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Memorial Sloan Kettering
Cancer Center

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[Back](#)

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[Refer a Patient](#)

[Refer a Patient](#)

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[Our mission, vision & core values](#)

[Leadership](#)

[History](#)

[Equality, diversity & inclusion](#)

[Annual report](#)

[Give to MSK](#)

What is it?

Small studies have evaluated shiitake mushroom extract, with mixed results. Lentinan, a polysaccharide extracted from shiitake, may help extend the survival of patients with some cancers when used with chemotherapy, but additional studies are needed.

Some of the medicinal properties of shiitake mushroom are attributed to a sugar molecule named [lentinan](#), on which extensive research has been done. In laboratory tests, lentinan does not kill cancer cells directly, but enhances a number of aspects of the immune system, which may aid in the slowing of tumor growth. Lentinan also kills viruses and microbes directly in laboratory studies. Most studies of lentinan involve intravenous or intramuscular injections. It is uncertain whether the ingestion of shiitake mushrooms provides similar effects. One clinical trial has shown shiitake extract alone is not an effective treatment for prostate cancer.

What are the potential uses and benefits?

- To prevent and treat cancer

A shiitake extract was found to be ineffective for the treatment of prostate cancer. However, an oral formulation of [lentinan](#) was shown effective in extending survival in patients with stomach, colorectal, pancreatic, and liver cancers. Larger studies are needed to confirm this effect.

- To lower high cholesterol

Compounds in shiitake have cholesterol-lowering effects in lab studies, but there is no proof from clinical trials of their ability to also lower cholesterol in people.

- To stimulate the immune system

Lentinan stimulates the activity of certain immune cells in lab studies and in people. However, it is unclear if lentinan or shiitake are effective in treating diseases such as AIDS and cancer.

- To treat infections

Although lab studies suggest antiviral and antibacterial properties, clinical data are lacking.

What are the side effects?

- Skin inflammation
- Increased skin sensitivity to sunlight
- Abnormally high level of certain white blood cells
- Upset stomach
- Pneumonia caused by hypersensitivity to spores
- Small bowel obstruction from eating a whole shiitake mushroom

If you have any questions, contact a member of your care team directly. If you're a patient at MSK and you need to reach a provider after 5 p.m., during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

Shiitake Mushroom - Last updated on February 14, 2023

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