Soy & Health

FEBRUARY 2006 ISSUE NUMBER 10

Soy protein and coronary heart disease

The American Heart Association (AHA) has cast doubts on whether soy-based foods and supplements lower cholesterol. Following a review of studies the AHA concluded that soy-containing foods and supplements do not significantly lower cholesterol. They also concluded that neither soy nor soy isoflavones reduce the symptoms of the menopause or prevent breast, uterine or prostate cancer. Results were mixed on whether soy prevented postmenopausal bone loss. The AHA, however, acknowledge that soy protein products are generally good foods and are good to replace other foods that are high in cholesterol. They also note that many soy products should be heart healthy because they contain a lot of polyunsaturated fats, fibre, vitamins and minerals and are low in saturated food.

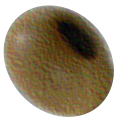
Experts at the Soy Nutrition Institute (a non-profit organisation dedicated to the improvement of the general public's well-being through support for research and communication of soy nutrition science) point out that the AHA fails to note the impact that consuming soy protein could have on the nation's health. The AHA found an overall reduction in LDL cholesterol of 3% which would translate into a 6% reduction of coronary heart disease (CHD). Other studies confirm this and there is also evidence that soy may have other benefits such as decreasing triglycerides and improving blood vessel elasticity. According to Mark Messina, internationally recognized expert on the health effects of soyfoods, "Soy protein alone is certainly not going to bring cholesterol levels down to the target goal in hypercholesterolemics (people with high blood cholesterol), but soy's modest cholesterol lowering effect by itself is beneficial. Plus, soyfoods are a good substitution for foods higher in saturated fat, which helps consumers follow an overall heart-healthy diet."

To read the AHA statement and the SNI response visit the websites: <http://www.americanheart.org/presenter.jhtml?identifier=9181> and <http://www.soyfoods.org/> respectively.

In this issue

CERHR reports published

The Center for the Evaluation of Risks to Human Reproduction in the USA (part of the National Toxicology Program) has published, for consultation (deadline 1 March 2006), two draft reports on The Reproductive and Developmental Toxicity of (1) Soy Formula and (2) Genistein. An Expert Panel will meet on 15-17 March in Virginia, USA to review and revise the reports, reach conclusions, and identify any gaps and research needs. Final reports will be published on the Center's website.



Copies of the draft reports are available at <http://cerhr.niehs.nih.gov/>.

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French edition of 'Eat to Live' published

A French translation of Sue Radd and Dr Ken Setchell's highly successful book, 'Eat to Live', has been published. A great read and useful tool for health professionals who use it as a quick reference on 'all things soy', 'Eat to Live' includes tables with isoflavone analyses of foods and supplements, 50 recipes, and a chapter on frequently asked questions.

Sue Radd is an international nutritionist and Accredited Practising Dietitian who has a special interest in soy and Dr Kenneth Setchell is one of the pioneers and world leaders in the scientific field of soy and human health.

The French edition is called 'Le Grand Livre des Aliments Protecteurs' (or 'The Great Book on Protective Foods') and is available (price 33 Euros) from French bookshops and from <http://www.editionslabussiere.com/catalog/>.

The book is now published in several countries including Australia, New Zealand, UK/Ireland, Korea (translated into Korean) and France (translated into French). For those who wish to obtain a copy of the English version visit <http://www.gillmacmillan.ie/> or <http://www.amazon.co.uk/>.

Health effects of natto to be explored

The National Cardiovascular Centre (NCC) in Japan is to conduct a survey on the preventive effects of eating natto, a traditional Japanese fermented soyfood, on lifestyle related diseases. The survey, which will be undertaken in cooperation with a town in western Japan, aims to investigate whether nattokinase, an enzyme extracted from natto, reduces the risk of lifestyle diseases such as heart disease. A total of 80 men and women in the town will participate in the survey eating 30g of natto every morning for 4 weeks and the NCC will examine whether fermented food has a role in lowering cholesterol levels. The people in the survey will be aged between 20 and 79 and will have relatively high cholesterol levels and blood pressure.

Soy sauce-based supplement helps alleviate allergic symptoms

A Japanese soy sauce manufacturer has launched a proprietary supplement which claims to help alleviate allergic symptoms. The company, Higashimaru Shoyu, says that 70% of customers who have bought the supplement felt that their hay fever symptoms had improved after taking the supplement.

Consumers more receptive to ingredient brands

Ingredient manufacturers are devoting more resources to communicating directly with consumers. Although there is a general lack of trust from consumers reports suggest that this can be overcome if the consumer recognises and trusts the brand of the ingredient. Ingredient manufacturer, Cargill, whose brands include Corowise (soy phytosterols), Prolisse (soy protein isolate) is following this approach believing that the brand adds an element of exclusivity and much value to the end product. Criteria for using the brand include a healthful meaning behind the host brand, which should be a leader in its field, adherence to quality and ethics and regulatory diligence. A good working relationship between the consumer brand team and the ingredient brand team is a key.

3 Healthier soybeans

Researchers at the US Agricultural Research Service (ARS) are working on a healthier soybean that contains higher concentrations of compounds, called glyceollins, which have been shown, in laboratory studies, to have a protective effect on breast cancer cells. The normal concentration of glyceollins in soybeans is very low since the compounds are only produced by soy as a defence mechanism from disease or infection which is not common in today's clean disease-free soy fields. The methodology to produce the glyceollin-rich soybeans involves challenging just-germinated soybeans with the fungus *Aspergillus sojae*. The soybean responds as if it is under attack and produces the glyceollins as a defence mechanism.

Toxicology studies involving monkeys for glyceollins are ongoing with no negative effects reported so far. A US patent is pending while several research articles have been submitted to peer-review journals concerning toxicological tests. The ARS scientists are sharing the glyceollins with collaborating medical researchers and are currently looking for ways to induce glyceollin production on a large scale.

Soyfoods without beany flavour being developed

Scientists at the University of Georgia in the USA have developed new soybean food products that have less of a beany taste than most soybean products. Using a new variety of soybeans developed by the National Agricultural Research Organisation in Japan, which is naturally free from the enzyme lipoxygenase which produces the beany flavour in some products, the scientists are now looking for food industry participation to bring the new products to the market place.

Products made from the L-Star soybeans that are currently under development include a new soy milk, an instant soy drink and a tofu product. The new L-Star soy milk differs from traditional soy milk in that it is made by grinding the soybeans with water but not filtering out the solids. The research is funded by the American Soy & Tofu Corporation and the US Department of Agriculture's Federal State Marketing Improvement Program.

Japan issues safety data on isoflavone intake

Japanese food safety authorities have agreed that in addition to the consumption of soy isoflavones through foods, a daily intake of around 30mg of isoflavone via supplements is safe. The Japanese panel concluded that consumers could safely consume up to 70-75 mg of isoflavones from foods and supplements. Typically, it is estimated that the Japanese consume less than 70 mg of isoflavones in their diet.

Call for poster abstracts

Soy & Health 2006 - Clinical Evidence - Dietetic applications
12 -13 October 2006

Researchers are invited to submit abstracts (max 300 words) for poster presentations for this conference. Visit <http://www.soyconference.com> for the latest information or contact info@soyconference.com

4 Type of soyfood consumed affects bioavailability of isoflavones

A recent study published in the Journal of Nutrition determined the bioavailability of soy isoflavones in soy milk, tempeh and textured soy protein. Healthy adults (both men and pre- and postmenopausal women) consumed each of the soyfoods in a random cross-over trial conducted by the Universities of East Anglia and Surrey in association with the Children's Hospital Medical Center in Cincinnati. The researchers examined the effect of age, gender, and the food matrix on the bioavailability of isoflavones. The dose administered to each individual as a single dose was 0.44mg/kg body weight to account for differences in daidzein and genistein contents between the diets. Serum isoflavone concentrations in all individuals and groups increased rapidly after the ingestion of each soyfood. As expected, genistein concentrations exceeded daidzein concentrations in serum. Gender differences in peak concentrations of daidzein were observed, with higher levels in women. Consumption of tempeh resulted in higher serum peak levels of both daidzein ($p<0.001$) and genistein ($p<0.01$) than consumption of textured protein, but soy milk was absorbed faster and resulted in quicker peak serum levels of isoflavones.

Cassidy *et al*, J Nutr 2006; 136:45-51, 2006 (<http://www.nutrition.org/cgi/content/abstract/136/1/45>).

Soybean ferritin may help iron deficiency

According to an American study purified ferritin from soybeans is easily absorbed by the body and could provide a new way of increasing iron levels in low-iron populations. Dietary ferritin is an underestimated source of bioavailable iron and plant ferritin, the most common dietary ferritin, has not been studied. This new research looked at iron absorption among 16 women eating a standardised meal, containing either ferrous sulphate or purified soybean ferritin. In a randomised cross-over study iron levels were measured after 28 days of eating the standardised meal. The study found no significant difference in either whole body or red blood cell levels of iron for ferrous sulphate or the soybean ferritin. The authors concluded that iron from soybean ferritin is well absorbed and may provide a model for novel, utilizable, plant-based forms of iron for populations with a low iron status.

Lonnerdal *et al*, Am J Clin Nutr 2006; 83 103-107 (<http://www.ajcn.org/cgi/content/abstract/83/1/103?etoc>).

Genistein alters ovarian differentiation in mice

A study conducted by researchers at the National Institute of Environmental Health Sciences (NIEHS) in the USA, together with Syracuse University, found that genistein alters the ovaries of mice during their early development. Female mice were injected genistein during the first 5 days of their life and were found to have reduced fertility or to be completely infertile. The treated mice appeared to have a high percentage of egg cells (oocytes) remaining in clusters. Based on previous studies the researchers surmise that that these egg cells are less likely to be fertilised. The researchers conclude that genistein exposure in mice during development alters ovarian differentiation by inhibiting oocyte breakdown and attenuating oocyte cell death. It is unclear, however, how these animal studies would translate to the human population as there are species differences between mice and humans in the metabolism of isoflavones and the study uses high levels of injected genistein (up to 50mg/kg per day) not soyfoods as consumed.

Jefferson *et al*, Biol Reprod 2006; 74:161-168 (<http://www.biolreprod.org/cgi/content/abstract/74/1/161>).

5 Phytoestrogen-rich foods may protect against prostate cancer

New findings from Sweden suggest that men who have a diet rich in soy products, beans and sunflower seeds have a much lower risk of contracting prostate cancer. Scientists at the Karolinska Institutet's Department of Medical Epidemiology and Biostatistics studied the correlation between prostate cancer and phytoestrogens in a large population based case control study involving 1,499 patients and 1,130 health controls (matched by age and place or residence) between the ages of 35 and 79 with recently diagnosed prostate cancer. All participants were asked to complete a questionnaire about their dietary habits and to take a blood test. A smaller group (209 cases and 214 controls) had the amount of enterolactone in their blood measured.

The study showed that men who had a high intake of phytoestrogen-rich food such as beans (which offered the greatest protection), soy products, linseed, sunflower seeds, berries and peanuts had a 26% lower risk of developing prostate cancer. The researchers also found that men with very low blood levels of enterolactone had a greater chance of contracting the disease.

Hedelin M et al, Cancer Causes and Control, 2006; 17(2): 169-180. (<http://www.springerlink.com/(jpf4h155kdabxl55rip1r545)/app/home/journal.asp?referrer=parent&backto=linkingpublicationresults,1:100150,1>).

Isoflavones and breast cancer risk

Research in monkeys suggests that soy isoflavones do not increase markers of breast cancer risk in postmenopausal women and may even provide some protection. Researchers at Wake Forest University Baptist Medical Center evaluated the effects of dietary isoflavones in the presence of different levels of estrogen by rotating 31 postmenopausal cynomolgus monkeys through 8 different diets. Each diet contained 1 or 4 different isoflavone doses along with either a low or a high dose estrogen. The isoflavone doses were equivalent to the following human levels: no isoflavones, 60 mg (comparable to typical Asian diet), 120mg (highest level that can be consumed through diet alone), or 240 mg (levels obtained through supplements). Estrogen doses were designed to mimic either a low or high estrogen environment found in post menopausal women.

The researchers measured how the diets affected markers for breast cancer risk, such as breast cell proliferation. In the low estrogen environment, no evidence of increased cell proliferation was seen at any level of isoflavone exposure. In the high estrogen environment, there was higher breast cell proliferation when isoflavones weren't in the diet and when they were present at low doses. In addition, high levels of dietary soy isoflavones tended to block estrogen effects in breast tissue, suggesting that postmenopausal women with higher levels of estrogen may derive the greatest benefit from soy.

The researchers suggest that for women at increased risk of breast cancer due to higher estrogen levels a diet rich in soy isoflavones may offer a modest breast protective effect. However, the findings may not apply to premenopausal women who have higher and more dynamic hormone levels or to women taking combined hormone therapy with estrogen and progestin.

Wood CE *et al*, Cancer Research Cancer Res 2006 66: 1241-1249 (<http://http://cancerres.aacrjournals.org/content/vol66/issue2/>)

products

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FinnSoy launches ‘Terra’ brand

FinnSoy has launched it’s new ‘Terra’ brand of soy protein products developed to meet the rapidly growing demand for nutritious convenience foods in mainstream supermarkets, restaurants, fast food chains, catering and food service.

All ‘Terra’ brand products are made from natural ingredients. Apart from being rich in non-GM soy protein they contain no cholesterol or trans fats and are low in sodium and have a low glycaemic index. All ‘Terra’ products are suitable for vegetarians and vegans, are MSG free, egg white free, dairy and lactose free, and preservative free.

All FinnSoy products are available in private label, bulk or the ‘Terra’ brand. There are four varieties of ‘Terra’ products - Italiana, Gourmet, Mexicana, and To-Go. For more information visit the websites <http://www.finnsoy.com/>.

Danone unveils ‘Senja’ soy yogurts in France

The French agrofood group, Danone, is launching a new range of non-GMO ‘fresh’ soy yogurts in France. ‘Senja’ yogurts are enriched with calcium to provide 15% of the recommended daily calcium intake and will be available in 4 different flavours - pineapple and passion fruit, kiwi and apple, red fruits, and chocolate dessert. If successful the brand will be launched in other European countries too. ‘Senja’ yogurts are mainly targeted at women and will incorporate a health and well-being theme.

For more information about Danone products visit <http://www.danone.com/>.

Alpro launches light soy milk drink in UK

The first chilled, dairy free, unsweetened soy milk drink is to be launched in the UK by Alpro. As a lower calorie alternative to skimmed milk, Alpro “Line S’ is sugar-free, contains 1.2% fat with added calcium, fibre and vitamins. It will also carry a cholesterol lowering claim and is to backed with a major marketing campaign. Further innovations with light products are planned during 2006.

Visit the Alpro website for more information <http://www.alprosoya.co.uk/>.

Morinaga introduces seasoned tofu in two flavours

Morinaga Nutritional Foods in the USA has introduced Mori-Nu Seasoned Tofu in Chinese Spice and Japanese Miso flavours in response to the increasing number of people looking for quick healthy protein options that require little preparation. Mori-Nu Seasoned Tofu is not made by the same method as other flavoured tofu products which are just covered in sauces or marinades. Instead Mori-Nu Season Tofu is made by blending the seasoning ingredients throughout the entire block of tofu.

Visit <http://www.morinu.com/new/Whats_new.html> for more information.

PRELIMINARY ANNOUNCEMENT

7th International Soy Symposium on the Role of Soy in Health and Disease Prevention
will be held from 7–9 March 2007 in Bangkok, Thailand in conjunction with the
5th Southeast Asia Soyfood Seminar & Trade Show ‘Science to Market - Opportunities in Asia’.

Further information **will** be available at <http://www.soyfoodforum-sea.com> and
<http://asa-connect.com.sg/~firstlook/Notice> e-mail: info@soyfoodforum-sea.com

Soy & Health 2006

CLINICAL EVIDENCE ▪ DIETETIC APPLICATIONS

THURSDAY & FRIDAY, OCTOBER 12-13, 2006
RADISSON SAS HOTEL, DÜSSELDORF, GERMANY

The 4th International Conference 'Soy & Health 2006 - Clinical Evidence and Dietetic Applications' is primarily aimed at those with nutrition, dietetic or clinical backgrounds, as well as government representatives and senior executives from food and supplement manufacturers and ingredient suppliers.

Delegates from over 40 countries attended previous conferences held in Brussels (2000), London (2002) and Bruges (2004). This year's programme continues to provide the latest scientific information on the health effects of soyfoods and soybean constituents - and much more. One of the main sessions is on Soy and Cardiovascular Disease Risk reduction and the role of protein, peptides and isoflavones. The session will include a review presentation and new topics, such as:

- Bioactive peptides in soy.
- Is the hypocholesterolemic effect of soy protein enhanced by saponins?

A second theme will be the availability, optimal dose and effect of isoflavones, including effects on bone structure, and menopause. Some selected topics include:

- Factors affecting the bioavailability of isoflavones in humans.
- Prospective study on soyfood consumption and bone fracture.
- Genistein and chronic inflammation: inhibition of NF-kB.
- Glyceollins: new isoflavonoids with antiestrogenic potency.
- Role of isoflavones in Crohn's disease.
- Shoyuflavones in fermented soy: effects in inflammation and antiplatelet activity.

Soy and cancer is an ongoing topic and the latest scientific findings will be featured including avenues of upcoming new research of potential clinical significance such as :

- Anti-cancer effects of lunasin and lectins
- Kunitz trypsin inhibitor (KTI) and Bowman-Birk trypsin inhibitor (BBI): Anti-inflammatory and anti-cancer agents?

Fat soluble components have long been known for their health promoting effects and a special session will bring together the latest information on soy phytosterols and cholesterol reduction, lecithin, and omega 3 fatty acids.

Attention will also be given to labelling and health claims and how soy can be integrated into the daily diet.

For more information and to register on line visit our website:
<http://www.soyconference.com/>.

diary

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18 March 2006
4th Congress on Nutri- & Phytotherapy, RAI International Exhibition & Congress Centre, Amsterdam, The Netherlands. Visit: <http://www.nutrifyto.nl> or e-mail: info@nutrifyto.org.

26 March 2006
7th Congress on Nutri- & Phytotherapy, Brussels Expo Auditorium 2000, Brussels.
Visit: <http://www.nutrifyto.be> or <http://www.nutriphyto.be> or e-mail: info@nutrifyto.org.

4–7 April 2006
Anuga Foodtec Messe Koln, Cologne, Germany. Visit: <http://www.anugafoodtec.com>.

23–25 April 2006
USB/SANA 13th Annual Soy Symposium: Innovations in the Market Place: Reaching the Consumer Today, Dallas, Texas, USA. Contact: Christina Blue at christina@soyfoods.org or visit: <http://soyfoods.org/news/events.html>.

4–6 May 2006
2nd International Congress on Functional Foods and Nutraceuticals, Istanbul, Turkey. Contact Seles Kongre Org. Hizm Ltd, Sti, tel: +90 212 232 2121, e-mail: info@cffn.org or visit: <http://www.cffn.org>.

9–11 May 2006
Vitafoods International 2006, Geneva, Switzerland. Website: <http://www.vitafoods.eu.com>.

18–19 May 2006
1st European Healthy & Nutritional Bars Conference, Amsterdam, The Netherlands. Contact: PROSOY Research & Strategy, tel: +31 30 225 2060, e-mail: info@prosoy.org, website: <http://www.prosoy.org>.

30 May 2006
Food Ingredients Central and Eastern Europe (FICEE) 2006, Prague, Czech Republic. Visit: <http://cee2006.fi-events.com/> or e-mail: Imeertens@cmpinformation.

4–5 June 2006
Short Course - Soyfoods: Ingredients, Preparation and Utilization, Londrina, Parana, Brazil. Contact: membrane@membraneworld.com or visit <http://www.membraneworld.com/Soyfoods-Brazil.htm>.

18–22 June 2006
XIV International Symposium on Atherosclerosis, Rome, Italy. For more information visit: <http://www.isa2006.org>.

11 August 2006
Practical Short Course - Soy Drink Technology for the Dairy Alternatives and Soft Drinks Market, Hilton Hotel, Istanbul, Turkey. Contact: soyfoods06@scarlet.be. Website: <http://www.membraneworld.com/soyfoods06.htm>.

12–13 September 2006
First Asian Soya Drink & Desserts Conference, Bangkok, Thailand. Contact PROSOY Research & Strategy, tel: +31 30 225 2060, e-mail: info@prosoy.org, website: <http://www.prosoy.org>.

21-22 September 2006
Snack Foods Processing and Product Formulation, Ghent, Belgium. Contact: snackfoods@scarlet.be. Website: <http://www.membraneworld.com/snackfoods.htm>.

12–13 October 2006
Soy & Health 2006: Clinical Evidence – Dietetic Applications, Düsseldorf, Germany. Contact Soy Conference THV, e-mail: info@soyconference.com, website: <http://www.soyconference.com/>.

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