

Therapeutic Application of Medicinal Mushrooms

Presented by Martin Powell at ACT meeting on 14th September 2016

Introduction

Martin started with an inspirational account of the amazing symbiotic relationship between fungi and plants. The network of mycelia, the part of the fungi growing in the soil, penetrates the roots of plants, greatly increasing their ability to absorb nutrients. Many cereals, including rice and wheat, grow poorly without the assistance of this fungal network.

Their relationship with the animal kingdom centres more around competition. Medicinally it is largely the fruiting bodies, visible above ground, that are used.

Mushrooms belong to the Kingdom of Fungi and are neither plants nor animals, and as such contain compounds not found elsewhere. They have been shown to have very broad therapeutic benefits especially in relation to our immune system. They have a broad range of anti-cancer effects, have a modulating affect on our immune systems, benefit allergies and auto-immune conditions.

Some mushrooms have anti pathogenic properties against bacteria, viruses etc , help with dementia, reduce hypertension, support liver function, help with diabetes, improve psoriasis, help myelination and neuropathy in MS patients, reduce cholesterol and calm the mind.

In relation to gynaecology and fertility, they have shown improvement in women with elevated NK cell activity, improved ovulation in women with PCOS, improving menopause related insomnia and helping with cervical dysplasia.

Their therapeutic benefits derive from two main routes:

- 1) **Cell wall:** Fungi have a cell wall structure that is universal to all fungi and, in contrast to the cellulose walls of plants, is made from Beta-glucans. Our immune systems have evolved to recognise the fungal cell wall components and to respond. So consuming any edible mushroom will produce a range of **universal therapeutic effects** largely affecting our immune system.
- 2) **Secondary metabolites:** Individual species of fungi produce their own unique range of secondary metabolites that affect our physiology and also that of other organisms, including disease causing organisms such as viruses, bacteria, nematodes, yeasts and other fungi. These metabolites give different species of mushrooms **individual therapeutic properties** that can be used to support our physiology and to suppress disease causing pathogens.

See Martin's slides for all the detail - individual properties of the different mushroom species, their therapeutic benefits, research and more on the biochemistry.

Benefits deriving from Universal Fungal Cell Wall

The Beta- glucan cell wall structure of fungi has a modulating effect on our immune systems. Over-activity, as in auto immune conditions, and underactive immune conditions can both be regulated to produce a balanced healthy immune response.

Eating the mushrooms will provide these benefits but clinically this is achieved by administering an extract derived from a select range of active ingredients. If the range of active ingredients is too narrow then the effect is likely less balancing on the immune system. Some medical studies have used extracts of an isolated single ingredient with unsatisfactory results.

Clinically fungi have mainly been used as an adjuvant anti-tumour treatment alongside conventional anti-cancer treatments, especially in Japan and Korea. This has given a good amount of clinical data to support their long term use and safety.

Preparing Mushrooms

Vitamin D

Mushrooms are an excellent source of Vit D, and the vitamin D content can be increased by leaving the mushrooms on a window sill in the sun for 30 mins before cooking.

Heat

Heating does not damage the effects and indeed may help to release it. Some mushrooms, including Shitake, should be cooked before eating to remove toxins that are present when raw.

Other

Trevor Wing has researched treating patients with elevated NK cells, using a formula containing Reishi, Coriolus and Cordyceps - which helped. Mycena produced even better results.

Patients with cervical dysplasia: standard treatment is to wait and watch. One year follow up showed an increase in cells that had returned to normal among those patients eating mushrooms regularly.

Mushrooms help allergies by regulating cytokines.