



CDC's Third National Report on Human Exposure to Environmental Chemicals

Spotlight on Phytoestrogens

Phytoestrogens are naturally occurring chemicals found in many plants used as foods. These chemicals may work in the body like a weak form of the hormone estrogen. Two major groups of phytoestrogens found in people's diets are isoflavones and lignans. Sources of isoflavones include soybeans, chickpeas, and soy-based products. Lignans are found in oil seeds, such as flaxseed; cereal bran; and legumes.

How People Are Exposed to Phytoestrogens

All people are exposed to phytoestrogens through their diets.

How Phytoestrogens Affect People's Health

Because Asian populations tend to eat diets that are rich in soy-based food, much of the research involving phytoestrogens has been conducted in this population. Comparisons of Western diets with Japanese diets suggest that soy-based phytoestrogen (isoflavones) may account for lower incidence of menopausal symptoms, such as hot flashes, and osteoporosis in Japanese women than in Western women.

Researchers also are studying the protective effects of diets containing phytoestrogens on the incidence of breast cancer, prostate cancer, and heart disease. Results of these studies vary. More research is needed on possible benefits and adverse health effects.

Levels of Phytoestrogens in the U.S. Population

- For the *Third Report*, scientists tested urine samples for levels of phytoestrogens in people 6 years and older who took part in CDC's national study known as the National Health and Nutrition Examination Survey.
- In the *Third Report*, the levels of phytoestrogens are consistent with levels found in people who eat Western diets that contain grains and cereals rather than soybean products.
- Information about levels of phytoestrogens in the U.S. population is available in the *Report* at <http://www.cdc.gov/exposurereport>.

For More Information

- **Food and Drug Administration**

Soy: Health Claims for Soy Protein, Questions About Other Components:

<http://www.cfsan.fda.gov/~dms/fdsoypr.html>

- **National Institutes of Health National Research Center**

Phytoestrogens and Bone Health:

<http://www.osteo.org/newfile.asp?doc=r618i&doctype=HTML+Fact+Sheet&doctitle=Phytoestrogens+and+Bone+Health>

NCEH Pub 05-0664
July 2005

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