

MUSHROOMS *AND* MICROBIAL MAGIC



Mushrooms have long been celebrated for their unique umami flavours. It turns out they also have amazing benefits for your gut health.

➤ **BY CHARIS TORRANCE**

Mushrooms, those unsung heroes of the culinary world with their unique textures and earthy flavours, have been part of the human diet for centuries. Mushrooms are emerging as nutritional powerhouses with numerous health benefits, particularly for gut health – an age-old association that is gaining renewed attention.

➤ *Antioxidants*

Mushrooms are a valuable source of antioxidants, such as ergothioneine and glutathione, renowned for their capacity to combat destructive free radicals and safeguard cells against oxidative harm. This antioxidant content plays a crucial role in maintaining the delicate equilibrium of the gastrointestinal system.

➤ *Rich in vitamins and minerals*

Mushrooms are also a treasure trove of vitamins and minerals that play a vital role in supporting overall health, including that of the gastrointestinal system. Vitamin D, which mushrooms produce naturally when they are exposed to sunlight, has been

linked to immune regulation and gut health.

Furthermore, mushrooms contain selenium, a trace element with antioxidant properties. Selenium is crucial for protecting cells against oxidative stress, and its presence in mushrooms adds another layer of support for gut health by preserving the integrity of the gut lining.

➤ *Mushroom polysaccharides*

One of the most intriguing aspects of mushrooms is their potential to influence gut health through the actions of polysaccharides. These complex carbohydrates found in mushrooms, particularly beta-glucans, have been studied extensively for their effects on glycaemic control in diabetes, intestinal inflammation, and tumours. The key to these benefits lies in the modulation of the gut microbiota.



Anti-diabetes properties

Mushroom polysaccharides, notably beta-glucans, have demonstrated a remarkable capacity to regulate blood glucose levels, which makes them a promising ally in the fight against diabetes.

Research suggests that these polysaccharides enhance insulin sensitivity and reduce insulin resistance, contributing to better glycaemic control. The intricate dance between mushroom polysaccharides and the gut microbiota plays a crucial role in optimising glucose metabolism, providing a natural approach to diabetes management.



Anti-intestinal inflammation

Chronic intestinal inflammation

is a common denominator in various gastrointestinal disorders, and mushrooms offer a natural remedy. The anti-inflammatory effects of mushroom polysaccharides extend to the gut, where they modulate the immune response and promote a balanced inflammatory state. This interaction with the gut microbiota holds promise for



those dealing with inflammatory bowel disease and other inflammatory conditions, offering a potential avenue for relief and healing.

3 Antitumoural effects

The fight against cancer has found an unlikely ally in mushroom polysaccharides. Studies have shown that these compounds stimulate the immune system, enhance the activity of natural killer cells, and inhibit the growth of cancer cells.

The regulation of the gut microbiota by mushroom polysaccharides is a key factor in these antitumoural effects, highlighting the intricate link between gut health and the body's ability to defend itself against cancerous cells.

> The gut microbiota connection

At the heart of mushrooms' health benefits lies their profound impact on the gut microbiota. The gastrointestinal tract is home to trillions of microbes. Mushroom polysaccharides actively interact with the gut microbiota, influencing the composition and function of the microbiome. These interactions promote the growth of beneficial microbes and inhibit the proliferation of harmful microbes, contributing to a balanced and diverse gut microbiome, which plays a pivotal role in maintaining overall health.

1 Promoting microbial balance

Mushroom polysaccharides act as prebiotics, providing a favourable environment for the growth of beneficial bacteria such as members of the *Bifidobacterium* and *Lactobacillus* genera. This promotes microbial diversity and balance, essential for optimal gut function. A healthy gut microbiome is linked to improved digestion and nutrient absorption, and a strengthened immune system.

2 Inhibiting harmful microbes

The antimicrobial properties of mushroom polysaccharides help to keep pathogenic bacteria in check. By inhibiting the growth of harmful microbes, mushrooms contribute to the prevention of infections and maintaining a harmonious microbial ecosystem within the gut.

3 Enhancing immune function

The gut microbiota are intricately connected to the immune system, and mushroom polysaccharides play a role in enhancing immune function. By promoting a robust gut microbiome, mushrooms support the body's defence mechanisms, providing resilience against various health issues. ❖

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> THE BEST MUSHROOMS TO INCLUDE IN YOUR DIET

When it comes to promoting gut health, not all mushrooms are equal. Some stand out for their unique nutritional profiles and beneficial compounds. Here are the best types of mushrooms to incorporate in your diet for optimal gut health.



Shiitake

Benefits: Rich in dietary fibre, shiitake mushrooms support bowel regularity and provide prebiotics for beneficial gut bacteria.

Key compounds: Beta-glucans contribute to immune modulation, fostering a resilient gut environment.





Enoki

Benefits: Enoki mushrooms are a good source of dietary fibre, aiding digestion and promoting gut regularity.

Key compounds: Polysaccharides contribute to potential prebiotic effects.



Turkey tail

Benefits: Turkey tail is rich in polysaccharopeptides, which have immune-modulating effects.

Key compounds: Beta-glucans support immune function and gut health.



Porcini

Benefits: Porcini mushrooms are a source of vitamins and minerals that support overall health, including gut function.

Key compounds: Antioxidants such as ergothioneine contribute to cellular protection.

Benefits: Cordyceps are known for their adaptogenic properties, helping the body manage stress, which indirectly influences gut health.

Key compounds: Cordycepin and polysaccharides have various health benefits.



Cordyceps



Chaga

Benefits: Chaga mushrooms are recognised for their antioxidant properties, protecting cells from oxidative stress.

Key compounds: Betulinic acid and melanin contribute to the antioxidant profile.



Oyster

Benefits: High in fibre and low in calories, oyster mushrooms are a digestion-friendly option that adds bulk to stool.

Key compounds: Polysaccharides may have prebiotic effects, supporting the growth of beneficial gut bacteria.

Benefits: Lion's mane is associated with cognitive health, and emerging research suggests potential benefits for the gut-brain axis too.

Key compounds: Erinacines and hericenones may support nerve growth factor production.



Lion's mane

Maitake

Benefits: Known for their adaptogenic properties, maitake mushrooms may help to regulate stress responses, positively influencing gut health.

Key compounds: Beta-glucans and polysaccharides contribute to immune system support.



Reishi

Benefits: Reishi is known for its immune-modulating properties, contributing to overall gut health.

Key compounds: Beta-glucans and triterpenes play a role in supporting immune function and reducing inflammation.