

+ REFERENCES

+ MENOPAUSE RELIEF & OSTEOPOROSIS

+ HEART HEALTH

+ CANCER PREVENTION

+ SOY FOR GOOD HEALTH



ABOUT USB

The United Soybean Board (USB) is a farmer-led organization comprised of 64 farmer-directors. Working with independent academic researchers affiliated with the National Institutes of Health (NIH) and academic institutions, USB has invested millions of dollars into health and nutrition research related to soy. Soybean farmers take pride in producing one of the healthiest food crops in the world.

ONLINE RESOURCES

Help your patients make the soy connection for better health. Access peer-reviewed, fully referenced technical bulletins on a variety of health topics, plus delicious healthy recipes, through USB's Web site. For more information, please visit: www.soyconnection.com



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Soy has earned a great deal of praise for its role in a healthy diet. Soy is a complete protein,¹ and soyfoods are rich in vitamins and minerals including folate, potassium and, in some cases, fiber.²

Evidence indicates that dietary protein is more satiating than fat and carbohydrate, potentially beneficial for weight management.³ Dietary protein is also needed for muscle development in response to strength training.⁴⁻¹¹ Therefore, patients need a variety of healthy options such as soyfoods and other legumes to increase protein intake.

In the past 15 years, soyfoods have attracted the attention of research scientists around the world for health properties beyond basic nutrition.

HOW MUCH SOY?

Clinical and epidemiologic evidence suggests a reasonable intake of soyfoods is two to three servings daily.¹²

Though more research is needed, findings suggest that soyfoods may reduce risk of chronic diseases including coronary heart disease, osteoporosis, certain cancers and help to alleviate menopausal symptoms.

Enhance compliance by suggesting a variety of soyfoods. The family cook can add tofu and edamame to recipes, while patients in a hurry can drink a glass of soymilk or zap a veggie burger in the microwave.



Governmental health agencies and research laboratories around the world have investigated soy's potential to reduce cancer risk, motivated by two initial observations:

- + Chemopreventive compounds in soy.¹³
- + Low rates of certain cancers in soyfood-consuming countries in Asia.¹⁴

BREAST CANCER

Epidemiologic research suggests just one to two daily servings of soyfoods during childhood and/or adolescence may reduce breast cancer risk during adulthood up to 50%.¹⁵

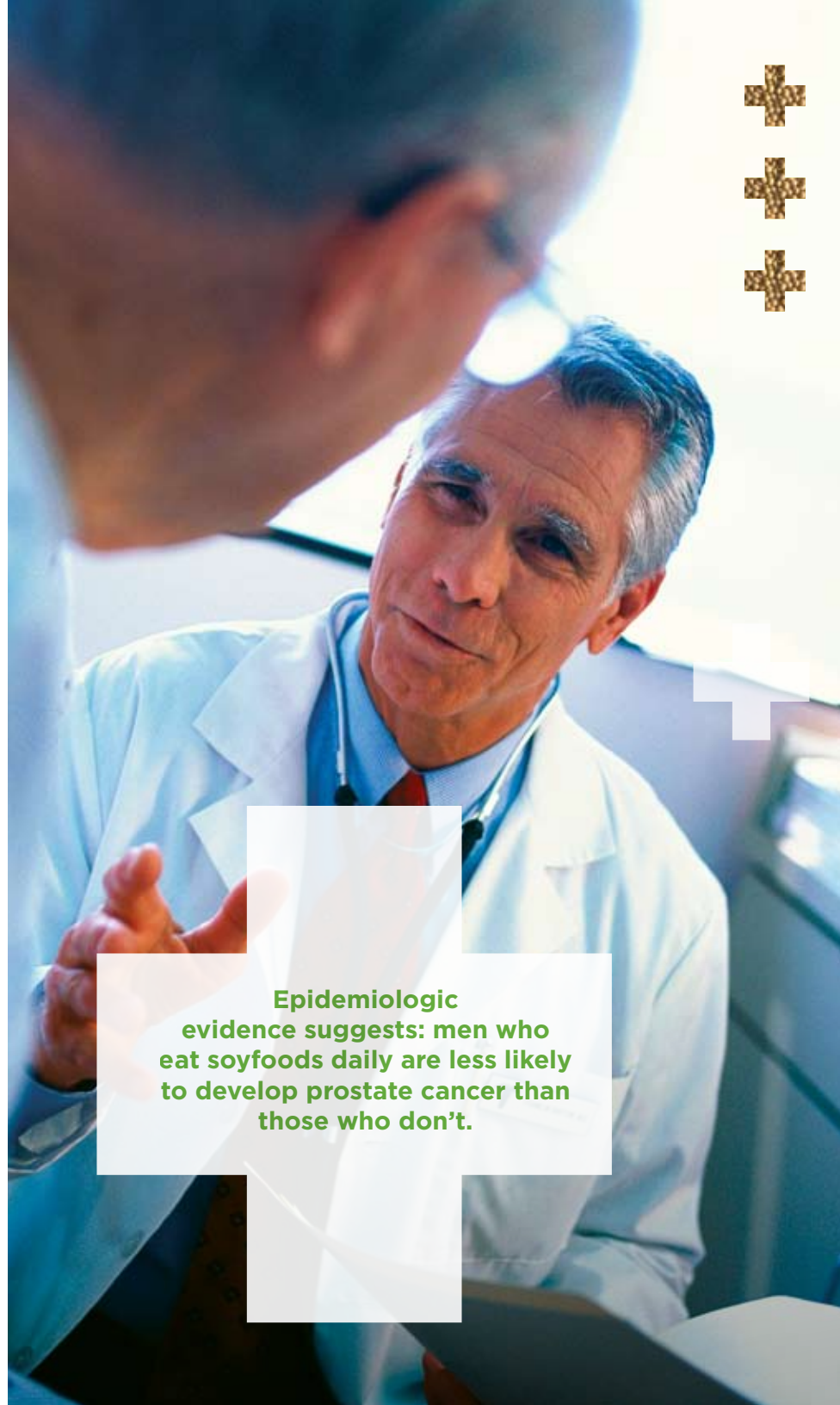
Early soy intake's ability to reduce breast cancer incidence later in life is one of the most exciting hypotheses in the diet-cancer field.¹⁶

Scientists have identified a possible mechanism for this: When isoflavones are given to young animals, the cells in their mammary glands become permanently more resistant to becoming cancer cells.¹⁶

PROSTATE CANCER

Rodent studies indicate that soy protein and isoflavones suppress development of lab-induced prostate cancer.¹⁷ Other studies show soy protein and isoflavones may inhibit the growth of existing tumors.

Epidemiologic evidence suggests that men who eat soyfoods daily are less likely to develop prostate cancer than those who don't.¹⁸ Preliminary research also indicates that soy protein and isoflavones may slow the rise of prostate specific antigen (PSA) levels in men diagnosed with prostate cancer.¹⁹



Epidemiologic evidence suggests: men who eat soyfoods daily are less likely to develop prostate cancer than those who don't.

CHOLESTEROL REDUCTION

The American Heart Association has recognized soyfoods for their role in an overall heart-healthy diet.²¹

Soy protein directly lowers blood cholesterol levels, a major risk factor for coronary heart disease (CHD). In 1999, after reviewing significant clinical research, the U.S. Food and Drug Administration approved a health claim for soy protein and coronary heart disease.²⁰ Similar claims have been approved in at least eight other countries.

Recent analyses indicate soy protein lowers LDL-cholesterol from 3 to 5%.^{21, 22} Over a period of many years, each 1% decrease in LDL can reduce CHD disease risk from 2 to 4%.^{23, 24} While not replacing pharmacological interventions, this could translate into significant CHD reduction at the population level.

SOY MAY FAVORABLY AFFECT SEVERAL HEART DISEASE RISK FACTORS.

OTHER RISK FACTORS

Soy may favorably affect other CHD risk factors, via the following actions:

- + Modestly raising HDL-cholesterol²²
- + Lowering blood levels of triglycerides²²
- + Making LDL-cholesterol less atherogenic²⁵
- + Directly improving the health of coronary arteries, via soybean isoflavones (phytoestrogens)^{26, 27}



A recent epidemiologic study found that Chinese postmenopausal women who consumed the most soy were 86% less likely to report a heart attack compared to women who consumed the least soy.²⁸



Southwest Pork with Soy Succotash

OSTEOPOROSIS

As rich sources of high-quality protein, soyfoods can help promote bone health.²⁹ In addition, the calcium in fortified soymilk is well absorbed³⁰ and the skeletal effects of soy isoflavones are of interest.

Over 30 clinical trials have examined the effects of isoflavone-rich soyfoods or isoflavone supplements on bone mineral density in postmenopausal women. Generally, these studies indicate reduced bone loss in response to isoflavone exposure.³¹

These results are consistent with epidemiologic research showing that Asian women who consume soy tend to have stronger bones. The only study to examine fractures found that Chinese women who consumed the most soy were one-third less likely to report a fracture compared to women who consumed the least soy.³²


Three large, long-term clinical trials examining soy's ability to prevent bone loss are underway, funded by the U.S. government at a cost of more than \$10 million.

MENOPAUSE

More than 40 clinical trials have examined the ability of soyfoods or isoflavone supplements to alleviate hot flash frequency and/or severity.³³⁻³⁶

Although the results from these trials are inconsistent, they are sufficient to recommend that women try isoflavone supplements or soyfoods for menopausal symptom relief. Furthermore, research has identified several reasons for inconsistent results:

- + Hot Flash Frequency: Women experiencing at least four to five hot flashes per day may be more likely to benefit than those who have only one or two hot flashes per day.^{34, 36}
- + Genistein Content: High-genistein (the main isoflavone in soybeans) isoflavone supplements appear most effective.³⁵
- + Isoflavone Metabolism: Efficacy may depend on isoflavone metabolism, which varies markedly among individuals.³⁷



During menopause, women who find soy alleviates their hot flash frequency or severity generally feel an improvement within just a few weeks.

Researchers publish hundreds of articles on the health attributes of soyfoods and soybean components in scientific and medical journals each year.

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