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Sweet Tempeh-tation: Making the Most of a Nutritious Soy Food

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Soy has been a hot topic for the past few years. Who ever thought a humble little legume could generate such controversy? Like any food, or almost anything else in life, there are pros and cons when it comes to soy's impact on our health. Moderate amounts of soy in the diet, like anything else in moderation, can be good for the body.

Unfortunately, widespread proclamations of soy's magic health benefits, loudly trumpeted by the soy industry, has led to an explosion of soy-based foods: soy protein bars, meat alternatives, and dairy alternatives now flood the aisles of our grocery and health food stores. This over-abundance of soy in our diet has the potential for serious negative health effects.

As early as 2200 BC, the Chinese have farmed soybeans, and traditionally they were held somewhat sacred as both food and medicine. That said, and despite what you may have heard, the amount of soy products consumed in Asia is not nearly as high as you might expect. Soy has traditionally been a food for the poor, and people would most often prefer other sources of protein, like fish, eggs, or meat if they were available.

A detailed study of Chinese diets found that legume consumption ranged from 0 to 58 grams per day, with an average of 13 grams. According to the researchers, about two-thirds of this was supplied by soybeans, giving average consumption of about 9 grams of soy products per day (Chen J, et al. *Diet, Lifestyle and Mortality in China. A Study of the Characteristics of 65 Counties*. Oxford University Press, Cornell University Press, China People's Medical Publishing House; 1990). Isoflavone content in a diet like this is estimated to be about 3 mg per day based on an average of 30 mg total isoflavones per 100 grams of tofu (*USDA-Iowa State University Database on the Isoflavone Content of Foods*; 1999).

The FDA recommended amount for adults is 25 grams of soy protein isolate per day. This provides about 24 mg isoflavones per day based on a total isoflavone content of 97 mg for 100 grams of soy protein isolate (*USDA-Iowa State University Database on the Isoflavone Content of Foods*; 1999). That's a lot higher than what is traditionally consumed in China.

When investigating traditional diets, you'll often find an underlying science—not always fully realized or articulated in Western scientific terms—in how specific foods are prepared and combined. The soybean is no exception. Traditional Asian soy foods are, with few exceptions, almost always fermented in some way. In addition, one should consider the health benefits of mineral-rich sea vegetables, which almost always accompany soy in traditional Asian meals.

To obtain the health benefits of soy foods, I recommend avoiding or at least minimizing intake of unfermented soy products. Unfermented soy contains high levels of phytic acid, which has been shown to reduce assimilation of calcium, magnesium, and other important minerals. It also contains trypsin inhibitors, which interfere with protein digestion. Examples of unfermented soy include tofu, soy protein isolates, textured soy protein, soy cheese, soy milk, and a real nasty one, hydrolyzed soy protein. (That one just *sounds* like it is chemically processed. Guess what? It is!)

Fermented forms of soy are far better from a health viewpoint. The fermentation process partners the soy up with beneficial microorganisms; they undergo a natural process which helps remove the enzyme inhibitors from the soy and makes its proteins more bio-available to our body. Soy fermentation processes have been used by Asian cultures for thousands of years, and I believe it is the fermented soy products that are a major reason why Asian populations, living a relatively traditional lifestyle, have such strong longevity and overall health.

You probably already know that when soy is partnered with a beneficial microorganism, the natural fermentation process naturally increases the bioavailability of the soy's proteins and isoflavones, which are a vital facet of health's benefits. For a really good review of the benefits and potential hazards of fermented versus unfermented soy, I recommend looking into the Weston A. Price Foundation website (www.westonaprice.org). The section entitled *Soy Alert!* is particularly informative.

Examples of fermented soy products include *natto*, a Japanese food, which ferments via the *Bacillus subtilis natto* bacteria. Aside from producing vitamins, minerals, amino acids, and other nutrients, the natto bacteria also produces a strong enzyme now being used to dissolve blood clots and reduce heart attacks (for a related article, visit www.holisticprimarycare.net and see, "In the Thick of It: Blood Viscosity Emerges as Key Heart Risk Factor," Spring 2007).

Miso is another form of fermented soy, which many non-Asian Americans have discovered by dining in Japanese restaurants. Though miso is making some headway into the kitchens of non-Asian Americans, it hasn't quite earned the status of "staple food." In Japanese households, miso is a basic food group. Many Japanese are accustomed to drinking a cup of miso soup first thing in the morning. In my experience, this is a great way to start the day.

One of my favorite functional fermented foods derived from soy is *tempeh*. No, I'm not talking about the city in Arizona. That's *Tempe*, which happens to be a great place for natural, holistic medicine. I'm talking about that extremely valuable fermented soy cake which, though widely available and quite inexpensive, is sadly under-appreciated.

A dietary staple in China and Indonesia for hundreds of years, tempeh is made from soybeans that undergo a natural fermentation process using the *Rhizopus* mold. This nutritious, easily digestible protein can be prepared numerous ways, and it incorporates well into many standard recipes calling for meat products. For some reason, though, tempeh's gotten a bad rep with a lot of people.

Far too frequently, I have met someone who claims to have tried tempeh, but makes a face when asked about the taste. When digging a little further, I find that most often, the tempeh they tried was not prepared correctly, leaving a dis-taste for the food in the person's mouth. Just as there is a two-step process with regard to fermentation, it usually takes two steps to make tempeh taste terrific.

My usual first step in preparing tempeh is to cut the tempeh cake into bite-sized chunks and simmer them in a mixture of water, garlic, *shoyu* (a fermented Japanese version of soy sauce (most common soy sauce products are unfermented, unless so indicated), ginger, and whatever other spices I decide to throw in ... maybe a little cayenne pepper. By simmering the tempeh for a short time under low heat, you infuse the flavors of the mixture into the soybean. You can then grill or fry it, or eat it as is.

Tempeh can be stir-fried, baked, or steamed. It is a very durable and flexible food, and there are numerous recipes for tempeh marsala, tempeh kabobs, tempeh burgers, and more. If ever there was a healthy plant-based food that simply beckons for wider discovery, tempeh is it! If you're not already familiar with it, try it out. And recommend it to your patients. It is far better for them than a lot of the highly-processed new-fangled unfermented soy gloop that's overtaken the health food industry in recent years.

Just remember, it takes two (steps) to tempeh!

Tempeh-ting Recipes

Graciously provided by the Natural Gourmet Institute and Chef Melanie Ferreira. For more information about the Institute, visit www.naturalgourmetschool.com.

BASIC TEMPEH (yields 4 servings)

Ingredients:

3 tablespoons of Shoyu (fermented soy sauce)
4 slices of Ginger
1" strip of Kombu (a mineral rich sea vegetable)
½ teaspoon Sea Salt (Celtic brand preferred)
8 oz package of Tempeh, cut in half crosswise
3 cups water

Procedure:

1. In a medium saucepan, combine Shoyu, Ginger, Kombu, Sea Salt, and Tempeh. Pour enough water to cover Tempeh (about 3 cups). Cover pan and bring to a boil. Reduce heat and simmer about 25 minutes.
2. Reserve cooking liquid for use in other recipes.

TEMPEH SCALOPPINE (yields 4 servings)

Ingredients:

8 oz package of Tempeh, simmered in marinade (see Basic Tempeh recipe)
¼–½ cup unbleached White Flour (for dredging)
6 tablespoons extra virgin Olive Oil
1½ cups reserved liquid (from Basic Tempeh recipe)
½–¾ cup White Wine
2–3 oz sliced fresh Shiitake and/or Crimini Mushrooms
1 clove Garlic, minced
1 teaspoon fresh Basil, chopped
1 teaspoon fresh Oregano, chopped
1 teaspoon fresh Thyme, chopped
1–2 tablespoons Lemon Juice
2 tablespoons Parsley, chopped for garnish

Procedure:

1. Prepare tempeh using Basic Tempeh recipe. Reserve liquid.
2. Cut Tempeh in half widthwise, on a diagonal. Slice each half on the diagonal into 6–8 thin slices.

3. Dredge each slice in flour. Shake off the excess flour.
4. In a medium skillet, heat oil over medium-high heat and fry tempeh until golden on both sides. Drain any excess oil if necessary.
5. Add to the tempeh the reserved liquid and wine. Cover and bring to boil.
6. Add sliced mushrooms and garlic, reduce heat to low, and cook covered until mushrooms release juices and become tender.
7. Add herbs, simmer until liquid thickens (needs to be saucy)
8. Remove from heat and stir in lemon juice to taste.
9. Garnish with parsley.
10. Serve with rice, pasta, or saut'ed greens.

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