



Are you aware

Of the medicinal mushroom that has immune stimulating properties

PSK *Coriolus versicolor*

1. What is PSK?

PSK is a proteoglycan extracted from the mushroom *Coriolus versicolor* (also known as *Trametes versicolor*, Yun Zhi in China, Kawaratake in Japan and Turkey Tail in Europe and America). The results obtained from a large number of published scientific studies and clinical trials have shown that PSK is a powerful immunomodulator capable of stimulating diverse immunological functions.

2. Where does PSK come from?

Medicinal mushrooms have been used for centuries throughout Asia but only recently has the extent of their benefits been recognised by Western countries. The known therapeutic benefits of *Coriolus versicolor* led Japanese researchers in 1971 to isolate an active substance from shelf mushroom or cultured mycelia. This active substance was called PSK.

3. How does PSK work?

PSK belongs to a class of immunomodulators known as biological response modifiers which are capable of stimulating immune functions and anti cancer activities. PSK enhances cellular immune function and stimulates the immune system in the body to help maintain a correct balance between cellular and humoral immunity.

4. Why should the patient take PSK?

Depressed immunity may be attributed to a number of causes including advanced age, stress, poor gut barrier function, infection, disease, exposure to carcinogens and treatment with immunosuppressive agents including chemotherapy and radiation therapy. PSK has been shown to significantly enhance quality of life and is also beneficial for maintaining general immune health with no reported adverse side effects.

5. Why should the patient be taking 6 capsules per day?

Numerous clinical trials have established that 6 capsules, each of 500mg (a total daily dosage of 3g) is the accepted dosage of PSK.

6. Are there any reactions or side effects with PSK?

Adverse reactions from PSK have not been reported since 1970 when clinical trials first began in Japan. However the Japanese Ministry of Health and Welfare reported that side effects were experienced in 114 patients of a total of 11,300 cancer patients who were given PSK as an adjunct with chemotherapy, the main effects being infrequent diarrhoea and nausea.

7. To what extent has PSK been used?

The extract from *Coriolus versicolor* has been used in China for about 500 years, and the purified extract PSK has been widely used in Japan for nearly 40 years. There have been over 300 studies conducted world wide with numerous published clinical trials. The evidence available dismisses any claims of “unproven, disproven, no evidence”.

8. Why hasn't PSK been more readily available until now?

The demand in both the Chinese and Japanese domestic market has taken the majority of available material but, due to the increase in commercial production of *Coriolus versicolor* mushroom, the pure extract produced from the mushroom is now becoming more accessible.

9. What is the PSK Information Foundation?

The PSK Information Foundation is a non-profit organisation that gathers and disseminates to clinicians information freely available in the public domain. The information on PSK is sourced from reputable published studies only. The Foundation does not have a product for sale.

10. How long can the patient take PSK?

PSK could be taken for an indefinite period as clinical trials have documented evidence of patients taking PSK for more than 10 years.

11. Should the patient take PSK while they are receiving Chemotherapy and/or Radiotherapy?

Randomised controlled human clinical trials have documented that PSK has anticancer activity by boosting cellular immune function in the host to defend against tumour progression. PSK is well-tolerated and compatible as an adjuvant immunotherapy with surgery, chemotherapy and/or radiation therapy.

12. Is PSK expensive to buy?

No, PSK is not expensive. On a recommended daily dose of 6 x 500mg capsules (3 grams), the cost per day should be about the same as a “cup of tea or coffee”.

An overview of PSK *Coriolus versicolor*

Coriolus versicolor (also known as *Trametes versicolor*, Yun Zhi in China, Kawaratake in Japan and Turkey tail in the West), is an edible mushroom that has been used by medical practitioners of Traditional Chinese Medicine (TCM) for centuries.

As recorded in Traditional Chinese Medicine practice in the Ming Dynasty, *Coriolus versicolor* is considered useful as a hot-water drink extract for removing toxins, reducing phlegm, increasing energy and spirit and enhancing organ function such as the spleen and the liver in the body. The beneficial effects from the daily consumption of *Coriolus versicolor* extract are believed to be associated with the enhancement of the body's immune function. The extract is still commonly prescribed in clinical practice of TCM in China today for a number of indications including cancer, chronic hepatitis and respiratory, urinary and digestive tract infections.

The success of *Coriolus versicolor* extract for treating stomach cancer in Japan in the 1970s led to the isolation of an active compound known as PSK. Since then, over 300 published studies have been reported.

PSK has the ability to activate many types of cells of the body's immune system as well as promoting the production of antibodies and a class of immunoregulatory molecules known as cytokines. It has been documented that oral administration of PSK can restore the immune potential to the normal level in the host with a certain depressed immunity caused by infection, stress, cancer or the use of immunosuppressive drugs. PSK has been shown to have the capacity to enhance host resistance against viral, bacterial and fungal infections.

The clinical efficacy of PSK after oral administration has been demonstrated in more than 40 clinical trials and 2 meta-analyses in which significant improvements in both disease-free and overall survival rates in patients receiving chemotherapy or/and radiotherapy were observed, with results from some of the trials published in leading medical journals.

The efficacy of PSK is closely linked to the patient's immune status. The immune status of the patient is important because of the side-effects from chemotherapy and radiotherapy which are major factors influencing dose response adjustment and cancer treatment schedules. In addition, patients are at risk of opportunistic infections due to immune suppression.

Dosage

An oral dose of 3 grams PSK per day taken in capsules has been established in human clinical trials, with a duration ranging from 28 days to 10 years. (This equates to 6 capsules per day, divided between morning and evening, each capsule containing 500mg of PSK extract). PSK capsules should be taken 30 minutes before food

Adverse effects/Toxicity

Animal toxicology studies have reported no significant changes in white blood cell counts, blood biochemistry, liver and renal functions and pathology when animals were given oral daily doses of 12-18 g per kg of body weight. (These doses are equivalent to giving 100 times the recommended daily oral dose for humans.) In clinical trials, adverse reactions from PSK are rare. However, the only significant side effects being occasional darkening of the fingernails, passing of dark stool, and low-grade haematological and gastrointestinal toxicities when used with chemotherapy or/and radiotherapy. This suggests that the side effects may be caused by cancer therapies themselves. Drug interaction has not been reported for PSK.

Regulatory status

PSK is available over the counter in many countries without a prescription. In Japan, PSK is prescribed for use as an adjunctive immunotherapy in combination with chemotherapeutic agents or radiation therapy for the treatment of cancer.

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