

Mushrooms with Medicinal Properties

(Part One by Alex Penhaligon)



Since 1979 the knowledge base around cancer treatment has expanded 100 times, and since 1999, increased a further seven times. Much of this research and its findings have been in the area of complimentary medicines and natural foods.

Included in this has been the wide ranging benefits of medicinal fungi, especially for their potential for the treatment of cancer and increasing the effectiveness of and allaying the side effects of chemotherapy and radiation. This is based on the immune stimulating and stamina building effects in people debilitated by exhaustive treatments.

Even Otzi the mummified iceman found in the European Alps, had fungi in his possessions presumably for their health benefits.

Six medicinal mushrooms have been approved by the Australian Therapeutic Goods Administration for use in Australia for various health conditions.

Fungi are susceptible to many bacterial and viral pathogens that also plague humans. Therefore the intricate defence mechanisms that they have developed against these micro-organisms can be harnessed for human use. The TGA have only approved six which appear in the chart below. Many mushrooms have overlapping health benefits, along with their own unique qualities. For instance Shiitake and Reishi are both used for immune enhancement however Shiitake also exhibits anti-candida and anti-aging effects,

while Reishi is a prized adaptogen (assists the nervous system and body generally to handle life and stress) often used for allergies, chronic Hepatitis B and diabetes. Other actions are listed in the second table. Some are used singly, others are used together to get the combined effect.

Polysaccharide-Krestin (PSK) and polysaccharide-peptide (PSP) both from Turkey Tail (*Trametes versicolor*), are used in the treatment of various cancers including lung cancer and oestrogen receptor-positive and oestrogen receptor-negative breast cancers. Tumour antigens induce tolerance and promote the secretion of a plethora of chronic inflammatory cytokines including nuclear factor kappa B, tumour necrosis factor alpha, vascular endothelial growth factor and matrix metalloproteinase-9 thereby manipulating the immune system to assist tumour progression.

PSK appears to act in tumour suppression and immune modulation, not by being directly cytotoxic (cell killing), but by normalizing antigen presentation and returning the immune system to active surveillance against tumour antigens. Hence it is truly a biological response modifier and as such is able to mitigate the immunologic side effects of cancer treatment and enhance disease free survival. **Contd - page18.**

TGA Approved for medicinal use

Latin Name	Common Name
<i>Lenticular erodes</i>	Shiitake
<i>Gamoderma lucidum</i>	Reishi, reishi
<i>Trametes versicolor</i>	Turkeytail mushroom, Coriolus
<i>Polyporus umbellatus</i>	Zhu ling, umbrella polypore
<i>Cordyceps sinensis</i>	Caterpillar mushroom, cordyceps
<i>Tremella fuciformis</i>	



Reishi (Lingzhi) (*Ganoderma lucidum*)

Continued on page 18

Species	Turkey tails	Shiitake	Catapillar mushroom	Reishi	Zhu ling	White wood ear fungus
Action						
Antibacterial	J	J	J	J	J	
Anti candida	J	J				
Anti-inflammatory					J	J
Antioxidant	J		J			
Anti-tumor	J	J	J	J	J	J
Antiviral	J	J		J	J	J
Blood pressure control		J	J	J		J
Blood sugar control		J	J	J		J
Cardiovascular effects			J	J		
Cholesterol modulation		J	J	J		J
Immune stimulation	J	J	J	J	J	J
Kidney tonic	J	J	J	J		
Liver tonic	J	J	J	J	J	J
Lung tonic			J	J	J	J
Nerve tonic			J	J		
Sexual tonic		J	J	J		
Stress reduction		J	J	J		

The immune stimulating/modulating effects PSK, PSP and other fungal b-glucans also account for the anti-infective properties of medicinal mushrooms. Structurally different b-glucans appear to bind to different receptors on immune cells, resulting in different host responses.

Other pharmacologically active compounds in medicinal fungi include the triterpenes and ergosterol. It is thought that Reishi and Shiitaki may possibly inhibit the migration of cancer cells to other locations in the body, this is still being researched.

Button mushrooms found in every supermarket are currently being trialled at 100 grams a day for prostate and breast cancer. (Be sure to source organic mushrooms to avoid a dose of pesticides at the same time)

When purchasing mushrooms from the store, make sure they are fresh and clearly labelled. Many problems occurring with complimentary medicines are due to wrong species identification. During preparation, don't over cook them. Above all, experiment and enjoy the wonderful flavours.

If consuming them on a regular basis, remember that they have powerful effects, so see your health practitioner for possible interactions between mushrooms and your medically prescribed drugs or natural supplements.

The active ingredients in foods can vary widely based on species, geographical region, farming methods and freshness.

Natural does not mean potential risk, and guidance may save valuable time and money. If taking anything in concentrated prepared forms (capsules, pills, powders etc.), it is most important to ask for professional assistance and buy quality controlled products with dosage guidelines.

Look out for Part two for more recent exciting research into Trametes and Shiitaki and their protective effects against infections and cancer.



White wood ear fungus (Trametes fuciformis)