



E-MAZING

News About Mushrooms

SUMMER 2008

Unearthing The Power of Energy Density



Preliminary research suggests increasing intake of low-energy density foods, specifically mushrooms, in place of high-energy density foods, like lean ground beef, can be an effective method for reducing daily energy and fat intake. Recent research led by Dr. Lawrence Cheskin, MD, Director of John Hopkins Weight Management Center, put this idea to the test.¹

In Dr. Cheskin's study, published in the July 2008 issue of *Appetite*, subjects were randomized to consume four meat entrees or four mushroom entrees in the first week. In the second week, subjects consumed the alternate mushroom or meat versions of the same entrees (i.e., lasagna, savory Napoleon, Sloppy Joe and chili) in order to control for possible order effects.

Energy intakes were significantly higher during meat meals than

mushroom meals, a difference that averaged 420 fewer calories and 30 fewer fat grams over the four day test period. Subjects' ratings for palatability (meal appeal), appetite, satiation (after meal fullness) and satiety (general fullness) did not differ between groups.

"What's really intriguing to me about the results was that subjects seemed to accept mushrooms as a palatable and suitable culinary substitute for meat," said Dr. Cheskin. "They didn't compensate for the lower calorie mushroom meal by eating more food later in the day."

This research team is continuing to study these effects over an extended period of time.

The preliminary findings of Cheskin's team follow those of other initial data that suggested if men substituted a 4-ounce Portabella

mushroom for a 4-ounce grilled hamburger every time they ate a grilled hamburger over the course of a year, and didn't change anything else, they could save more than 18,000 calories and nearly 3,000 grams of fat.² That's the equivalent of 5.3 pounds or 30 sticks of butter.

Additional clinical trials are needed to understand the potential role of energy density as a strategy for preventing or treating obesity.

1. Cheskin LJ, Davis LM, Lipsky LM, Mitola AH, Lycan T, Mitchell V, Mickle B, Adkins E. Lack of energy compensation over 4 days when white button mushrooms are substituted for beef. *Appetite*. 2008;51:50-57.; 2. Block, Dietary Data Systems. Analysis of NHANES III Data. *Mushrooms: More Than Just Another Fungus*. March 2004.

Mushrooms: Worth Their Weight

Long overlooked, mushrooms are nature's hidden treasure when it comes to helping people watching their weight. With 20 calories per serving, 4-5 white button mushrooms serve up a similar number of nutrients as brightly colored fruits and vegetables. Mushrooms:

- Are the only fresh vegetable or fruit with 4 percent of the daily value of Vitamin D per serving*
- Are the leading source of the antioxidant selenium in the fruit and vegetable category
- Are a good source of the B vitamins riboflavin, niacin and pantothenic acid, which help break down proteins, fats and carbohydrates so they can be used for energy
- Have no fat, saturated fat or cholesterol
- Have a very low energy density rating

In addition, preliminary research suggests that a standard serving of mushrooms can provide 100 percent or more of the daily value of vitamin D after just five minutes of contact with sunlight.^{3,4} Mushrooms can be a delicious and filling addition to any dish. Toss in a handful of mushrooms to your favorite dish. They're delicious, versatile, and nutrient rich.

*White button mushrooms only; Jasinghe VJ, Perera CO. Distribution of ergosterol in different tissues of mushrooms and its effect on the conversion of ergosterol in vitamin D2 by UV irradiation. *Food Chem*. 2005;2:541-546. ⁴ Calvo M. FDA's Center for Food Safety and Applied Nutrition and the Mushroom Council Collaborate to Optimize the Natural Vitamin D Content of Edible Mushrooms and to Examine their Health Benefits in Different Rodent Models of Innate Immunity. Presented at 2006 FDA Science Forum A Century of FDA Science: Pioneering the Future of Public Health. April 18-20, 2006, Washington Convention Center.



Mushrooms Are Weight Watchers' Pick of the Season



Weight is a constant concern for more than 95 million American adults, according to a recent national survey published by the Calorie Control Council.

The majority of adults surveyed identify poor eating habits (91 percent), lack of portion control (86 percent), and eating too many calories (83 percent) as top reasons for being overweight.

Fresh mushrooms, which provide satiety with fewer calories per serving than a rice cake, may offer another solution for millions of weight-conscious Americans.

The Mushroom Council will partner with Weight Watchers® on a major health initiative that spotlights how fruits and vegetables can be part of a healthy lifestyle.

From July through September 2008, the Weight Watchers Pick of the Season program will highlight one of **mushrooms' hidden treasures** — the fact that a two-cup serving of savory and satisfying nutrient-rich mushrooms has a *POINTS* value of 0.

Look for the Weight Watchers Pick of the Season and 0 *POINTS* value logos on mushroom packaging and on in-store ads at grocery stores during this time period.

Tasteful Treasure

Farmers Market
Mushroom Salad

Preparation Time: 10 minutes

Cooking Time: 10 Minutes

Serves: 6-8

- 3 tablespoons olive oil, divided
- 1 pound mushrooms, sliced
- 2 cup zucchini, chopped
- 2 cups fresh corn kernels, cut from the cob
- 2 cups cooked brown rice
- 1 tablespoon fresh lemon juice
- 2 bell peppers of varying colors diced
- 1/2 cup fresh thyme leaves or one tablespoon dried
- 2 beefsteak tomatoes, sliced
- 1/2 cup arugula
- Salt and pepper to taste

Heat two tablespoons olive oil in large non-stick skillet over medium-high heat. Add a single layer of mushrooms and cook, without stirring, for about five minutes or until mushrooms become red-brown on one side. Flip and cook about five minutes more, until other side is same color; set aside.

Sauté zucchini for about five minutes, adding additional olive oil to skillet if necessary. Turn off heat and add corn and rice; stir to combine. Cook for an additional three to five minutes to warm ingredients. Drizzle with remaining olive oil and lemon juice and gently stir in bell pepper and thyme; season with salt and pepper.

Arrange tomatoes and arugula on a plate; pour on rice mixture and top with mushrooms. May be served warm or cold.



Each serving provides: 150 calories, 6g fat (9% Daily Value), 1g saturated fat (4% Daily Value), 0 mg cholesterol, 15mg sodium (1% Daily Value), 3g dietary fiber (12% Daily Value), 4g protein, vitamin C (70% Daily Value), potassium (15% Daily Value), vitamin A (15% Daily Value), selenium (14% Daily Value), iron (6% Daily Value), calcium (4% Daily Value), vitamin D (3% Daily Value)

For more mushroom recipes, information and research, visit www.mushroominfo.com