



What you don't know about Mushrooms



Everyone knows that vegetables are an important part of a healthy diet, but what makes mushrooms stand out?

Immune System

The immune system is made up of a network of cells, tissues and organs that work together to protect the body against infection and maintain overall health. Mushrooms, like other fruits and vegetables, can play a positive role in supporting a healthy immune system.

Nutrients Important for Overall Wellness

There are a variety of micronutrients, as identified by the Linus Pauling Institute at Oregon State University², that are important for supporting a healthy immune system including selenium and vitamins D and B₆, which can be found in mushrooms.

	The Facts	Nutrients in Mushrooms ⁴
Selenium³ RDA (Adults): 55 mcg/day	Selenium is an essential trace mineral which means your body must get this mineral in the food you eat. Selenium helps your body make special proteins, called antioxidant enzymes. These play a role in preventing cell damage. ⁵	EXCELLENT SOURCE <ul style="list-style-type: none"> • 4 crimini mushrooms: 20.8 mcg 38% RDA • 1 piece whole portabella: 15.6 mcg 28% RDA GOOD SOURCE <ul style="list-style-type: none"> • 5 medium mushrooms: 8.35 mcg 15% RDA
Vitamin D⁶ RDA (Adults): 20 mcg/day	Vitamin D helps build and maintain strong bones by helping the body absorb calcium. Vitamin D is available via diet, supplements and sunlight, which is why it is also referred to as the "sunshine vitamin." Vitamin D has other roles in the body, including modulation of cell growth, neuromuscular and immune function, and reduction of inflammation ⁵ .	EXCELLENT SOURCE <ul style="list-style-type: none"> • 5 medium mushrooms, exposed to UV light: 23.6 mcg 118% RDA • 4 crimini mushrooms, exposed to UV light: 25.52 mcg 128% RDA • 1 piece whole portabella, exposed to UV light: 23.9 mcg 120% RDA • 1 cup diced maitake mushrooms: 19.7 mcg 99% RDA
Vitamin B₆ (Pyridoxine)⁷ RDA (Adults): 1.3 mg/day	Vitamin B ₆ helps convert food into usable energy and assists in the formation of neurotransmitters, red blood cells, proteins and DNA. ⁸	GOOD SOURCE <ul style="list-style-type: none"> • 4 whole shiitake mushrooms: 0.224 mcg 13% RDA

Vitamin D

Vitamin D remains a nutrient of concern for Canadians as 1 in 3 Canadians are not reaching the RDA for vitamin D.² Health Canada's daily recommended intakes (RDAs) for vitamin D, updated in 2011, are 400 international units (IU) for infants, 600 IU for children aged one to adults aged 70, and 800 IU for adults over 70.

Few foods naturally contain vitamin D, but mushrooms are unique for being the only food in the produce aisle that contains vitamin D. In fact, the IOM recognizes UV-exposed mushrooms as the exception to the rule that plant foods don't naturally contain vitamin D. Some mushrooms contain higher levels of a plant sterol, ergosterol, which converts to vitamin D upon exposure to UV light.

Did you know? USDA's National Nutrient Database now includes white and crimini mushrooms exposed to UV light. One serving of raw, UV-exposed, white and crimini mushrooms contains 890 IU and 1086 IU of vitamin D, respectively. It has been demonstrated in recent studies that the level of Vitamin D² in White/Brown mushrooms can be increased significantly (up to 100% of the Daily Value), by exposure to ultraviolet light for a few minutes, either pre-harvest or post-harvest.

One serving (75 g or 3/4 cup) of UV-exposed portabella mushrooms contains 3X the amount of vitamin D in fortified Milk. This makes UV-exposed mushrooms a great non-animal based source of Vitamin D for Canadians. One serving contains 384 IU, or 64% DV for adults.

Umami Flavour

Umami is the fifth basic taste after sweet, salty, bitter and sour. Derived from the Japanese word umai, meaning "delicious," umami (pronounced oo-MAH-mee) is described as a savory, brothy, rich or meaty taste sensation.

To scientists, umami indicates a high level of glutamate, an amino acid and building block of protein. To chefs and food lovers, it's a satisfying sense of deep, complete flavor, balancing savory flavors and full-bodied taste with distinctive qualities of aroma and mouthfeel. Foods like mushrooms, tomatoes, Parmesan cheese and green tea are rich in umami.

A 2014 study from the Culinary Institute of America and University of California-Davis, published in the Journal of Food Science, explored the flavor-enhancing properties of mushrooms and found that blending finely chopped mushrooms with ground meat enhances flavor and nutrition. As the study shows, a traditional ground meat recipe prepared with 50 percent mushrooms and 50 percent meat (or even 80 percent mushrooms and 20 percent meat) can:

- Reduce calorie, fat and sodium intake, while adding in B vitamins - riboflavin (28%), niacin (20%) and pantothenic acid (27%).
- Enhance the overall flavor, because of double the impact of umami.
- Maintain flavor while reducing sodium intake by 25 percent.

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