

The Joys of Soy!

University of Michigan Hospitals and Health Centers
Patient Food and Nutrition Services

Healthy Eating Tip of the Month
May, 2011



Soy foods are no longer just for vegetarians...

...they're for **EVERYONE!** Soyfoods have long been praised for their high protein content, but research has now proven new benefits including lowering LDL (or "bad") cholesterol, inhibiting blood clot formation, having cardioprotective effects, and preventing osteoporosis.

Purchasing soyfoods is now easier than ever. With a wide array of soy products available at your local grocery store, you can enjoy all the flavors and health benefits of soy...tonight! Look for soy products in the produce section and refrigerated and frozen-foods cases. Some products like canned soybeans, soy nut butter and shelf-stable soy beverages are found on grocery shelves.

Remember, soyfoods are part of a balanced diet which includes a variety of *fruits, vegetables and whole grains*. You may choose to eat soyfoods in addition to-or as a replacement for- some meats and dairy foods, but remember to keep your diet full of both color and variety!

The benefits of soyfoods include the following:

✓ Soy foods are heart-healthy!

- Soy foods can lower LDL cholesterol. The protein in soyfoods has lipid-lowering effects. Soy protein reduces LDL cholesterol without reducing the HDL (or "good") cholesterol.
- Soy foods also lower serum triglycerides, another fat that, at high levels, is correlated with coronary heart disease.
- Soy foods may inhibit clot formation and arterial-plaque formation. *Genistein*, an isoflavone present in soy foods, plays an important part in keeping our arteries free of build-up. Clots and plaques can cause heart attack and/or stroke. *Genistein* is beneficial in that it is an antioxidant, preventing the attack on LDL cholesterol by free radicals (or unstable oxygen molecules). When LDL cholesterol is oxidized in this way, it accumulates in blood vessels.



✓ Soy foods add fiber to your diet

- Many soyfoods contain fiber, particularly insoluble fiber. This type of fiber helps to reduce serum cholesterol by binding it and preventing its absorption from the intestinal tract. Soluble fiber also controls blood sugar levels in diabetics. Whole soybeans, tempeh and soynuts are good sources of fiber.

✓ Soy foods help prevent certain cancers

- Soybeans contain several chemicals that have anticancer properties. These include: isoflavones, saponins, phytates, protease inhibitors and phytosterols. These chemicals control cell growth and protect cells from damage.
- Doctors are studying the effects of a high-soy diet in preventing cancers of the colon, prostate and breast, or "hormone-dependent" cancers. Lab studies suggest that isoflavones in soy reduce the risk of these type of cancers.
- The National Cancer Institute and the University of California, Los Angeles are two institutions studying the effects of a high-soy diet on prostate cancer.

✓ Soy foods are good for your bones



- Soy can help prevent osteoporosis. People who eat soy protein lose less calcium in the urine than those who eat the same amount of animal protein. So, those who eat soy protein retain more calcium in their bodies.
 - People who eat soy foods, more specifically the isoflavones in soy foods, retain more calcium in their bones themselves, than those who don't eat soy foods.

✓ Soy foods may help prevent hot flashes

- Soy foods contain isoflavones, compounds that are considered "weak estrogens." Isoflavones represent a possible alternative to hormone replacement for postmenopausal women. It has been shown that Asian women experience fewer hot flashes than Western women do, which may be an effect of a high soy diet.

Confused yet? Don't be! Here are some simple definitions for common words you'll hear in the discussion of soyfoods.

Flavanoids: A group of plant chemicals found in many foods.

Isoflavones: One group of flavanoids. While the isoflavones *genestein* and *daidzein* are found in other legumes, soybeans are the only excellent source of these beneficial chemicals!

How to add soy to your diet...

Soyfoods are a great choice because they are **GOOD** for us and they are easily added to a normal diet.

There are several health benefits of soy. Research shows that soy helps to lower “bad” or LDL cholesterol and may inhibit blood clot formation. Soyfoods also contain a category of plant compounds called *isoflavones* that help our bodies perform better. Besides from adding high-quality protein and fiber to our diets, soy foods contain *folate and vitamin E* which are healthy for our **hearts**, and they also help us hold on to the *calcium stores* in our bones!



Transitioning to a diet that is higher in soy is easy! Here are some tips:

- **Start slowly.** Soybeans are beans, and can cause bloating and gas. With time your system will adapt and you will handle higher amounts more easily.
- **Add textured soy protein or tofu** to casseroles and stews.
- **Substitute soy protein** for about 1/4 of the meat in meat dishes, such as meat loaf.
- **Add a meat alternate**, such as soy sausage, to familiar recipes with several ingredients.
- **Substitute pureed tofu** for sour cream in dips, sauces and dressings.
- **Add soy flour** to baked goods. Start with one tablespoon (Tbsp) in every cup of all-purpose flour.
- When baking or making smoothies, **use soy milk.**
- **Try several soy milk brands** to find your favorite. They all taste a little different!

Recipe: Pasta & Green Soybean Salad

- 8 oz small pasta shells, cooked and drained
- 16 oz package frozen green soybeans, cooked and drained
- 1 red bell pepper, finely chopped
- 1/4 cup finely chopped onion
- 1/4 cup crumbled feta cheese
- 1/4 cup chopped ripe Greek olives (optional)
- 1/4 cup fat-free chicken broth
- 3 tablespoons (Tbsp) white wine vinegar
- 2 Tbsp extra-virgin olive oil
- 1 Tbsp Dijon mustard
- 1 garlic clove, minced
- 2 Tbsp finely chopped fresh parsley
- 1 Tbsp finely chopped fresh basil
- 1 teaspoon (tsp) finely chopped oregano



Combine pasta, soybeans, bell pepper, onion, feta cheese and olives in a large bowl.

Whisk together chicken broth, vinegar, olive oil, mustard, garlic, herbs and pepper in small bowl. Pour over pasta mixture and toss to combine. Cover and refrigerate at least 2 hours or overnight.

Makes 6-8 servings.

1 cup contains: 201 Calories, 8 g Protein, 19 g Carb, 11 grams Fat, 290 mg Sodium

Recipe: Blue Cheese and Tofu Spread

- 2 garlic cloves, minced
- 1/2 cup (4 oz) extra-firm silken tofu, drained
- 1/4 cup blue cheese, softened
- 1/2 tsp freshly ground black pepper
- 1 Tbsp fresh lemon juice
- Crackers or pita bread, to serve
- Walnuts and chives (for garnish, optional)

Combine all ingredients except crackers in a food processor or blender. Process until smooth. Cover and refrigerate 30 minutes to enable flavors to blend.

Serve with crackers or pita bread for dipping.

Makes 3/4 cup.

2 Tbsp contains: 63 Calories, 5 g Protein, 2 g Carb, 4 grams Fat, 5134mg Sodium



Recipe: Strawberry-Papaya Smoothie

- 1 cup papaya pieces
- 1 cup strawberries (fresh or frozen)
- 1 12 oz package silken tofu, drained
- 1 11.5 oz can papaya nectar, chilled



Add all ingredients to a blender and blend until smooth. Pour into chilled glasses and serve.

Makes 4 1/2 cups.

1 cup contains: 90 Calories, 6 g Protein, 16 g Carb, 1 grams Fat, 54 mg Sodium

What's the deal with soybean oil?

According to the United Soybean Board, soybean oil is the world's most widely used edible oil. Did you know that, of the major vegetable oils consumed in the US (including cottonseed, corn, canola, palm, sunflower and peanut), 71% is soybean oil? Most oils marketed and sold as "vegetable oil" are actually mostly soybean oil! Who knew?

Usually, margarine and shortenings contain some amount of soybean oil, and it is oftentimes found in mayonnaise, salad dressings, frozen foods, imitation dairy and meat products and shelf-stable baked goods.

Also, because soybean oil has very little natural flavor, it won't disturb the taste of your favorite foods! So, get cooking with soybean oil!



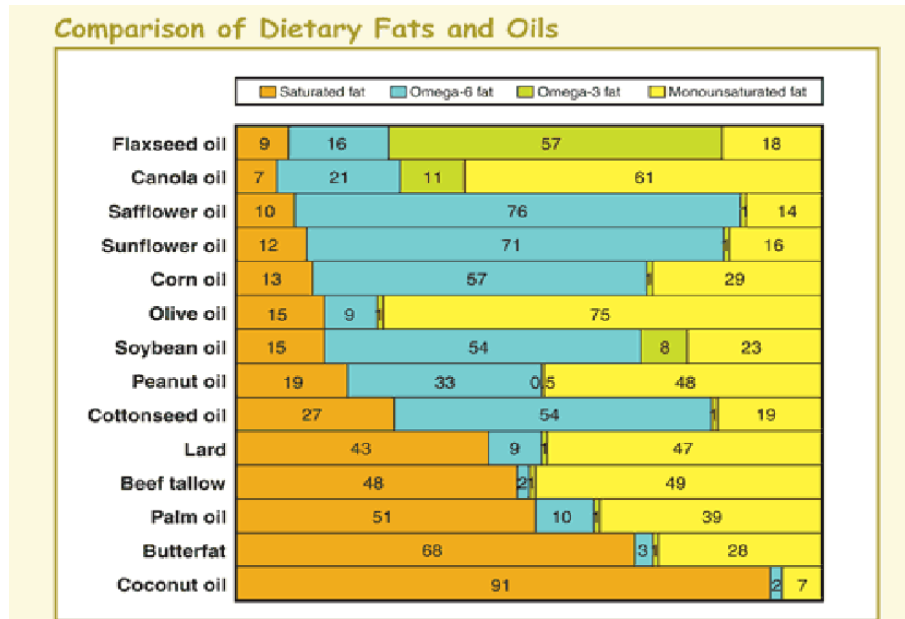
✓ Versatile and affordable

- Soybean oil has been preferred by food manufacturers and consumers alike for a long time due to its versatility and competitive pricing. *Its neutral flavor and well-rounded fatty acid profile* make soybean oil more desirable than many other commercial oils.

✓ Omega-3 and Omega-6 fatty acids

- There are only a handful of non-fish sources of omega-3 and omega-6 fatty acids...and soybean oil is one of them! While fish oil is the preferred source of omega-3's due to its large bioavailability of EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid), the linolenic acid in soybean oil is the primary source of omega-3's in the American diet. Because omega-3's have been found to have cardioprotective effects, research is currently being done to increase the amounts of both EPA and DHA in soybeans .

- Omega-6 fatty acids may decrease the risk of heart disease, according to the American Heart Association. While soybean oil contains around **50% omega-6 fatty acids**, this oil is one of the most concentrated sources of this heart-healthy, polyunsaturated fat.



✓ Vitamin E

- Vitamin E, also known as alpha-tocopherol, is the body's primary lipid-soluble antioxidant defense. Soybean oil is the primary commercial source of vitamin E. Consuming enough Vitamin E has been linked to reduced risks of cataracts, premature aging and arthritis.

✓ Phytosterols

- Soybean oil contains several phytosterols including beta-sitosterol and campesterol. Specifically, beta-sitosterol and its derivatives, called sitostanol esters, have been shown to decrease serum cholesterol and LDL cholesterol *up to 10% WITHOUT decreasing levels of the "good" cholesterol*, or HDL cholesterol!

✓ Trans fats- who needs them?

- Oftentimes oils are **hydrogenated**, or given additional hydrogen molecules to convert the liquid oil to a solid state for stability. This process creates *trans fatty acids* which are the most harmful as far as effects on serum lipid levels and heart function. With the growing popularity of low-linolenic soybean oils comes the decreased need to hydrogenate much of the soybean oil used in the food industry.
- Today, **less than 50% of the soybean oil used for domestic food production requires hydrogenation!** Remember, our bodies don't require trans fats. Check the nutrition labels on your oils and spreads– the closer trans fats are to "0", the better!



Type of fat	Effect on 'bad' LDL-cholesterol levels	Effect on 'good' HDL-cholesterol levels
Saturated	↑ ↑ ↑	neutral
Trans	↑ ↑ ↑	↓ ↓
Monounsaturated	↓	neutral
Polyunsaturated	↓ ↓	↑ ↑

If the nutritional benefits of soybean oil aren't quite enough to sway you...

...consider this: Soybean production is one of the most **self-sustaining** farming practices worldwide. Soy production has increased more than 70% in the last 20 years, and throughout this time period, soy farmers have increased their bio-friendliness by reducing overall energy use AND reducing carbon emissions while harvesting, cleaning, and packaging their crop.

Buying soy is an excellent way to eat healthier fats while reducing your carbon footprint. *Buy soy and help contribute to a cleaner today and more sustainable tomorrow!*



Meeting the Goal with Soy!

The Soyfoods Association of North America recommends meeting your dietary goals with soy! Soy foods are included in each of the main food groups: grains, dairy, fruits/vegetables, meat (soy alternative)/beans and fats/oils. The following daily dietary goals and are based on a 2,000 calorie diet. Try incorporating some of the following into YOUR diet!

				
Grains	Dairy	Fruits/Vegetables	Meat*/Beans	Oils
Goal: 6 oz- equivalents^	Goal: 3 cups	Goal: 4.5 cups	Goal: 5.5 oz- equivalents	Goal: 24 grams (6 tsp)
<ul style="list-style-type: none"> *Soy cereal *Soy bread *Soy muffins *Soy grits *Soy pasta *Soy flour 	<ul style="list-style-type: none"> *Fortified soymilk (plain, vanilla, chocolate) *Frozen soy desserts *Soy slices *Cultured soy 	<ul style="list-style-type: none"> *Edamame *Canned soybeans *Soynuts 	<ul style="list-style-type: none"> *Soy burgers, soy deli slices, soy sausage, ground meat alternatives *Tofu *Soynuts *Edamame *Soynut butter 	<ul style="list-style-type: none"> *Soybean oil
<p>Health Tip: Choose whole grain products high in dietary fiber.</p> <p>^1 oz= 1 slice bread or 1 cup dry cereal or 1/2 cup pasta</p>	<p>Health Tip: Fortified soymilks and soy dairy alternatives are low in saturated fat and are a good source of enriches calcium, vitamins A & D, B vitamins, potassium and Iron.</p>	<p>Health Tip: Consume a variety of fiber-rich fruits and vegetables.</p>	<p>Health Tip: To avoid saturated sats, choose soy meat alternatives hat provide the protein you need with no cholesterol and little to no saturated fat.</p>	<p>Health Tip: Soybean oil is low in saturated fats and high in healthy Omega-3 fatty acids.</p>

Information provided by the Soyfoods Association of North America at www.soyfoods.org

10 Tips for Following a Vegetarian Diet

Many people who choose to consume a lot of soy are **vegetarian** (may not consume poultry, red meat and/or fish), and some are **vegan** (do not consume any animal products including milk and eggs). Whether or not you are a vegetarian, the following tips can help increase the amount of healthy fruits and vegetables in your diet! Give these a try!

1. think about protein

Your protein needs can easily be met by eating a variety of plant-based foods. Sources of protein for vegetarians include beans, nuts, peas and soy products (tofu, tempeh, veggie burgers). Build meals around protein sources that are naturally low in fat, such as beans, lentil and rice.

2. bone up on sources of calcium



Calcium is used for building bones and teeth. Sources of calcium for vegetarians include fortified breakfast cereals, soy products (tofu, soy-based beverages), calcium-fortified orange juice, and some dark-green leafy vegetables (collard greens, turnip greens, boy choy, mustard greens). These foods are usually low in fat and do not contain cholesterol naturally.

3. make simple changes

Many dishes can be made vegetarian- pasta primavera, pasta with marinara or pesto sauce, veggie pizza, vegetable lasagna, tofu-vegetable stir-fry, bean burritos, etc. These changes can increase vegetable intake and cut saturated fat and cholesterol intake.

4. enjoy a cookout

For barbecues, try veggie or “garden” burgers, soy hot dogs, marinated tofu or tempeh, and veggie kabobs. Grilled veggies are GREAT, too!

5. include beans and peas

Because of their high nutrient content, consuming dry beans and peas is recommended for EVERYONE, vegetarians and non-vegetarians alike. Enjoy some beans and rice...or maybe a three-bean salad or split pea soup.



6. try different veggie versions

A variety of vegetarian products look (and may taste) like their non-vegetarian counterparts, but are usually lower in saturated fat and contain no cholesterol. For breakfast, try soy-based sausage patties or links. For dinner, rather than hamburgers, try veggie burgers.

7. make some small changes at restaurants

Most restaurants can accommodate vegetarian modifications to menu items by substituting meatless sauces, omitting meat from stir-fries, and adding vegetables or pasta in place of meat. These substitutions are more likely to be available at restaurants that make food to order.

8. nuts make great snacks

Choose nuts as a snack, on salads, or in main dishes. Use nuts to replace meat or poultry. Add walnuts or pecans to a green salad instead of meat or cheese.



9. get your vitamin E

To help meet vitamin E recommendations, choose specific nut and seed choices more often- sunflower seeds, almonds, and hazelnuts. These are among the best sources of vitamin E in the Meat and Beans food group.

10. choose fats wisely

Fatty acids that are necessary for health are called “essential fatty acids.” Choose excellent sources of these, such as some nuts (walnuts) and seeds (flax seeds). Make a Waldorf salad with apples, celery, walnuts, and low-fat dressing!

And the research says...

Animal and human trials have shown that soyfoods, more specifically isoflavones, can help improve cognition and memory. Because there has been considerable curiosity in the possible beneficial effects of estrogen supplementation on memory, particularly in postmenopausal women, it is not surprising that there is recent interest in the effects of soyfoods on memory and cognition.

The results of a recent study show that men, as well as women, can show cognitive benefits from a high soy diet. In a double-blind, placebo-controlled study, both male and female men and women were divided into two groups: one following 10 weeks of a high soy diet (100mg/day total isoflavones), and one following 10 weeks of a low soy diet (0.5mg/day). Results showed that ***both men and women in the high soy group showed significantly greater improvements in episodic memory and in a task measuring frontal lobe function.***



A 2008 study was conducted to see if soy intake promotes weight loss for women. Researchers investigated the relationship between "lifetime soy consumption" and body mass index for 1,418 women in Hawaii through use of a questionnaire and lifetime anthropometric measures, regular diet and soy intake. ***Results showed that higher soy consumptions in adulthood is related to a lower BMI;*** however, this association was only significant for Caucasian and postmenopausal women.



Type 2 diabetes is highly prevalent in North America and has been associated with increased risk of cardiovascular disease. It is possible that soy protein plays a role in the reduction of blood lipids which are related to cardiovascular disease risk.

In 2009, a study was published in the Journal of Nutrition that sought to determine the effect of soy protein consumption on blood lipids in adults with diet-controlled type 2 diabetes. Participants with type 2 diabetes consumed both soy protein isolate and milk protein isolate for 57 day periods, each separated by a 28 day washout period. Blood samples were collected and analyzed for blood lipids and apolipoproteins. Compared to the trials with milk protein isolate, ***the participants who consumed soy isolate experienced reduced serum LDL cholesterol, reduced LDL to HDL cholesterol ratio and reduced apolipoprotein B to apolipoprotein A ratio, all of which are beneficial for reducing the risk of cardiovascular disease in adults with type 2 diabetes.***

Nutrition in the NEWS!

BusinessWeek

An April, 2011 Businessweek report says that Vanderbilt University Medical Center researchers now say soy foods are "OK" for breast cancer survivors.

Many breast cancer survivors fear that eating a diet high in soy may increase the likelihood of their cancer coming back. The worry lies in that soy foods can act as weak estrogens and breast cancer is an estrogen-receptor positive cancer, requiring estrogen to grow. Dr. Xiao Ou Shu, however, says otherwise. Shu conducted a study in which she compared women who ate many soy foods to women who ate very minimal amounts of soy. She found that women in the upper 10th percentile group for soy intake *actually had a 35% reduced risk of cancer reoccurrence.*

It's important to note that these findings are based on actual soy foods (like soybeans, tofu, and soy milk), NOT soy supplements. Studies with soy supplements have not yet been tested.

Visit www.businessweek.com for complete article.



Visit the following websites for more information on the benefits of soy and healthy eating:

Soyfoods Association of North America

www.soyfoods.org

American Soybean Association

www.soygrowers.com

Michigan Soybean Association

www.michigansoybean.org

American Dietetic Association

www.eatright.org

MyPyramid: Steps to a Healthier You (United States Department of Agriculture)

www.mypyramid.gov

SoyJoy Fruit and Soy Bars

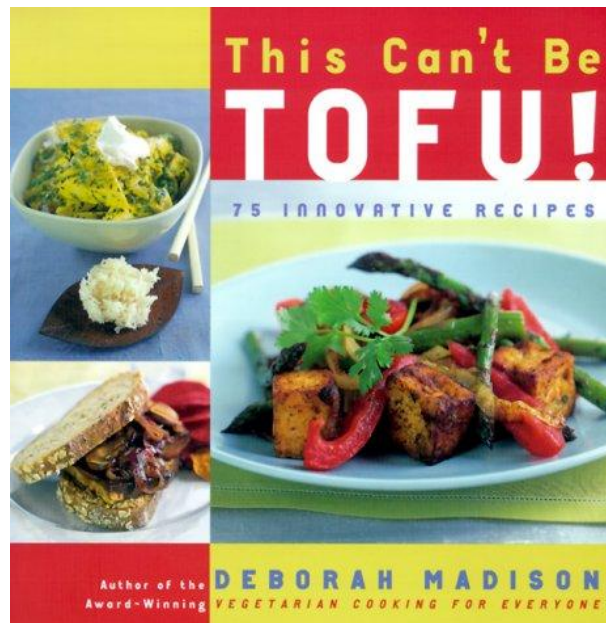
www.soyjoy.com

SoyConnection (brought to you by the United Soybean Board)

www.soyconnection.com/recipes

Looking for more soyfoods ideas? Start here!

Enter your name during the month of May at the "Healthy Eating Tip of the Month" board in the UH cafeteria for a chance to win Deborah Madison's ***This Can't Be TOFU!***



*“Now, in ***This Can't Be Tofu!***, award-winning and bestselling author of ***Vegetarian Cooking for Everyone*** Deborah Madison shows how to make tofu taste great in 75 stir-fries, sautés, and other dishes.*

Pan-Seared Tofu with Garlic, Ginger, and Chives, Vietnamese Spring Rolls, Curried Tofu Triangles with Peas, and Pineapple and Tofu Fried Rice are just some of the delicious recipes in this inspired collection.”

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May 2011: "The Joys of Soy!"

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