



The Soy Story: Explaining the Miracle

In February 1994, some 250 scientists, nutritionists, and health-care professionals gathered in Mesa, Arizona, to hear the latest findings on the prevention and treatment of cancer and heart disease. The group included researchers from the Hirosaki University School of Medicine in Japan, the University of Helsinki in Finland, and the University of Milan in Italy. They were joined by colleagues from major U.S. research organizations, including the National Cancer Institute and the Harvard School of Public Health. Heart specialists reported on a groundbreaking treatment for lowering cholesterol that is as effective as medication but without any unpleasant or dangerous side effects. Cancer researchers talked about special compounds that can inhibit enzymes that stimulate tumor growth, deactivate potent hormones that can promote cancer, and normalize cancer cells. What made this conference unique is that these scientists were not talking about some fantastic drug of the future or some rare chemical. They were talking about a foodstuff that is harvested in vast amounts in the United States and that is inexpensive and readily available at supermarkets and natural food stores. They were talking about soybeans and soybean products.

In recent years, scientists have isolated compounds in plant foods — phytochemicals — that may protect against disease in a variety of ways. Some can lower cholesterol levels, thus reducing the risk of heart disease. Others are antioxidants that protect cells from free radicals — unstable oxygen molecules that can damage normal cells. Still others can deactivate carcinogens (cancer-causing substances) or boost the immune system, enhancing the body's ability to ward off infection. Scientists have dubbed these plant chemicals *nutriceuticals* because of their potential health benefits.

It's not surprising that plants would be such a rich source of healthful compounds. Centuries before the age of antibiotics, natural healers and herbalists used plants to treat a wide variety of illnesses. In fact, nearly half of all the thousands of drugs that are commonly used and prescribed today are either derived from a plant source or are chemical imitations of a plant compound.

Soybeans in particular are abundant in many different types of phytochemicals, some of which are unique to this food. They include:

- **Isoflavones** — Compounds that are similar to natural estrogen but with one important difference: these plant estrogens may help prevent hormone-dependent cancers. (Some scientists believe that they may even prevent hot flashes in menopausal women!)
- **Genistein** — A compound that may stop the spread of some forms of cancer at its earliest stages, and may even help to prevent heart disease. Researchers are investigating genistein as a treatment for prostate cancer.
- **Protease Inhibitors** — Described by one researcher as a "universal anti-carcinogen," these compounds may block the action of cancer-causing enzymes.
- **Phytic Acids** — Compounds that have been shown to inhibit the growth of tumors in laboratory animals.

Although much more research needs to be done, and much about soy still needs to be learned, many leading scientists agree that there is strong evidence that soy may protect against cancer and other diseases that are virtual epidemics in the West. Soy's possible role as a cancer fighter has attracted the attention of the National Cancer Institute, which has given top priority to investigating the role of soy as a potential protector against many forms of cancer.

The Asian Advantage

Although the United States is the world's leading producer of soybeans, Americans are not the world's leading consumers of this food. Far from it: half of the U.S. soy crop is shipped overseas and most of what is kept is used to make cooking oil or animal feed. In many parts of Asia, however, soy foods are a dietary staple. For example, the average Japanese person consumes 50 to 80 grams (roughly 2 to 3 ounces) of soy food daily, in many different forms ranging from traditional bean curd or tofu to miso — a bean paste used for seasoning and in soups—to soy milk—a delicious beverage. In contrast, the average American eats a minuscule 5 grams of soy food daily, mostly in the form of oil hidden in foods such as margarine, salad dressings, and baked goods or as protein extenders in processed foods such as frozen dinners or diet drinks.

Does eating soy foods really make a difference? Judge for yourself by comparing Japanese and American health:

1. Japanese people have the longest life span of any nationality.
2. The Japanese have much lower rates of colon cancer and lung cancer than Americans.
3. Japan has the lowest rate of death from heart disease for men in the world, and the second lowest for women.
4. American women are four times more likely to die from breast cancer than Japanese women.
5. American men are five times more likely to die from prostate cancer than Japanese men.

Although the Japanese diet contains other foods that may offer protection against disease — for example, it tends to be lower in fat and higher in fiber than Western cuisine — many scientists believe that frequent consumption of soy

foods is a major factor in Japanese health and longevity. Many researchers also believe that simply by adding as little as 2 ounces of soy food daily in an already healthful diet will provide Westerners with protection against "Western diseases" such as cancer and heart disease.

In *Earl Mindells' Soy Miracle*, I review what I've learned from interviews with leading scientists who are researching the various compounds in soy, and from analyzing the hundreds of scientific articles that have been written about this amazing food.

Earl Mindells' Soy Miracle, will introduce Westerners to the potential benefits of soy foods, and show how easy it is to incorporate soy foods into your daily diet. For example, we all have seen tofu in Japanese and Chinese restaurants and even in supermarkets, but few of us know what to do with it. This book will introduce you to the many different soy products that are readily available in grocery and natural food stores, and will explain how they can become an important — and enjoyable — part of your daily menu. I will show you how some soy products can serve as tasty and healthful substitutes for fatty foods such as cream, meat, and cheese. I will show you how soy foods can be incorporated into virtually any cuisine, from Italian to Tex-Mex. I will show you how soy products can be used to make luscious creamy desserts and shakes that are virtually fat-free and healthful. I will show you can get more soy in your life without giving up the foods or flavors that you enjoy. I consulted with dieticians and cooks who are specialists in using soy foods, and they have provided the recipes in this book.

Although soy may be a wonder food, it is still only one food that should be included in a varied, well-balanced diet. When appropriate, I discuss other foods and nutrients that along with soy can promote better health.

Soy Through the Ages

- The Chinese were the first to use soybeans as food. Legend has it, around 1500 B.C. two Chinese warlords got hopelessly lost in a northern Chinese desert. Starving, they survived by eating the hard "peas," or seeds, from soybeans. By around 1100 B.C., soybeans were being cultivated in east-central China and soon became a staple of the Chinese diet. The Chinese showed their high regard for the soybean by naming it *ta tou*, which means "greater bean."
- Bean curd made from soybeans (known as tofu) has been used for several centuries in traditional Chinese medicine. Externally, it was placed on sores and ulcers to promote healing; internally, it was used in hot soups to treat colds.
- The soybean was introduced to Japan around 100 A.D. and soon spread throughout other Asian countries. Although the Chinese may have been the first to use soy, the Japanese were the ones to develop the plant's full potential as a food source.
- Soy found its way to Europe at around 1500 A.D. Soy historian, Dr. Theodore Hymowitz, credits Benjamin Franklin with bringing soybean samples back to the United States from Paris's Jardin des Plantes. Whether or not this tale is true, by the early nineteenth century, soybeans were planted commercially in the United States.
- During the Civil War, soybeans were "brewed" as a coffee substitute. In 1904, George Washington Carver, who found many commercial uses for the peanut, began studying the soybean at the Tuskegee Institute in Alabama.
- The United States produces half of the world's soybeans, making it the country's second biggest cash crop; there are 440,000 soybean farmers producing 2 billion bushels of soybeans a year. In fact, the United States exports much of its soybean crop to Japan and other Asian countries.
- In the 1970's, tofu became popular as an "environmentally friendly" food alternative to beef. People who were concerned about worldwide starvation and about conserving the earth's resources advocated tofu as a cheaper and more efficient source of protein than animal products. Popular books such as Frances Moore Lappe's *Diet for a Small Planet* and William Shurtleff and Akiko Aoyagi Shurtleff's *The Book of Tofu* promoted vegetarian, soy-based diets. Their argument was convincing: Beef cattle grazing on one acre of land can produce enough meat to sustain a person for seventy-seven days. If planted with soybeans, that same acre can produce enough protein to sustain a person for almost two and a half years. Indeed, many environmentally concerned people switched from meat to tofu, or at least cut down on meat consumption for the sake of the earth.
- Today many more people are switching to tofu and other soy products, not to save the world, but to save themselves from modern-day plagues such as cancer and heart disease. People are turning to soy foods out of concern for their health, and the marketplace is responding to these concerns.
- According to the Soyfoods Center, a group that tracks soy use worldwide, there are a record 500 new soy foods coming on the market each year, adding to the 12,000 soy foods already available.