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Fresh. Simple. Good.

Immunity

Emerging research indicates that certain mushroom extracts, such as beta-glucans, may have a positive effect on the immune system.

Medicinal properties have been attributed to mushrooms for thousands of year. Benefit to the immune system may be one of them. Here is what we know so far:

- Research looking at mushrooms extracts and immunity focuses mainly on beta-glucans, polysaccharides that contribute to the soluble fibre in mushrooms.¹
- A Canadian study, published in the journal *Mycologia* in 2006, found that the beta-glucan extracted from mushrooms displayed potential anti-inflammatory activity.²
- A recent review of the anti-inflammatory properties of mushroom extracts and their potential effects on the immune system concluded that they stimulate different cells of the immune system including T and B cells, macrophages and natural killer cells.³ Further research is needed to pinpoint the biochemical mechanisms responsible for these observations as immune responses can depend on a number of factors including dose, route of administration, and timing of administrations of the compound in question.
- Mushroom extracts may be beneficial when used in conjunction with chemotherapy. A 2004 study conducted at The Catholic University of Korea in Seoul, South Korea found that natural killer cell activity was significantly higher in the mushroom extract group compared to those who were given a placebo.⁴ They also found that chemotherapy-associated side effects such as appetite, hair loss, emotional stability and general weakness were all improved for gynecological cancer patients who took a mushroom extract.
- A March 2007 eNewsletter from the American Institute of Cancer Research notes that ongoing research is looking into how mushrooms can aid cancer treatments by strengthening the immune system.⁵
- Research at the USDA Human Nutrition Research Center on Aging at Tufts University in Boston, Mass is also being done to further investigate the immuno-enhancing effect of mushrooms. Various other mushroom-immunity studies are underway at Pennsylvania State University and Oklahoma State University.
- The bottom line: although we don't know yet exactly how mushrooms are contributing to immunity, it makes good sense to include them in a nutritious, varied diet for optimal health.

References:

- ¹ Sadler M. Nutritional properties of edible fungi. *British Nutrition Foundation Nutrition Bulletin* 28, 305-8, 2003.
- ² Pacheco-Sanchez M, Boutin Y, Angers P, Gosselin A and Tweddell RJ. A bioactive (1→3)-, (1—4)-beta-D-glucan from *Collybia dryophila* and other mushrooms. *Mycologia*. 2006;98(2):180-185.
- ³ Lull C, Wichers HJ and Savelkoul HFJ. Antiinflammatory and Immunomodulating Properties of Fungal Metabolites. *Mediators of Inflammation*. 2005;2:63-80.
- ⁴ Ahn WS, Kim DJ, Chae GT et al. Natural killer cell activity and quality of life were improved by consumption of a mushroom extract, *Agaricus blazei* Murill Kyowa, in gynecological cancer patients undergoing chemotherapy. *Int J Gynecol Cancer*. 2004;14(4):589-94.
- ⁵ eNewsletter. American Institute for Cancer Research. March 2007 at http://www.aicr.org/site/Neews2?abbr=pub_&page=NewsArticle&id=11331.