Effects of soy on health outcomes


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Citation

Authors' objectives
Soy products, including both protein and isoflavones, have been touted for a number of clinical benefits related to a putative estrogen-like effect. However, potential risks of chronic soy consumption are also of concern.

This study aims to describe the range of soy products and outcomes that have been studied, to summarize the effects of soy consumption to prevent a wide variety of medical conditions in healthy adults, and to summarize adverse events related to soy consumption.

Authors' conclusions
A wide variety of soy products and formulations have been investigated for a large number of conditions. However, a large proportion of the studies suffer from poor reporting or study design, limiting conclusions. Soy products appear to exert a small benefit on LDL and triglycerides; these effects may be of small clinical effect in individuals, although possibly large enough to have a population-wide effect. The inconsistent association between soy protein dose and effect, and the lack of association between soy isoflavone dose and effect, limit possible determination of an appropriate amount of soy product needed for lipid reduction. Soy products may reduce menopausal symptoms in post-menopausal women. The current literature does not support other effects of soy products. However, other than menopausal- and menstrual-related symptoms, no clinical outcomes were evaluated. The evidence from human studies does not suggest any worrisome adverse events beyond mild gastrointestinal intolerance. Conclusions were often limited due to small numbers of studies or heterogeneity across studies.

Given the large amount of heterogeneity and inadequate reporting, particularly related to soy protein and isoflavone dose, many questions remain as to whether specific soy products in adequate doses may be of benefit in specific populations. Further, well-conducted studies are needed to clarify the effect of soy dose on lipid parameters and to determine whether soy components other than protein or isoflavones may be responsible for the lipid effects seen.

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Address for correspondence
Center for Outcomes and Evidence Technology Assessment Program, 540 Gaither Road, Rockville, MD 20850, USA.
Tel: +1 301 427 1610; Fax: +1 301 427 1639; Email: martin.erlichman@ahrq.hhs.gov

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