

The Centre for Reproductive Medicine
PO Box 20559
Nimbin NSW 2480
Australia

Maxwell Brinsmead MB BS PhD MRCOG FRANZCOG
Retired Obstetrician & Gynaecologist

Phone +61 409 870 346
E-mail max@brinsmead.net.au
Website www.brinsmead.net.au

Phytoestrogens for Menopause

Modified from the Internet Publication by the North American Menopause Society, 2000

What are phytoestrogens and how do they relate to menopause?

Phytoestrogens are naturally-occurring compounds in certain plants, herbs, and seeds that are similar in chemical structure to oestrogen and/or produce oestrogen-like effects. There is some suggestion that, in certain cultures where large amounts of phytoestrogen-containing foods are consumed, women may have fewer short-term menopause complaints and may derive other long-term health benefits as well (such as helping to prevent heart disease). Studies are currently underway to clarify their effectiveness and the amounts that would be necessary to achieve an effect.

What specific foods contain phytoestrogens?

Phytoestrogens consist of a number of types. For example, the lignan type is found in almost all cereals and vegetables, with the highest concentration in the oilseeds, especially linseed (sometimes called flax seed). The isoflavone type is most commonly found in legumes, with concentrations being particularly high in soybeans. Soy proteins generally contain high levels of two isoflavones: genistein and daidzein.

How much dietary phytoestrogen is reasonable and likely to promote health?

The average Asian diet provides about 60-100 mg of isoflavones and the average Asian woman excretes in urine about 100 times as much isoflavone metabolites as an Australian woman. Experimental studies show that the equivalent of 60-90 mg of isoflavones can improve menopausal symptoms and can reduce cholesterol levels. These levels of isoflavones provide very little or no bone benefit.

What food soy sources provide the same amount of isoflavones that are in the usual Asian diet?

Soybeans are composed of protein, carbohydrate, and fat. Most of the isoflavones are in the protein part; while the fat (oil) provides calories and the carbohydrate provides calories and may cause gaseousness. Therefore, protein-rich soy derivatives have been developed to maximize the isoflavone intake while minimizing calories.

Soybeans are widely available dried or roasted. In some cities, fresh or frozen whole soybeans are available. Tofu is a solid form of soy that is precipitated from soymilk by addition of calcium (in a way similar to producing cheese from whole milk).



There is considerable variability in isoflavone content of soybeans related to their growing conditions (the most harsh conditions produce the highest isoflavone content in the beans). There can be loss of isoflavone content if fat is extracted from soy products. For example, low-fat tofu is lower in isoflavone content and many of the "fast-food" soy products such as soy hot dogs, and hamburgers have no isoflavones.

If 30-40 grams of soy protein are eaten, 200-250 calories will be added to the diet. Thus, some adjustment of other protein and caloric sources should be made.

The following table outlines the soy products that can provide about 75 mg of isoflavones:

Product	Serve	Protein(g)	Calories
Soybeans			
Dried	1/2 cup	11	125
Fresh	1 cup	18	180
Tofu	1 cup	27	210
Soy Milk	3 cups	18	240
Isolated Soy Protein	1/3 cup	24	125

Are "natural" products better or safer?

Often certain foods and herbs (and sometimes the vitamins as well) are referred to as "natural" ways of dealing with menopause disturbances. Unfortunately, the term "natural" is misunderstood as meaning better or safer. While it is correct that these "natural" remedies are not prescription drugs, this does not mean that they are better or safer. In fact, until more studies are done to answer many outstanding questions, it is not known whether plants containing oestrogen-like compounds would be dangerous to some people. Decades of research have led to information about the potential of harmful side effects, as well as potential benefits, of prescription oestrogen drugs. These side effects are kept to a minimum by taking the lowest effective dose. It is reasonable to assume that studies now underway will discover similar side effects from intakes of phytoestrogens higher than the usual dietary intake in Asia. It is possible to take too much of many food supplements.

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