading factors of chronic **inflammation and cancer**. Oxidative stress causes damage to the cells, which can lead to the development of health conditions such as cancer and heart disease.

Free radicals are oxygen-containing molecules with an uneven number of electrons. The uneven number allows them to easily react with other molecules. Free radicals can cause **large chain chemical reactions** in your body because they react so easily with other molecules. These reactions are called **oxidation**.

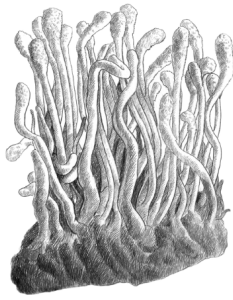
Antioxidants are molecules that can donate an electron to a free radical without making themselves unstable. This causes the free radical to stabilise and become less reactive. This in turn may **relieve oxidative stress** and **stop the cellular damage and inflammation** they cause.

Turkey tail contains **phenols and flavonoids**, both antioxidants, which reduce inflammation and increase the production and release of protective compounds. These protective compounds include **quercetin**, which releases **immune-protective proteins** like interferon- γ , while inhibiting the release of the pro-inflammatory enzymes cyclooxygenase (COX) and lipoxygenase (LOX) (Kubala, 2018).

May Improve Gut Health

A **healthy gut promotes a healthy immune system**. The bacteria in our gut interact with the cells of our immune system, and when our **gut bacteria** is not healthy, it negatively impacts our immune systems. **Prebiotics** help to promote a healthy balance of beneficial bacteria in the gut. Turkey tail mushrooms contain significant levels of prebiotics.

Turkey tail mushrooms increase healthy bacteria such as **bifidobacterium** and **lactobacillus**, which help to improve intestinal symptoms and digestion, reduce cholesterol, enhance immune system function, and lower the risk of developing cancers.



CORDYCEPS

Mushroom Tincture

[CORDYCEPS MILITARIS]

NATURAL ENERGY BOOSTER

Cordyceps mushrooms are a natural energy booster that offers an array of many other medicinal benefits.

There are 350 known species of cordyceps, but only two have really been researched and used actively.

The first species of cordyceps is **c. sinensis**, and the second is **c.militaris**. **C. sinensis** is a species that grows in caterpillars in the Tibetan mountains. These fungi are now incredibly rare and come with a hefty price because of this rarity and thus are not often used in the supplements that are freely available.

C.militaris has the same properties as the former but is a species that can be commercially cultivated and is grown on rice, making it the primary cordyceps used and sold.

Benefits of Cordyceps Mushrooms:

- Boosts Athletic Performance
- Anti-Aging Properties
- May Help Manage Type-2 Diabetes
- Potential Anti-Tumor Effects

Boosts Athletic Performance

Cordyceps help improve athletic performance by increasing the production of **ATP (adenosine triphosphate)**, a compound that carries energy throughout the body. Increasing this production allows cordyceps to boost **V02 max levels** and develop a stronger **resistance to fatigue**.

Cordyceps may help manage **fatigue** by supporting the **adrenal stress response**. With regular supplementation, cordyceps may relieve not only the symptoms of fatigue and aid in recuperation, but increase an individual's actual **resistance to fatigue**.

Cordyceps can boost athletic performance by increasing our **V02 max levels**. V02 max is the measurement of how much oxygen is consumed during high-intensity workouts. Specialists will use this measurement to determine someone's fitness level.

A study conducted on a group of healthy adults showed an increase in V02 max by 7% during exercise in study subjects using cordyceps as apposed to those given placebos (Van De Walle, 2018).

Anti-Aging Properties

Anti-aging is often only thought of with regards to physical appearance, but **multiple changes** occur, including becoming more fatigued, having a lower sex drive, memory issues, and decreasing strength.

Traditionally cordyceps have been used to combat many of the symptoms associated with aging. Recent studies indicate that the anti-aging properties of cordyceps may be linked to its high antioxidant count. **Antioxidants** found in cordyceps help **neutralise free radicals**, which we know is a leading cause of early aging and increased risk of diseases.

May Help Manage Type 2 Diabetes

Insulin is a hormone created by the body and supplemented by people with diabetes, to help regulate their blood sugar levels. Cordyceps contains a type of sugar that **mimics the effects of insulin**, thus helping to manage blood sugar levels and symptoms associated with Type 2 diabetes.

Studies have also shown that cordyceps might have the ability to **decrease blood sugar** levels and might **protect against kidney disease**, a complication common in people with diabetes. A further study on people diagnosed with chronic kidney disease showed improved kidney function after taking cordyceps supplements (Van De Walle, 2018).

Potential Anti-Tumor Effects

Study results indicate that cordyceps **inhibited the growth** of various types of cancer in human cells, including colon-, liver-, lung-, and skin cancer. Further results also showed cordyceps had anti-tumor effects on lung cancer, lymphoma, and melanoma (Van De Walle, 2018).

Cordyceps have also been shown to help **relieve the side effects** of some cancer treatments, including radiation and chemotherapy.