

MEDICINAL MUSHROOMS

THERAPEUTIC BENEFITS

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SPEAKER INTRODUCTION

EXPERIENCE

Registered Holistic Nutritionist R.H.N.

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Degree in Biological Sciences BSc

Certified in Immunology & Herbology

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Disclosure

BRAND AFFILIATIONS (QUALITY)

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This presentation is for educational purposes only and are not intended for licensed health care practitioners. These therapies are not substitutions for standard medical care. Individuals and practitioners are solely responsible for the care and treatment provided to their own patients/clients.





WHAT WE WILL COVER

COMING UP

- WHAT ARE MEDICINAL MUSHROOMS
- THE MOST COMMON MMs & THEIR HEALTH BENEFITS
- THE SUPPLEMENTAL FORMS
- HIGH QUALITY BRANDS
- IMMUNOLOGICAL USES
- HOW TO INCORPORATE THEM INTO YOUR PRACTICE
 - Clinical Case Studies
- SCIENTIFIC RESEARCH
- HOMEOPATHY (If time allows)





WHAT ARE

**MEDICINAL
MUSHROOMS**



Fungi

MUSHROOMS ARE NOT PLANTS

Mushrooms are not plants: they are part of the separate kingdom of fungi.

FUNGI & HUMAN DNA (33% IN COMMON)

Humans and fungi have 33% of their DNA in common, whereas fungi and plants only have 10% in common. Fungi and humans are therefore susceptible to the same pathogenic agents, i.e., viruses, bacteria and parasites, but their defence systems are different.

CHINA HAS USED MEDICINAL MUSHROOMS THERAPEUTICALLY FOR THOUSANDS OF YEARS

The use of these mushrooms has become more widespread, and they have been the subject of research by many scientists, particularly in China, the USA and Japan, who hope to discover new properties and new treatments for many pathologies.

MYCELIUM RUNNING

How Mushrooms Can Help Save the World



PAUL STAMETS author of *Growing Gourmet and Medicinal Mushrooms*

FUN FACTS!



Fungi can be used to clean up many things in the soil including mercury, polychlorobiphenols (PCBs), fertilizers, munitions, dyes, estrogen-based pharmaceuticals, neurotoxins — including DDT — dioxins, and stored nerve gas. Fungi can also break down oil spills, although several patents on some species are stopping the use of them for clean-ups

Mycelium are fungal threads that form a network, usually underground. Mushrooms are just their fruiting bodies. Mycelium are so tiny that one cubic inch of soil can contain enough to stretch for 8 miles.

Some mushrooms in old growth forests release antibiotics when something walks by. The mycelium in the ground triggers the mushroom to release the chemicals.

Underground mycelium networks in old growth forests can communicate with each other to make the forest aware that something is moving.



Common Compounds Found in Mushrooms

Beta-glucans



Beta glucans are sugar compounds found in bacteria, yeast, fungi, algae and plants such as oats and barley. They are a source of soluble fiber, and research suggests they may reduce high cholesterol and improve skin conditions such as eczema.

Polysaccharides

A polysaccharide is a large molecule made of many smaller monosaccharides. Essentially, it is a complex carb that can help regulate blood sugar, improve colon function and much more!

Antioxidants

Antioxidants are substances that may protect your cells against free radicals, which may play a role in heart disease, cancer and other diseases. Free radicals are molecules produced when your body breaks down food or when you're exposed to tobacco smoke or radiation, or other harmful chemicals/toxins.

Sterols

Plant sterols are a group of plant substances that resemble cholesterol. They might help reduce cholesterol levels by limiting the amount of cholesterol that is able to enter the body. Some plant sterols might also reduce how much cholesterol is made in the body.

Glycoproteins

Glycoproteins function in the structure, reproduction, immune system, hormones, and protection of cells and organisms. Glycoproteins are found on the surface of the lipid bilayer of cell membranes.



Common Compounds Found in Mushrooms

Triterpenes



Triterpenes are also promising agents in the prevention of diabetic complications. They have strong antioxidant activity and inhibit the formation of advanced glycation end products, implicated in the pathogenesis of diabetic nephropathy, embryopathy, neuropathy or impaired wound healing.

Galactoglucomannan

Galactoglucomannan is a water-soluble hemicellulose, consisting of galactose, glucose and mannose. It stores energy in the body which means it is great for fatigue!



FUN FACT

- **More than 80% of the earth under your feet is mycelium!**



Cordyceps (aka Caterpillar Fungus)



Latin name: *Cordyceps sinensis*

Its active principles are cordycepin, cordycepic acid, polysaccharides and sterols.

It is an excellent immune system stimulant. It also stimulates cardiac and respiratory function. It is used to treat asthma.

It can be given to athletes to improve post-exercise muscle recovery.

It improves blood circulation, particularly in the brain. It is therefore very useful in the case of decreased cognitive function. It is an antioxidant.



Chaga

Latin name: *Inonotus obliquus*



It's active principles are inositol, melanin, lactones, steroids, xylogalactoglucan (proteins that are bound with polysaccharides).

Chaga's high melanin content has led some to believe that it can bolster the melanin naturally found in the skin, thereby protecting it from sun damage, skin cancer, wrinkles, or aging. Melanin is also a potent antioxidant and has one of the highest oxygen radical absorbance capacity (ORAC) scores of any food.

It regulates glycemia and can be an adjuvant in the treatment of diabetes. It has a high antiviral action.

It stimulates the immune system and is particularly effective to support immune defenses against the common flu.

It has anti-inflammatory and analgesic (pain relief) properties. It is a great adaptogen!

**MY FAVOURITE
MUSHROOM!**



Enoki



Latin name: *Flammulina velutipes*

Its active principles are glycoproteins and beta-glucans.

It regulates blood pressure and blood cholesterol. It stimulates the immune system.

It also has a bactericidal action.

Tastes DELICIOUS! It has a very light flavour and incredible texture. Usually purchase this fresh from your grocery store.

Great in stir fry's!



Maitake

Latin name: **Grifola fondosa**



Its active principles are beta-glucans (complex sugar), hetero-beta-glucans and xyloglucan.

It regulates blood pressure and glycemia. Maitake is a mushroom that traditionally has been used in Japan and China as part of the diet and to treat diabetes and hypertension.

May be used to mitigate the side effects of chemotherapy and radiation therapy and may enhance the desired effect of this therapy. In laboratory and human studies, maitake extract was able to stimulate various cells and factors in the immune system. Studies in animals show that it slows the growth of certain tumors and lowers blood sugar levels.

**Very buttery and soft
texture!**



Latin name: *Pleurotus ostreatus*

It's active principles are a beta-glucan (pleuran) and pleurotus ubiquitin-like protein.

It lowers LDL cholesterol and triglycerides.

It prevents the intestinal absorption of certain heavy metals and has antioxidant properties.

Oyster mushroom is a rich source of protein, vitamins, minerals, fibre and other antioxidants like selenium which protect s the body's cells from damage that might lead to chronic diseases and help to strengthen the immune system.

Oyster

Very buttery and soft texture!



Reishi

Latin name: *Ganoderma lucidum*



This mushroom has many active principles: beta-glucans, hetero-beta-glucans, triterpenes, Ling Zhi-8 protein; it is also rich in polysaccharides (> 100) and triterpenoids.

It is an excellent immune system stimulant and is an antibacterial agent. It stimulates natural killer cell activation, inhibition of RAS protein prenylation.

Inhibition of Th2 Immune cell production by the promotion of NK cell activation will yield NK cell production of interferon gamma (IFN γ). The IFN γ will inhibit the production of IL-4 by Th2 cells, thus interfering with the autocrine feedback loop that Th2 cells use to influence other naive T cells to also become Th2 cells. This is an indirect but nonetheless efficient form of Th2 inhibition. Whether it will suffice on its own to inhibit Th2 response in a vigorously Th2 dominant patient is a matter of discovery in the unfolding of the case, rather than a matter of declaration.

It decreases cholesterol, fatigue and the allergic response and inflammatory response. It can help with bone regeneration, regulate glycemia (PTP1b downregulation to allow insulin receptors to keep working each time they're stimulated), and stimulate hepatic function.

It regulates the functioning of the nervous system as it improves adrenal gland function. It is an antioxidant. Is called the “mushroom of immortality.”



Latin name: *Lentinula edodes*

It's active principles are lentinan, ertadenine, ergosterol, glycoproteins, LEM heteroglycan protein, and galactoglucomannan. It is well known and has been the subject of much study for many years.

It is an excellent immune system stimulant (it increases NK lymphocyte activity by a factor of 5 within two months).

It may be effective against *Candida albicans*, *Staphylococcus aureus* and the herpes simplex virus.

It has an anti-inflammatory action. It lowers cholesterol. Thanks to its content in choline and adenine, it protects the liver and regulates transaminase levels.

It protects cells and promotes their normal development.

BEST TASTING MUSHROOMS FOR FRYING !

Shiitake



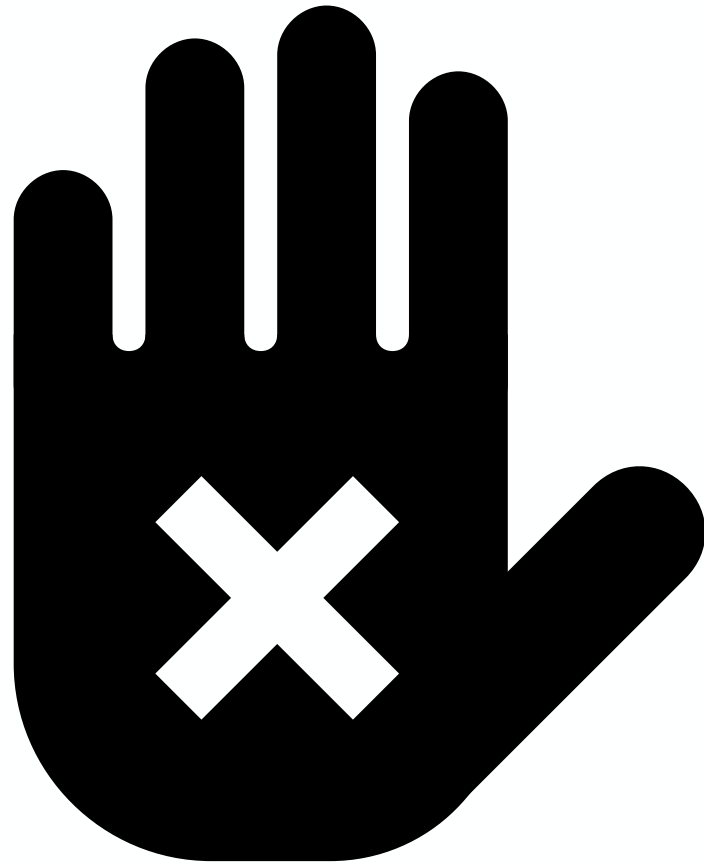
Latin name: *Hericium erinaceus*

Research has found that lion's mane may protect against dementia, reduce mild symptoms of anxiety and depression and help repair nerve damage.

It also has strong anti-inflammatory, antioxidant and immune-boosting abilities and has been shown to lower the risk of heart disease, cancer, ulcers and diabetes in animals.

Lion's Mane

It's so cute!



SIDE EFFECTS

Medicinal mushrooms can elevate white blood cells which may indicate an allergic reaction. Some also shouldn't be taken if someone is on blood thinner's. ALWAYS check with your doctor before supplementing or recommending.



SUPPLEMENTAL FORMS

Different ways to incorporate these mushrooms



Capsules



Fresh



Tea



Powder

HOW TO ENJOY MEDICINAL MUSHROOMS



Chaga Tea

Simmer Chaga chunks in water for 10 minutes and enjoy either black, with oat milk and/or honey

Mushroom Hot Cocoa

Try out Four Sigmatic, Purica or Botanicas mushroom infused hot cocoa powder! I like making mine with collagen, mushroom cocoa mix, coconut milk and liquid stevia!

Mushroom Smoothies

Try adding a tsp of your favourite mushroom or mushroom blend (I love Om Mushrooms) to your daily smoothie for immune support! You won't taste it I promise!

Supplement

If you're not a fan of the taste (although There isn't much of one) of mushrooms in general, you can always take them in supplement form daily with some water!

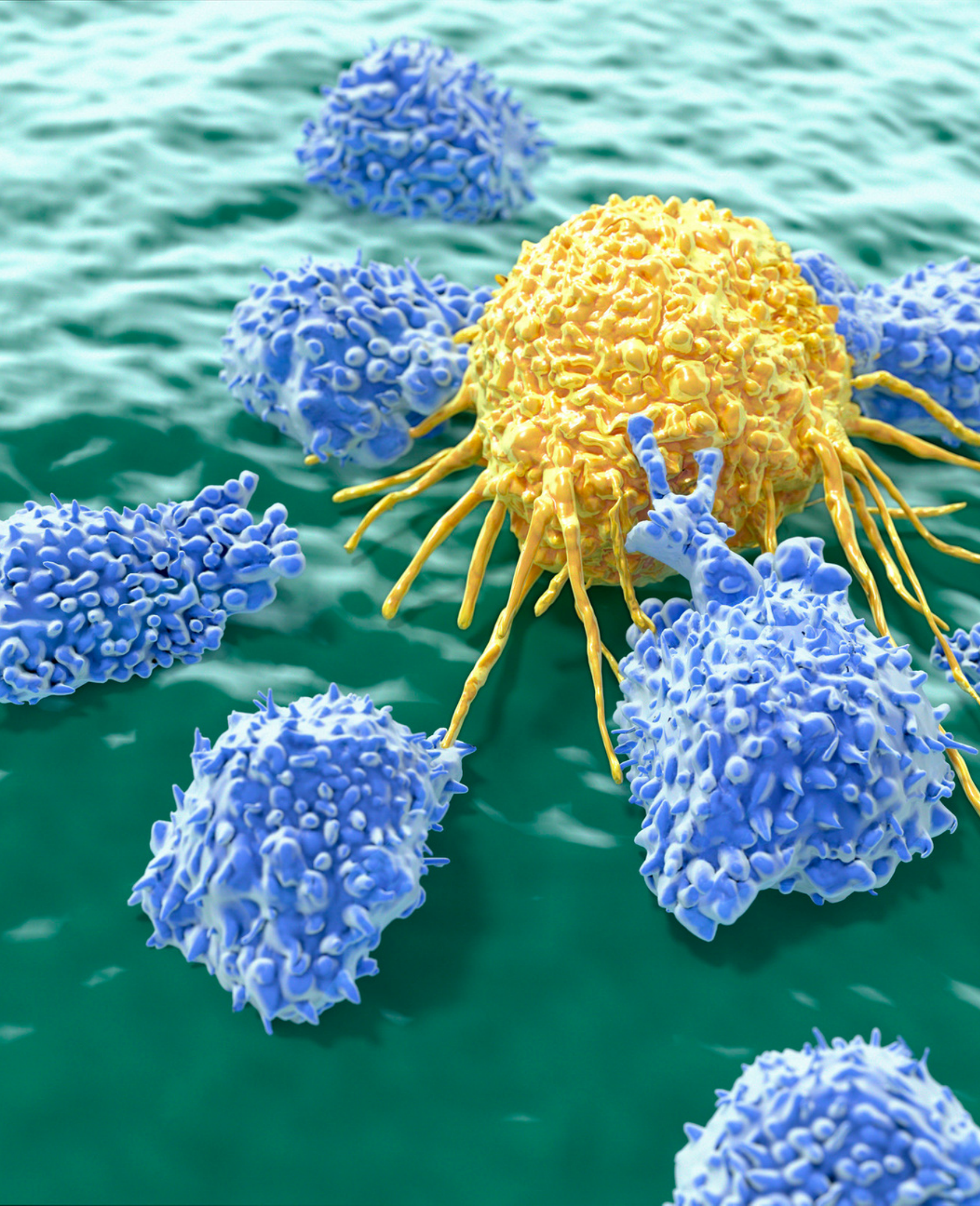
HIGH QUALITY BRANDS

Not all mushroom products are created equal! Do your research with the brand before purchasing to make sure you're getting organic, high quality supplements.

MY TOP RECOMMENDATIONS

- Purica
- Four Sigmatic
- Pure Encapsulations
- Botanica
- Suro Organics
- Om Mushrooms





Immunological Benefits

HOW MEDICINAL MUSHROOMS IMPACT OUR IMMUNE SYSTEM

We keep talking about how mushrooms boost our immune system. But how exactly do they accomplish that? LETS FIND OUT!

Immune Modulation From Five Major Mushrooms: Application to Integrative Oncology

[Alena G. Guggenheim](#), ND, [Kirsten M. Wright](#), BS, and [Heather L. Zwickey](#), PhD

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See commentary "[Medicinal Mushrooms: Ancient Remedies Meet Modern Science](#)" in volume 13 on page 46.

This article has been [cited by](#) other articles in PMC.

This study outlines the effects of medicinal mushrooms against Cancer cells in regards to immune modulation (Th1, Th2, Th9, Th17, etc).

It is important to understand how these mushrooms can impact our immune system, in a good way!

Abstract

Go to: ☒

This review discusses the immunological roles of 5 major mushrooms in oncology: *Agaricus blazei*, *Cordyceps sinensis*, *Grifola frondosa*, *Ganoderma lucidum*, and *Trametes versicolor*. These mushrooms were selected based on the body of research performed on mushroom immunology in an oncology model. First, this article focuses on how mushrooms modify cytokines within specific cancer models and on how those cytokines affect the disease process. Second, this article examines the direct effect of mushrooms on cancer. Finally, this article presents an analysis of how mushrooms interact with chemotherapeutic agents, including their effects on its efficacy and on the myelosuppression that results from it. For these 5 mushrooms, an abundance of in vitro evidence exists that elucidates the anticancer immunological mechanisms. Preliminary research in humans is also available and is promising for treatment.

Table 2
Basic Cytokine Patterns



Pattern	Cytokines	Pattern Effect
T _H 1	IFN- γ , IL-12, TNF- α	Stimulates immune response to cancer
T _H 2	IL-4, IL-5, IL-13	Decreases T _H 1
T _H 3/Treg	TGF- β	Modulates T _H 1
Proinflammatory	IL-1, IL-6, IL-8, TNF- α	Causes inflammation

Understanding Immune Imbalance

This table shows some of the immune cells that either help our body fight against the disease process or push it forward. It shows the cytokines produced in relation to these immune cells.

Benefits For the Immune System

- Upregulates Natural Killer Cells (pathogen killing)
- Upregulates Th1 immune response (reduce tissue destruction)
- Downregulates Th2 response (asthma, histamine, seasonal allergies)
- Reduces stress chemistry from chronic stress which helps reduce Th2 dominance
- Balances blood sugar which tips out of balance with chronic stress and inflammation

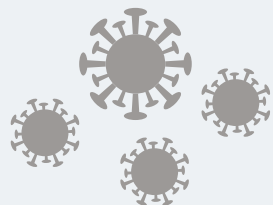
Practical Uses



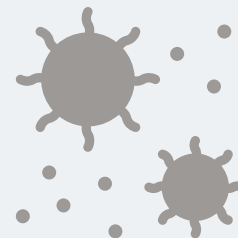
Chronic Stress



Antioxidant Support



Immune modulation



Antipathogenic

About The Case

Name: Meena

Gender & Age: Female, 49 years

Main Concern:

- Poor cognition (forgets everything within minutes so she has to write everything down)
- Anxiety (stresses about everything)
- Fatigue (always needs to nap)

CASE STUDY 1 - MEENA



Protocol

Mushrooms:

- Cordyceps (improve cognition)
- Chaga (adaptogen for stress)

Nutritionals

- Genestra HMF Neuro Cognition (memory recall)
- Genestra Super EFA Capsules (nervous system)

Herbs

- Gingko biloba (circulation to the brain)
- Ashwaghandha (adrenals and thyroid)

Homeopathics

- Chelidonium plex (lymphatic flow)
- Juniperus communis Gemmo (liver/kidney drainage)
- Gammadyn Se (thyroid support)
- Ferrum Phos 6X tissue salt (fatigue)
- Kali phos (strengthen nervous system)
- Genestra Ener-gen (retonify the endocrine system)

Lifestyle

Diet

- Increase healthy fats (wild caught fish, nuts, seeds, avocado, etc) for brain support
- Consume more nutrient rich vegetables (dark leafy greens, beets, etc) for B-vitamins
- Drink 10 glasses of filtered water daily

Sleep

- Sleep with your circadian rhythm (10:30PM to 6:30AM)
- Make sure room is dark and cool

Extras:

- Practice deep breathing throughout the day for anxiety
- Exercise in the morning to boost energy levels for the whole day
- Strengthen the brain with good reading, sudoku, puzzles, etc (this is for FUN!)

About The Case

Name: Noah
Gender & Age: Male, 35 years
Main Concern:

- Pre-mature aging
 - Greying
 - Moles
 - Wrinkles forming rapidly
 - Age spots
 - Feels weak/tired

CASE STUDY 2 - NOAH



Protocol

- Mushrooms:**
- Reishi (boost Th1 immunity - moles), Chaga (blood sugar balance - healthy cells), Lions Mane (antioxidant
- Nutritionals**
- Liposomal glutathione (antioxidant)
 - Douglas Labs flavonall (antioxidant)
 - Liposomal vitamin C (antioxidant)
 - Colloidal multi minerals
 - Chlorella (binder)
 - D-mulsion
- Herbs**
- Adaptogen blend (ashwaghandha, astragalus, holy basil)
 - Olive leaf (pathogens - mole development)
- Homeopathics**
- Ulmus campestris Gemmo (kidney drainage)
 - Juniperus communis Gemmo (liver drianage)
 - Gammadyn Se (antioxidant)
 - Gammadyn zn-cu (hormones)
 - Calcareo phos 6X tissue salt (healthy cells)

Lifestyle

- Diet**
- Eat alkaline and nutrient dense diet of organic leafy greens, whole grains, lean proteins, healthy fats and lots of soluble fiber
 - Drink 10 glasses of filtered water daily
- Sleep**
- Sleep with your circadian rhythm (10:30PM to 6:30AM)
 - Make sure room is dark and cool
- Extras:**
- Practice deep breathing throughout the day for cleansing via the lungs
 - Use sauna weekly to detoxify
 - Exercise in the morning to boost energy levels for the whole day

Keep In Touch

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Q&A

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