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the soya story



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About the Vegetarian & Vegan Foundation

The Vegetarian & Vegan Foundation (VVF) is a science-based health and nutrition charity which monitors research on diet. We help the public, health professionals and the food industry make informed choices by providing accurate information and advice on healthy eating. The VVF also runs health education campaigns, gives talks, cookery demonstrations, engages in joint projects with our sister group Viva! and contributes to the shared magazine, *Viva!life*. We produce educational materials, run the free online Vegetarian Recipe Club and answer nutritional queries from the public, media and health bodies.



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Introduction

Soya is an excellent source of nutrients. It also offers a wide range of potential health benefits, some well-established. Soya protein is known to lower cholesterol and so reduce the risk of heart disease and stroke. A diet rich in soya is linked to a lower incidence of certain cancers, it can combat menopausal symptoms and may promote bone health. It might even boost brain power! Soya is one of the most well-researched health-giving foods available today. But not all the reports on soya are favourable and the health benefits have been questioned by some, whilst others have launched a vigorous anti-soya crusade. The result is confusion, people don't know what, or who, to believe. In this guide, VVF looks at the research and sets the record straight.

History

Soya has a long history in Asia and people in China have been eating it for over 3,000 years. That's a long time to show that it is a safe and versatile food and evidence of the health benefits of soya continue to mount.

From Asia soya has spread worldwide. In 1765 it was introduced to the USA (Hymowitz and Harlan, 1983) and has subsequently become an important part of the diets of many populations. The soya bean is the most widely used legume in the world. Millions of Americans have been raised on soya infant formula over the past three decades without any evidence of detrimental health effects (Badger *et al.*, 2002).

In more recent years, soya foods have found favour with vegetarians and vegans because of their many nutritional and health benefits. However, as the popularity of soya has grown, so have the criticisms of this humble bean. There is, however, little scientific support for the sceptics.



Soya: the superbean! The nutritional power of soya



By Juliet Gellatley, BSc, Dip CNM,
Dip DM, FNTF, NTCC

'Soya bean' in Chinese means 'greater bean'. A look at its nutritional content shows that this is a most fitting title. However, this food is not without its detractors and I address their concerns below.

Soya is best eaten cooked in its whole form as green soya beans (edamame), tofu or fermented as tempeh or miso (see pages 31-32). This ensures that the variety of nutrients and their quality remains high. Soya milks are also a healthy product but choose those brands that use the whole soya bean rather than those which use soya protein extract – it says on the ingredients list.

Products and supplements using extracts of soya have had many of the beans' nutrients removed and do not contain the wealth of health benefits of whole soya foods. However, this doesn't mean they shouldn't be included in a balanced diet. For example, from a health (and ethical) perspective mock meats are superior to their meat counterparts.

Textured vegetable protein (TVP) is basically defatted soya flour which has been processed and dried to give a substance with a sponge-

like texture which may be flavoured to resemble meat. It is a good source of fibre and protein, and is often fortified with vitamin B12.

Protein packed

The soya bean is a legume – a type of plant in which the seeds grow in pods. All edible beans are nutrient powerhouses – they have to be to support the rapid growth of a new plant – but soya is particularly impressive. Soya beans are an excellent source of protein (approximately 40 per cent) as they contain all eight essential amino acids – building blocks of protein – which we need in our diet because we cannot manufacture them.

But the gold standard for measuring protein quality is the snappily worded Protein Digestibility Corrected Amino Acid Score. This takes into account not just the amino acid composition but also the digestibility of the protein. Soya gets almost top marks for both – in other words, it is a wonderful source of high-quality, health-promoting protein which we digest easily and efficiently (FAO/WHO, 1989).

Protein is vital for growth, development and repair of body tissues and is needed to make the thousands of enzymes required for the bewildering myriad of chemical reactions that take place inside us. Every neurotransmitter

is made from protein and they enable our nerves to send messages from cell to cell. The brain cannot function without protein and a diet deficient in it can lead to depression, apathy, poor memory, insomnia, lack of motivation and an inability to concentrate.

Don't tryp up!

Tryptophan is a good example. This essential amino acid is exceptionally rich in soya beans. A typical serving of cooked soya beans (a cup of edamame) provides 116 per cent of our daily needs. A 4oz/100g serving of tofu gives us 44 per cent. One of tryptophan's vital functions is that it is needed for the manufacture of serotonin, a neurotransmitter vital for good mood! It also helps regulate appetite and sleep patterns.

A weighty topic

Protein is the most satiating nutrient (makes you feel full). If trying to lose weight, eating soya beans (edamame) or whole soya bean products such as tofu can be a very useful way of raising the protein content of your diet in a safe way. By contrast, high animal protein diets can contribute to kidney (renal) failure [Kontessis *et al.*, 1990], heart disease, stroke, diabetes type 2 and other illnesses [Campbell and Campbell, 2004].

And trypsin inhibitors?

Soya beans are high in protein but also contain trypsin inhibitors – which means they reduce the availability of trypsin, an enzyme

needed to digest protein. This appears to be a contradiction – high in protein yet containing a substance that prevents it from being digested. However, an overview published by the American Institute of Nutrition makes



clear that trypsin inhibitors are “subject to denaturation and inactivation by heat” – which is precisely why nutritionists usually advise that we eat cooked, not raw, foods made from soya, such as tofu, miso, tempeh and soya milk [Anderson *et al.*, 1995].

In fact, oriental foods such as tofu, miso, soya sauce and other soya bean foods such as soya infant formula are, according to the US Department of Agriculture (USDA), “generally low in trypsin inhibitor” [Anderson *et al.*, 1995]. The USDA also states that trypsin inhibitors in

soya beans are thought to help prevent cancer. So, not such a bad thing after all!

Sapping saponins

Other factors which have produced controversy about the nutritional content of soya beans are chemical compounds called saponins and phytoestrogens. Again the USDA strongly state that scientific studies over 25 years have not only failed to show any harmful effects of soya saponins but have shown positive health impacts in lowering cholesterol and being anticarcinogenic [Anderson *et al.*, 1995].

Phytoestrogens are natural plant hormones found in many fruits, vegetables, dried beans, peas and wholegrains. Phytoestrogens in soya (called isoflavones) are responsible for many of the health benefits of soya [see pages 10-11].

Phytic acid

Plants store their phosphate in phytic acid and it can be found in most grains, seeds and beans. Rich sources are wheat bran, flaxseed and soya. Phytic acid has been seen as a negative, anti-nutritional component because of its ability to bind minerals such as iron and zinc and therefore reduce their absorption.

However, more recent research has shown that phytic acid has many health benefits. According to scientists at the Department of Medical and Research Technology, University of Maryland School of Medicine, Baltimore,

USA: "...Phytic acid reduces the risk of kidney stone formation and heart disease and can act as an anticancer agent. Phytic acid works by reducing cell proliferation and increasing the differentiation of cancer cells... Recent studies show that phytic acid, even when dosed at normal levels, does not cause deficiencies or toxic effects" (Vucenik *et al.*, 2003).

If you still want to lower your phytic acid intake, fermented soya products such as tempeh have much lower quantities – about half that of soya beans (Anderson *et al.*, 1995).

Fab fats

Soya beans are one-fifth fat and of this, 78 per cent are the 'good' fats, called polyunsaturated fatty acids. In fact, the soya bean is one of the few good plant sources of the essential fatty acid, alpha-linolenic acid (ALA), an omega-3 fatty acid that the human body can't make.

The fatty acids in soya are important hormone precursors, vital for making healthy new cells, stabilising blood pressure and promoting smooth muscle contraction.

Soya – as with all plants – is completely cholesterol-free.

Compared to cow's milk, soya milk contains lower levels of saturated fat and higher levels of valuable unsaturated fats, which can help lower cholesterol levels.



In 2006, the American Heart Association highlighted the valuable role that soya foods can play in replacing higher-saturated-fat foods in the diet and so helping to lower blood cholesterol levels (Sacks *et al.*, 2006).

Fibre rich

Soya beans are about one-fifth fibre – a rich source of both soluble and insoluble fibre. Both types help us but in different ways. For example, soluble fibre binds the cholesterol from food or bile acids and helps reduce the levels of 'bad' cholesterol in your blood. Insoluble fibre promotes a healthy pH in your intestines helping prevent colon cancer and it helps other foods to pass through your digestive system more easily and helps reduce constipation and other digestive problems such as irritable bowel syndrome (IBS).

We should eat a minimum of 18g of fibre a day yet most people in the UK eat only about 12g. A 4oz/100g serving of soya beans contains 9.3g of dietary fibre. Tofu and soya milk have little fibre, whereas edamame, tempeh and soya flour are very good sources.

Lovely lecithin

Lecithin is a fatty substance needed by every cell in our body. Cell membranes regulate what is let in, and out, of our cells and are largely made of a lecithin component called choline. Muscles, nerve cells and the protective sheath around the brain all contain it.

Lecithin and choline have many health benefits, for example helping prevent heart disease, improving brain function and memory and supporting the liver. Choline is used by the body to help remove cholesterol and aids the digestion of fats. One of the richest sources of lecithin is soya.

Vitamins and minerals

Lecithin is also an antioxidant and together with the vitamin E in soya, helps stop 'bad' cholesterol from oxidising and damaging arteries. Some B vitamins, including niacin (B3), pyridoxine (B6) and folate (B9), are other valuable components of soya.

Dem bones

Calcium-fortified soya products such as soya milk and tofu provide a valuable source of this important mineral without the saturated animal fat, animal protein (casein) and cholesterol found in dairy products. For example, 8fl oz/240ml of calcium-fortified soya milk provides 30 per cent of our recommended daily amount; the same as cow's milk.

Without fortification, 4oz/100g of green, cooked soya beans (edamame) contain 145mg of calcium; 21 per cent of an adult's daily needs. The same weight of calcium-set fried tofu contains 961mg (137 per cent of our daily needs)! An extremely good source either way.

It is sometimes claimed that the bioavailability

of calcium from soya milk is not as high as from dairy milk. Scientists compared the bioavailability of cow's milk with that of calcium-enriched soya milk and revealed that they are comparable. It follows that soya is a good source of calcium! (Zhao *et al.*, 2005.)

Mighty magnesium

Like all minerals, magnesium cannot be made in our body and must be obtained from our diet.

About two-thirds of all the magnesium in our body is in our bones and, like calcium and phosphorus, is vital to bone health. Magnesium and calcium act together to help regulate the body's nerve and muscle tone. Simply put, magnesium relaxes muscles while calcium contracts them.

Magnesium deficiency can trigger muscle tension and soreness, muscle spasms or cramps and muscle fatigue.

Over 300 different body enzymes need magnesium and so it follows that the functions of this mineral are particularly diverse. Magnesium is central to energy production as well as being involved in the metabolism of proteins, carbohydrates and fats. It also helps genes function correctly.

Soya is also a rich source of magnesium, with 4oz/100g containing 280mg – practically all of our daily needs. The same weight of edamame

and cooked tempeh provides 22 per cent while raw tofu provides about 10 per cent.

Finally...

Soya beans are an astonishingly versatile and healthy food which can be enjoyed and savoured as part of a balanced diet. Whether it be edamame, miso soup, tofu stir-fry or a soya milk fruit smoothie – soya beans are a delightful way to add nutritious recipes to your culinary repertoire.

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Soya: the health protector

The health effects of soya



By Dr Justine Butler

Phytoestrogens

Many of the beneficial health effects of soya are attributed to the action of phytoestrogens. These natural plant hormones are found in many fruits, vegetables, dried beans, peas and wholegrains. Examples of non-soya foods that contain phytoestrogens include cereals, bread, raisins, rice, chick peas, haricot beans, butter beans, bean sprouts, fruits and mixed vegetable dishes. In other words, they are almost impossible to avoid.

Isoflavones are a type of phytoestrogen and include genistein and daidzein. Each gram of soya protein in traditional soya foods provides about three to four milligrams (mg) of isoflavones (Messina and Redmond, 2006).

They may act in a similar way to the animal hormone oestrogen (Coldham *et al.*, 1997), but they are much weaker, between 100 and 100,000 times weaker (Messina *et al.*, 2006). Because of this, some scientists suggest that phytoestrogens may actually have a normalising effect on the body's natural oestrogen levels (Kurzer, 2002). They may do this by partially blocking the strong oestrogen signal that occurs in people with high levels of oestrogen, for example women taking the contraceptive pill or HRT. On the other hand, phytoestrogens may boost the weak oestrogen signal in people with low levels of hormone, such as in postmenopausal women.

Ironically, much of the controversy surrounding the supposed harmful effects of soya foods focuses on phytoestrogens. There have been numerous scare stories ranging from outlandish claims that they can

feminise boys and make men grow so-called 'man boobs' to more serious reports that they can alter sexual development and fertility. These reports are based on *in vitro* (test tube) and animal experiments which bear no relevance to humans. These experiments are fundamentally flawed on many levels.

Firstly, isoflavones behave differently in different species so animal studies are not applicable to humans. Secondly, the intestines act as a barrier to isoflavones so artificially boosting levels in animals by injection has no relevance. Finally, many of these experiments have exposed animals to isoflavones at levels many, many times higher than those absorbed by infants fed with soya-based infant formula.

More and more scientists and doctors are acknowledging that the results of animal experiments should not form the basis of a public health policy. Dr Kenneth Setchell, Professor of Paediatrics at Cincinnati Children's Hospital Medical Centre, states that mice, rats and monkeys all metabolise soya isoflavones differently from humans and that the only appropriate model for examining human reproductive development is the human infant (Setchell, 2006).

There are no human studies that support



these stories but they still have caused undue concern among many people.

Although phytoestrogens in soya have been a part of the diet of millions of adults and children in Asia for centuries, they continue to be regarded with some suspicion. In 2003, amid concerns about the effects of phytoestrogens on infants consuming soya formula, the UK Department of Health's Committee on Toxicity (COT) published an extensive review on the health implications of phytoestrogens (COT, 2003). Their aim was to assess if soya infant formulas posed any risk for infants.

They compared isoflavone intakes around the world and found that they varied widely from just 0.8-17.0mg per day in the UK, US, Australia and New Zealand to 18-200mg per day in Japan, China and Korea. Some groups in the UK were found to be consuming relatively more isoflavones, for example infants fed soya formula, different ethnic populations, vegetarians and vegans.

Eleven breastfeeding vegan mothers had an average intake of 75mg isoflavones a day; higher than the average UK intake but well within levels seen in some Asian countries. Infants fed soya formula were estimated to be consuming around 23.6mg isoflavones per day (4mg for every kg of bodyweight). Again, higher than average intakes in the UK but within levels seen in Asia.

More recently, the isoflavone intake of a group of UK vegetarians and omnivores was estimated using a new database which lists the isoflavone content of 6,000 foods (Ritchie *et al.*, 2006). Vegetarians were found to consume just 7.4mg per day compared to an estimated 1.2mg for omnivores. The main source for each group were soya milks and yogurts, soya and textured vegetable protein foods, breads and dried fruit.

So while isoflavone intakes vary widely both between and within populations, vegetarians, vegans and infants consuming soya formula are not exposed to levels higher than those seen in many Asian countries. The COT report acknowledged that there is no evidence that people who regularly eat high quantities of soya, such as the Chinese and Japanese, have altered sexual development or impaired fertility. It should be remembered that China is the world's most populous nation, with over 1.3 billion citizens, that have been consuming soya for over 3,000 years!

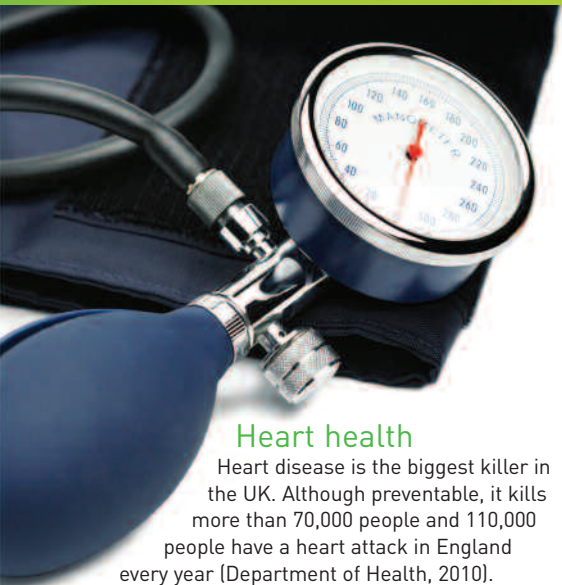
Isoflavone content of selected foods

Food	Isoflavone (mg/100g)
Miso	43-60
Soya cheese	6-31
Soya milk	5-10
TVP	68.3*
Soya yoghurt	16
Soya sauce	0.1-1.6
Tempeh	29-53
Tofu	13.5-67

Source: COT, 2003. *Ritchie *et al.*, 2006.

Corin Jeavons/Viva!





Heart health

Heart disease is the biggest killer in the UK. Although preventable, it kills more than 70,000 people and 110,000 people have a heart attack in England every year (Department of Health, 2010).

Evidence strongly links high blood cholesterol levels to heart disease and the UK population has some of the highest in the world. The government recommends levels should be less than 5mmol/L yet two out of three adults in the UK have levels above this (NHS Choices, 2009).

In the 1990's, researchers found that replacing animal protein such as meat, cheese and fish with soya protein in the form of tofu, soya milk and soya beans could help

lower cholesterol and so protect against heart disease (Anderson *et al.*, 1995).

The role of soya protein in heart health has since been widely accepted and approved by many different health bodies. The UK government's Joint Health Claims Initiative (JHCI) offers advice and a code of practice for both the UK food industry and consumers to ensure that health claims on foods are both scientifically truthful and legally acceptable. In 2002 the JHCI approved the health claim: "the inclusion of at least 25 grams of soya protein per day as part of a diet low in saturated fat can help reduce blood cholesterol" (JHCI, 2002).

Exactly how soya protein does this is not yet clear. Research suggests that soya isoflavones alone do not lower cholesterol (Zhan and Ho, 2005). The beneficial effects are thought to come from a combination of factors (isoflavones and the types of amino acid found in whole soya), which work together (McVeigh *et al.*, 2006).

Blood pressure

High blood pressure (hypertension) also increases the risk of heart attack and stroke. This condition affects 40 per cent of adults in England (NHS Choices, 2008). People with hypertension are often prescribed drugs to lower their blood pressure. However, the diet can also affect it. For example, limiting salt

intake can lower blood pressure. Some studies suggest that soya protein could lower blood pressure.

A study looking at the effects of soya protein and isoflavones on cholesterol and blood pressure among 61 high risk middle-aged Scottish men found that diets containing at least 20g of soya protein (80mg of isoflavones) for five weeks lowered both cholesterol and blood pressure (Sagara *et al.*, 2004).

A larger 12-week trial involving 300 people with high-normal or mildly elevated blood pressure found that 40g of soya protein per day significantly lowered blood pressure (He *et al.*, 2005). These findings suggest soya protein can play an important role in preventing and treating hypertension. This is important as even small reductions in blood pressure can significantly lower the risk of heart disease and stroke.

In summary, the effect of soya protein may allow some people to avoid the use of blood pressure-lowering and cholesterol-lowering medications.

Diabetes and CVD

The term cardiovascular disease (CVD) includes heart disease, stroke and all other diseases of the heart and circulation. People with diabetes are up to five times at greater risk of CVD compared with those without



diabetes (Diabetes UK, 2008). People with type 2 diabetes also tend to have low HDL 'good' cholesterol and raised triglyceride levels, which both increase the risk of atherosclerosis (clogging of the arteries).

In other words, an unhealthy balance of fats in the blood increases the risk of fatty deposits building up on the inside of artery walls. As the artery narrows, the risk increases that a clot will form and completely block the blood flow. This can affect the brain with a stroke or trigger a heart attack.

Research shows that soya foods can lower cholesterol levels in people with type 2 diabetes and so lower their risk of CVD (Pipe *et al.*, 2009). This study found that 40 grams of soya protein per day for 57 days significantly reduced cholesterol, compared to cow's milk protein. Lead researcher Dr Alison Duncan said: "This study provides evidence for soya as a dietary preventive strategy for adults with type 2 diabetes to reduce their CVD risk and, in so doing, improve their quality, and possibly length, of life".

Diabetes

It is well-established that soya foods can help patients with diabetes combat some of the complications and health risks associated with the disease (see above). There is also evidence that soya can help reduce the risk of this disease.

Legumes or pulses (peas, beans and lentils) provide a good source of fibre and have a low glycemic index (GI). This means that the carbohydrates they contain break down gradually into the bloodstream as opposed to high GI foods. The carbohydrates in high GI foods break down quickly during digestion and release glucose rapidly into the bloodstream.

For these reasons, it has been suggested that a diet high in legumes may be beneficial for the prevention of type 2 diabetes. In one large study of middle-aged Chinese women, a high intake of legumes (soya beans in particular), was associated with a reduced risk of type 2 diabetes (Villegas *et al.*, 2008).

Another theory is that phytoestrogens in traditional fermented soya bean foods may help prevent or slow type 2 diabetes (Kwon *et al.*, 2010). One study looked at the effects of natto (fermented soya) and yam and okra on glucose control in Japanese men eating a traditional breakfast of high GI white rice. They found that when natto and these so-called viscous vegetables were eaten with rice, both glucose and insulin blood levels were lower (Taniguchi *et al.*, 2008). In other words, the soya food and vegetables helped control blood sugar levels.

The simple inclusion of soya foods in the diet could have a powerful role to play in preventing the build up of sugar and therefore lower the risk of diabetes.

Menopausal symptoms

The lower incidence of hot flushes amongst women in Asia has inspired researchers to look at the role of soya in reducing menopausal symptoms. A six-year study of over 1,000 Japanese women found that those who ate the most soya had less than half the number of hot flushes than those eating the least (Nagata *et al.*, 2001).

Numerous other studies support these findings, showing that soya isoflavones can substantially reduce the frequency or severity of hot flushes (Murkies *et al.*, 1995; Brzezinski *et al.*, 1997; Albertazzi *et al.*, 1998; Faure *et al.*, 2002). Not surprisingly, some researchers suggest that isoflavones could provide an alternative to hormone replacement therapy (HRT) to help reduce menopausal symptoms.

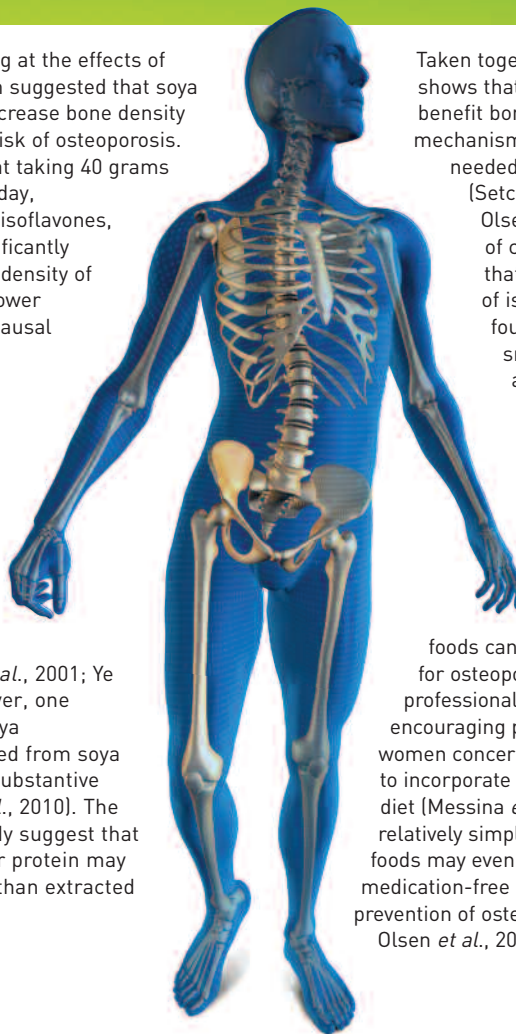
It is still early days for this research and the safety of specific amounts of isoflavones has not yet been established. So, it is better to obtain isoflavones from whole soya foods rather than as soya isolates or supplements.

Bone health

Osteoporosis is a debilitating disease in which the bones become brittle and break easily. In the UK, one in two women and one in five men over the age of 50 will break a bone, mainly because of poor bone health. Osteoporosis costs the NHS £2.3 billion a year – that's £6 million a day (NOS, 2009).

Early studies looking at the effects of soya on bone health suggested that soya protein may help increase bone density and so reduce the risk of osteoporosis. One study found that taking 40 grams of soya protein per day, containing 90mg of isoflavones, for six months significantly increased the bone density of the lumbar spine (lower back) of postmenopausal women (Potter *et al.*, 1998).

These findings are supported by numerous other studies looking at the effects of soya foods on bone density (Alekel *et al.*, 2000; Somekawa *et al.*, 2001; Mei *et al.*, 2001; Ye *et al.*, 2006). However, one study found that soya isoflavones extracted from soya did not have such substantive effects (Alekel *et al.*, 2010). The authors of this study suggest that whole soya foods or protein may offer more benefit than extracted isoflavones.



Taken together, this research shows that soya foods can benefit bone health although the mechanism and how much is needed remains unclear (Setchell and Lydeking-Olsen, 2003). The results of clinical trials suggest that around 80mg per day of isoflavones (the amount found in 125g of tofu, two small soya yoghurts and a large glass of soya milk) may be needed to obtain bone health benefits but population studies suggest lower amounts could be effective.

So, although soya foods cannot replace medication for osteoporosis, health professionals can feel justified in encouraging postmenopausal women concerned about bone health to incorporate soya foods into their diet (Messina *et al.*, 2004). This relatively simple inclusion of soya foods may even offer a cheap and medication-free intervention for prevention of osteoporosis (Lydeking-Olsen *et al.*, 2004).

Breast cancer

There is some controversy about the possible role of soya in breast cancer. It has been suggested that the limited oestrogen-like effect of isoflavones may be detrimental for postmenopausal women whose oestrogen levels have dropped and have been diagnosed with hormone-sensitive (oestrogen-receptor or ER positive) breast cancer.

The theory is that the weak oestrogen-like activity of soya isoflavones may stimulate the growth of those tumours which are sensitive to oestrogen. This is not a concern for premenopausal women who have much higher levels of circulating oestrogen. Again, these concerns are based largely on the results of *in vitro* (test tube) and animal experiments.

These types of study have produced mixed results and their relevance to human breast cancer patients is unclear. To date there have been only two human studies and these were also unclear (Petrakis *et al.*, 1996; Hargreaves *et al.*, 1999).

There is, however, strong evidence that eating soya foods during adolescence reduces the risk of breast cancer later in life. One of the first studies to report this was the *Shanghai Breast Cancer Study*, the largest population-based study looking at lifestyle and breast cancer (Shu *et al.*, 2001). It looked at 1,400 breast cancer cases in China and found that women

Dairy concerns

If consuming phytoestrogens was dangerous for postmenopausal women with breast cancer, then you'd expect the medical profession to advise that they stop consuming all oestrogen too as it is far more potent (Coldham *et al.*, 1997). This would mean recommending they avoid all cow's milk and dairy products which account for 60-80 per cent of the oestrogen in the Western diet (Hartman *et al.*, 1998). The rest coming mainly from meat and eggs.

Cow's milk actually contains a cocktail of over 35 different hormones and 11 growth factors (Grosvenor *et al.*, 1992). Furthermore, modern dairy cows (including organically farmed cows) are frequently impregnated while still producing milk (Webster, 2005). At least two-thirds of retail milk in the UK is taken from pregnant cows when the hormone level in the milk is markedly elevated (Danby, 2005). Some scientists are far more concerned about the effects of these hormones on human health. This is a much neglected area of research and there is a need to update the information we have about hormones in cow's milk and dairy products (Jouan *et al.*, 2006).

For more information, see the VVF's guide on breast cancer, *A Fighting Chance*.



who consumed the most soya as teenagers had half the risk of breast cancer as adults.

A year later, over 1,000 Asian-American women, including 501 breast cancer patients, were asked how often they ate soya foods such as tofu, soya milk and miso. Results showed that those who consumed soya at least once a week during adolescence had a significantly reduced risk of breast cancer (Wu *et al.*, 2002).

More recently, a study of more than 1,500 Asian American women found that eating soya foods during childhood could reduce the risk of breast cancer by 60 per cent (Korde *et al.*, 2009). The greatest protective effect was seen in those eating soya six times a month, compared to less than three, from childhood onwards. A further protective effect was also seen in those who ate soya during adolescence and adulthood.

The protective effect of soya was recently shown to apply to women who have breast cancer too. *The Shanghai Breast Cancer Survival Study* looked at over 5,000 women (aged 20 to 75) previously diagnosed with breast cancer an average of four years earlier (Shu *et al.*, 2009). Results showed that those who ate more soya foods (11 grams of soya protein per day, equivalent to one and a half servings of tofu or soya milk) were less likely to die from the disease and had a significantly lower risk of recurrence. The protective effect

of soya applied to both premenopausal and postmenopausal women. The conclusion was that the prognosis for women with breast cancer was improved by eating soya foods.

Taken together, these studies indicate that eating soya foods during adolescence reduces the risk of breast cancer and that the risk continues to fall if women carry on eating soya as adults. Furthermore, contrary to some unfounded reports, soya foods appear to protect against breast cancer in both premenopausal and postmenopausal women with the disease. This research should reassure women diagnosed with breast cancer that soya foods are safe and potentially beneficial. For those who are still concerned, a cautious approach would be for postmenopausal women at risk of breast cancer to limit the number of soya products they eat to three or four a week.

Prostate cancer

The low rates of prostate cancer seen in Asian countries have encouraged scientists to look at the role soya plays in this and other hormone-related cancers. Prostate cancer rates vary widely around the world, tending to peak in developed, wealthy countries. Japan is the exception, where prostate cancer rates are surprisingly low despite the high standard of living. Some evidence suggests that dietary soya may be responsible.

In 1998, a large-scale study across 59 countries concluded that soya products were significantly protective against the disease (Hebert *et al.*, 1998). This study found that men eating an affluent diet, including dairy milk, meat and poultry, were more likely to die from prostate cancer than those eating a diet based on cereals, soya beans, nuts and oilseeds.

More recently, another study showed how soya foods could lower the risk of prostate cancer by up to 26 per cent. Interestingly, this research found that while non-fermented soya



foods, such as tofu and soya milk, lowered the risk, fermented ones such as miso and soya sauce, did not (Yan and Spitznagel, 2009).

So, there are no human studies that show an increased risk of cancer due to soya but plenty of evidence suggesting that it provides protection.

Endometrial cancer

Soya foods may also reduce the risk of endometrial cancer. A study of over 800 women from Shanghai with endometrial cancer found that the regular intake of soya foods was associated with a lower risk of endometrial cancer (Xu *et al.*, 2004). Those who ate the most soya were 33 per cent less likely to get the disease than those eating the least.

Colon cancer

There is some evidence that soya foods may also lower the risk of colon cancer, especially in women (Yang *et al.*, 2009; Yan *et al.*, 2010).

Brain power

Several studies suggest that soya foods improve both short-term and long-term memory, mental flexibility and planning.

Researchers at the Centre for Neuroscience at King's College in London investigated the effects of a high soya diet (100mg isoflavones per day from the soya supplement Novasoy) compared to a low soya

diet (0.5mg isoflavones per day) in student volunteers. After just 10 weeks, those eating the high soya diet showed significant improvements in short-term and long-term memory and mental flexibility (File *et al.*, 2001).

Further studies support a beneficial effect of soya isoflavones on cognitive ability (Duffy *et al.*, 2003; File *et al.*, 2005). However, benefits may be restricted to people under the age of 65 (Kritz-Silverstein *et al.*, 2003; Kreijkamp-Kaspers *et al.*, 2004). Again, these results look promising but more research is needed to confirm how much soya makes a difference.

Soya-based infant formula

Despite the lack of evidence that soya harms babies, the use of soya-based infant formula remains a contentious issue. Breast milk is the best option for most infants but some mothers are unable to, or choose not to, breast-feed. In these cases, infant formula milks are recommended until the child is one. This is because non-formula milks contain too much salt, protein and not enough iron and other nutrients to meet an infant's needs (FSA, 2010).

Numerous studies show that infants fed soya formula grow and develop normally.



In the US, 20-25 per cent of all formula-fed babies use soya (USDA, 2010). However, mothers in the UK are told not to use soya formula unless advised to by their doctor. This is an extremely cautious approach given that millions of American infants have been fed soya formula over the past three decades (Badger *et al.*, 2002).

There are no reports from Japan and China that the use of soya has had detrimental health effects. In fact, the absence of any reported ill effects on millions of infants would suggest there aren't any.

The COT report found no evidence of altered sexual development or impaired fertility among human populations eating lots of soya. Just one single human study has examined this and found no evidence of adverse effects, saying their findings were reassuring (Strom *et al.*, 2001). In summary, soya formulas continue to provide a safe feeding option for most formula-fed infants (Klein, 1998).

Thyroid function

Another area of controversy is the possible role soya may have in thyroid function. The thyroid is a small endocrine gland found in the front of the neck. It produces thyroid hormones and secretes them into the bloodstream. These hormones regulate the body's metabolism, heart rate, body temperature and help control how fast the body uses energy from food.

Every cell in the body depends on thyroid hormones for regulation of their metabolism. Hypothyroidism, or an underactive thyroid, is when insufficient thyroid hormones are produced. When it occurs from birth it is called congenital hypothyroidism.

Iodine is a trace element found in seawater, rocks and some types of soil. It is essential for the production of thyroid hormone so low levels of iodine can result in low levels of hormone. This can cause the pituitary gland at the base of the skull to produce more thyroid-stimulating hormone (TSH) in an effort to boost thyroid hormone production. This makes the thyroid gland work harder, causing it to enlarge and form what is called a goitre. If the lack of iodine is very severe, hypothyroidism can result.

In the UK, this is virtually unheard of as even very poor diets tend to contain enough iodine. In the few cases of iodine-deficiency related

goitre that have been reported, supplementation with iodine (kelp) has been shown to shrink the goitre (Park *et al.*, 2005).

Natural substances called goitrogens, found in soya, broccoli, kale, cabbage, turnips, millet, peanuts and pine nuts, can interfere with the uptake of iodine and lead to a goitre. However, this is not a problem if the diet provides enough iodine.



A small number of studies have suggested that soya isoflavones may also affect thyroid function by lowering thyroid hormone concentrations.

In a cautionary statement, the COT advises health care professionals to be aware of possible links between isoflavones in soya formulas and thyroid function, particularly in cases of congenital hypothyroidism (COT, 2003).

However, a review of 14 different studies looking at the effects of soya on thyroid function found little evidence that it had an

adverse effect in people whose thyroid function is normal and whose diet contains sufficient iodine (Messina and Redmond, 2006). The authors suggest that soya foods may interfere with absorption of medication containing synthetic thyroid hormone but that hypothyroid adults need not totally avoid soya foods.

There is also a theoretical concern that in individuals with compromised thyroid function and/or whose iodine intake is marginal, soya foods may increase the risk of developing hypothyroidism. The general consensus is that all people, whether soya consumers or not, should ensure their intake of iodine is adequate.

The Department of Health recommends that toddlers aged one to three should get 70 micrograms of iodine per day and adults 140 micrograms (Department of Health, 1991). Good sources include sea vegetables with a consistent iodine content, such as kelp (kombu). Only a small amount is required as too much iodine can be harmful. The UK Food Standards Agency considers that 500 micrograms or less a day is unlikely to cause any harm (FSA, 2010a).

You can use small amounts of powdered or crumbled sea vegetables added to soups, stews, salads, pasta dishes or used as a condiment, to ensure a sufficient iodine intake. Alternatively, adults can supplement their diet with kelp tablets but these are not suitable for children.

Other sea vegetables such as nori (used in sushi), wakame and arame are relatively low in iodine and can be eaten in moderation without concern about excess iodine. Refer to the packaging for exact figures and recommendations. Iodine is also found in cereals and grains, such as whole wheat and rye, but levels vary depending on the amount of iodine in the soil where the plants are grown.

For more information, see the VVF's factsheet, *Talking Thyroid Facts*.

Allergies

Around six per cent of children under three years old are affected by food allergy, the most common culprits being cow's milk and eggs. The number affected by allergies tends to decline with age. Around four per cent of adults are affected, shellfish and nuts being the most common causes (Department of Health, 2006).

A small number of foods are responsible for 90 per cent of all allergic food reactions. These include cow's milk and dairy products, eggs, peanuts, tree nuts (including Brazil nuts, hazelnuts, almonds and walnuts), fish, shellfish (including mussels, crab and shrimps), wheat and soya (FSA, 2010b).

The symptoms of soya allergy are similar to those of cow's milk allergy and include rashes, diarrhoea, vomiting, stomach cramps and breathing difficulties. Very rarely, soya



can cause anaphylaxis, a severe and potentially fatal 'toxic shock'. Since November 2005, food labelling rules require pre-packed food sold in the UK to show clearly on the label if it contains soya (FSA, 2010c).

It has been suggested that genetically modified (GM) soya may be more likely to cause an allergic reaction than non-GM soya (Lack, 2002). The theory is that the GM plants are engineered to produce either more of a particular protein or an entirely new protein that may cause the allergic reaction. These concerns have been met by biotechnology companies producing GM soya with the specific proteins thought to cause the allergic reactions removed (Kleiner, 2002).

If you want to avoid GM foods then choose foods that are certified organic or check product labels to ensure 'non-GM' is stated.

Soya production

Traditional soya foods such as soya sauce, miso, tempeh, tofu and soya milk are made with the whole bean using fermentation or precipitation methods. This is why these foods and other whole soya beans products like edamame (fresh or frozen green soya beans) and whole soya beans are considered healthier foods. They differ from soya-based meat substitutes, such as soya sausages, burgers and mince, which use soya protein extracted from the soya bean.

As with all processed foods, the nutrient content is partly determined by the processing method. The VVF does not recommend the over-consumption of any highly-processed foods as they tend to contain high levels of fat (sometimes including hydrogenated fats), salt, sugar and artificial additives, which have all been linked to health problems.

However, many 'mock meats' do provide a valuable low-fat and cholesterol-free source of good protein and increasingly they are free from hydrogenated fats (check the label). This makes them a healthier option than their meaty or milky equivalents, which contain saturated animal fat, animal protein, cholesterol and hormones, including oestrogen.

Summary

Soya beans contain a wide range of valuable nutrients and are an excellent source of protein. The health benefits of soya foods are widely documented. For example, soya protein lowers cholesterol and so protects heart health. Soya foods also protect against diabetes, menopausal symptoms and certain cancers, such as breast cancer. They can help boost bone health, memory and mental flexibility. The number of studies reporting the beneficial health effects of soya continues to grow.

Despite the wealth of unfounded scare-stories, pseudo science and downright daftness written about soya, this guide should leave you in no doubt that soya foods are a healthy, versatile and safe option for people of all ages. This does not mean that we should

live off soya alone... The key to a healthy diet is to include a wide range of foods including plenty of wholegrains (wholemeal bread, brown pasta and brown rice), pulses such as peas, beans (including soya) and lentils, fruit, vegetables, nuts and seeds and 'good' oils.

The use of isoflavone supplements in food or pills is not recommended but soya foods such as tofu, tempeh, whole soya beans, edamame and soya milk are beneficial to cardiovascular and overall health because of their high content of polyunsaturated fats, fibre, vitamins and minerals and low content of saturated fat. Using these and other soya foods to replace meat and dairy foods high in animal protein, saturated fat and cholesterol, is a simple and effective way to protect your health.

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Soya: a global threat? How soya impacts the environment



By Tony Wardle

Soya beans are no more environmentally damaging than any other pea or bean, in fact, less so because of their extraordinary composition – 40 per cent protein, 18 per cent oil (Louis Bonduelle

Foundation, 2010).

Therefore they can feed more mouths per acre than almost any other plant and have been nicknamed

the miracle bean or golden bean.

Soya beans originated in China about 2853 BC and even back then attracted a glowing epithet as the sacred bean. It's a bit of an irony that having exported this wonder bean to countries worldwide, China is now sucking in global production at an ever-increasing rate. Sadly, it has little to do with soya's original use – to make mock meat, tofu, miso, soya milk and soya sauce. China's demand, along with all the other industrialised and industrialising countries, is for animal feed for farmed livestock.

In an inexplicable perversion of nature, humankind has taken the most extraordinarily nutritious plant known and is wasting it by feeding it to animals – recycling it to produce meat and milk. The ratio of waste ranges from 6:1 with chickens to as high as 17:1 with cattle – i.e. it requires from 6kg to 17kg of soya protein to produce 1kg of meat protein (Reijnders and Soret, 2003).

On the other hand, 1kg of soya can produce 10 litres of soya milk, making it about five times cheaper than cow's milk.

Added to this wastefulness is the skyrocketing growth in the number of farmed animals as the global demand for meat increases and a subsequent explosion of demand for soya as fodder. The outcome was predictable – there is simply not enough agricultural land available to meet this demand.

It was inevitable that there would be an environmental and human impact. It manifests itself in the felling of rainforests, the destruction of wilderness areas and handing over to multinational corporations land that was destined for landless peasants – all to increase the massive monocultures of soya beans. Beans are far more profitable than standing forests or poverty-stricken people!

Leader in the field of soya cultivation and in using it for animal feed is the US but its predominance is being challenged as countries across the globe scramble to grow soya for animals and cash in on this lucrative crop. Brazil is now the second biggest producer, with the industry almost entirely in the hands of three huge multinational corporations.







Of all cleared Amazon rainforest land, 30 per cent is used to grow soya and the other 70 per cent is used for grazing cattle. Producers of animals for meat and dairy are behind almost all the deforestation in the world (UN/FAO, 2006).

In Argentina, soya has staged an extraordinary takeover with some 40 per cent of its agriculture devoted to this one crop. Between them, these three countries produce four-fifths of the world's soya crops (Valente, 2004).

In 1995, China was self-sufficient in soya beans, producing five million tons a year. As its development roared away and people's incomes rose, they aped the West by consuming ever-increasing amounts of dairy and fish and its meat consumption rocketed to double that of the US. The outcome was that in 2009 they were consuming 55 million tons of soya beans and had become the world's biggest importer, sucking in 41 million tons annually (Workman, 2007).

The incredible inefficiency of animals has resulted in livestock demanding 70 per cent of the world's agricultural land for either grazing or growing fodder – and it's all been used up. All that remains is largely forested land which is why the primary reason for its destruction is grazing and growing soya beans (UN/FAO, 2006). This destruction is an environmental disaster and is the second biggest source of greenhouse gases – and yet the destruction continues.

In 2007, the 27 countries of the EU imported 24.8 million tonnes of soya meal – 18 million tonnes from Brazil alone. The UK's share of this despoilation of rainforests was 790,000 tonnes, most of it from Brazil (Friends of the Earth, 2008).

The reason that soya gained such a vaunted reputation back in history was not because of its use in animal feed but because it fed humans so well. It is not only high in protein but contains the same full range of amino acids as meat.

It is estimated that on a global scale, 10 hectares of land could feed two people on a meat diet, 10 on maize, 24 on wheat but an extraordinary 61 on soya (Tickell, 1991). That's how nutritious it is!

When used as animal feed, the oil is removed and the 'de-fatted' residue is turned into meal or pressed into cakes. It is from this residue that 'soya isolates' are obtained for making mock meat products (meat analogues). Foods such as tofu (bean curd), tempeh, soya sauce and most soya milks are made from whole beans and are therefore of higher nutritional value.

Because of the international nature of the soya trade, it's hard to discover precisely what other uses soya has. It is estimated that at least 80 per cent finds its way into animal fodder whilst most of the remainder is used in

mainstream food production as paddings and fillers in meat pies and pasties and thousands of other products, as well as extracts such as lecithin (Lawrence, 2006). A very small proportion is used to make dedicated soya products such as tofu.

Currently, there seems to be great delight on the part of the media to have a go at vegetarians and vegans in a vain attempt to prove that they are just as threatening to the planet as meat-eaters.

Of course it's nonsense but many people seem to believe it. One such criticism is that by eating soya products they are destroying rainforests. The fact that soya bean cultivation is causing environmental havoc across the globe is not the fault of veggies as they consume such a small amount of the total – and most of that tends to be organic and sourced from the US.

Get rid of farmed animals and not a single tree would be felled because of us.

One thing is certain, a cow eats far more soya to produce a slab of meat than is required to produce a slab of tofu.

Proof of this comes from China. For over 3,000 years soya products formed an essential part of Chinese people's diet and even when its population exploded to more than a billion it

was still self sufficient in soya. It was only when they turned to the mass consumption of meat and dairy that their demand for soya exploded.

Any decision to change from meat to a veggie diet is better, not just for the animals themselves and the rainforest, but also for all the other environmental catastrophes that are linked to livestock production – expanding deserts, soil degradation, global warming, acid rain, nitrogen pollution, antibiotic resistance and superbugs.



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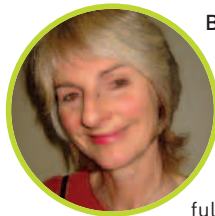
The ideal guide for new vegans. This excellent and practical booklet explains how to replace dairy products and eggs. Not a recipe book, this guide gives masses of ideas for breakfasts, lunches, main meals and ready-made foods available from supermarkets.



To order, call 0117 970 5190 (Mon-Fri, 9am-6pm) – please quote 'Soya Guide Offer'. Or send us your order with your name, address and payment (payable to 'VVF') to: Soya Guide Offer, VVF, Top Suite, 8 York Court, Wilder Street, Bristol BS2 8QH.

For more guides and goodies, visit the VVF shop online at www.vegetarian.org.uk

Bean cuisine! An introduction to cooking with soya



By Jane Easton

As you will have seen from the first half of this guide, the humble little soya bean has it all – it's a mighty nutritional powerhouse! Not only are soya beans full of protein but they are also a valuable source of calcium, zinc and many B vitamins (not B12). So rather than feed them to animals which are then killed for meat – the unhealthiest, environmentally damaging, wasteful and cruel method of producing protein imaginable – why not cut out the middleman and just eat them directly?

Superfoods of the ancients

Of course, in large parts of the world, the Far East in particular, they've been doing just that for over 3,000 years! Oriental cuisine uses a range of delicious soya products which are very healthy and as near to the bean's natural state as possible. These products became available in the West from the 1960s onwards.

However, as the VWF and Viva! discovered when they launched the Incredible Veggie Roadshows,



not everyone is in on the secret; either they don't know about soya foods and their benefits or else they don't know how to cook them. It's no coincidence that the tofu cookery demonstrations and soya talks have been some of our best attended presentations. Hence this guide!

But never fear. You've read the soya science, now we'll show you how to make delicious dishes and tell you where to buy the products. But first, a brief introduction to soya foods and a few other goodies, plus stockists.

Soya source

Dried soya beans are the source of most of the products listed below. Plain, cooked beans can be added to stews and other dishes for a rich source of protein, iron and fibre.

Buy them uncooked or ready-cooked in tins/cartons. The dried beans are sold ready-packed or loose from shops with 'weigh-your-own' sections. As with all dried beans, make sure they are in date [old beans take forever to cook and are tough and indigestible!]. Store them in an air-tight container until you use them.

To cook, first soak the beans overnight or for a minimum of twelve hours in lots of cold water. Make sure they are well covered because the beans will swell up during the soaking

process. Before cooking, drain off the soaking water and rinse the beans thoroughly. Cover with fresh water and cook in a saucepan for 2-3 hours or 1 hour in a pressure cooker.

Once cooked, strain, cool and store the beans in a sealed container in the fridge. They will keep for up to three days. Alternatively, cook a bigger batch, divide into portions and freeze in sealed containers or freezer bags (240g/9oz cooked beans is the equivalent of a tin of drained soya beans).

Ingredients

The versatility of soya beans doesn't stop there; they are the basis of several amazing foods, namely tofu (soya bean curd), tempeh, soya milk, miso and soya sauce. Fresh soya beans (sold as edamame) are a more recent addition to supermarket and health shop freezer cabinets.

Soya beans

They are a creamy, pale beige colour. Dried beans are sold in packets or loose. Also sold ready-cooked in cartons (Sainsbury's own brand, organic) or in tins (Biona, organic).

Edamame – fresh soya beans

These are bright green and delicious! Find them in the freezer cabinet and eat them lightly steamed or raw in salads, stir-fried and so on. Alternatively, just serve them hot with a

dash of salt and fresh lime juice for a clean-tasting and delicious side dish. As with all soya products, go for organic or non-GM if you can. The Realeat brand is very good.

Tofu

Also known as bean curd. Soya milk is coagulated – set – into tofu, using a process not unlike the way dairy milk is made into cheese. Tofu comes in several varieties. The plain variety (silken or firm) is relatively bland but lends itself to all sorts of flavourings quite beautifully! And of course, the ready-to-eat and cook flavoured varieties do all the work for you. Left-over tofu can be stored in an air-tight container in the fridge for 2-3 days. Silken tofu needs no extra water and neither do the dense-textured flavoured varieties like marinated pieces or Taifun flavoured. However, plain and 'wet' smoked tofu should be stored in the fridge in fresh water which is changed every day.

Silken tofu

It is usually sold in tetra packs (long life) and can be found in most large supermarkets, oriental grocers and health food shops. It is soft and blancmange-like in texture and is best used in desserts, savoury flans or other dishes where a creamy consistency is needed. Left-over silken tofu is great whizzed up with banana for an instant nutritional fix. Try adding a little vanilla extract and healthy sweetener (like date syrup). Peanut butter and banana are a great combination too!



Tofu Manufacturers

- Cauldron marinated tofu pieces, organic plain tofu and organic beech-smoked are available from large supermarkets and health food shops.
www.cauldronfoods.co.uk
- Dragonfly natural, smoked and deep-fried tofu is available in good health food shops.
www.tofu.co.uk/index2.htm
- Clear Spot plain, naturally smoked and marinated tofu are available in good health food shops.
www.clearspottofu.co.uk/products.html
- Mori-nu or Blue Dragon silken tofu is sold in long-life (tetra) packs, so is a handy store cupboard stand-by. One or the other of the two brands can be found in many supermarket big branches, oriental grocers and health food shops.
www.morinu.com
www.bluedragon.com
- Taifun smoked tofu (plain or with sesame seeds and/or almonds); Tofu Rosso; Tofu Basil; Silken Tofu are all available in good health food shops.
www.taifun-tofu.de/en (They are a German company with an English language option on their website.)

Firm tofu

This is sold in chill cabinets in many supermarkets and some health food shops. It will be either plain or flavoured. Plain tofu comes in slabs which are sealed in water-filled plastic bags (except for the loose tofu sold in oriental groceries). See notes above about storage.

Plain tofu can be stir-fried, scrambled, baked and deep fried or made into burgers. It's also very good marinated in soya sauce, crushed garlic and grated ginger, drained then fried. Tofu is excellent in oriental and other world dishes (Chinese, Japanese, Thai, Korean, Indonesian and Vietnamese) but vegan cuisine has invented other specialities during the past few decades (scrambled tofu, for example, is an excellent replacement for scrambled eggs).

Flavoured tofu

Also sold in chill cabinets is firm and comes in the following varieties:

- Marinated tofu pieces are deep fried and delicious. They can be eaten raw in a salad or tossed into hot dishes (like stir-fries or pasta sauce) just before serving.
- Smoked tofu can be eaten raw or stir-fried to make it crispier. It is great added to pasta or rice dishes and also nice in salads, thinly sliced or diced. Try it with avocado slices and home-made vinaigrette. Smoked tofu can be bought in its natural smoked state or else flavoured with sesame seeds or with almonds and sesame seeds together.

- Tofu Rosso is a red-coloured very firm tofu, flavoured with sun-dried tomatoes and herbs. It is delicious cold in salads, thinly sliced in a sandwich or cubed and added to a hot pasta or rice dish just before serving.
- Tofu Basil is green and it's flavoured with basil! Use like Tofu Rosso.

Tempeh

Tempeh is a firm cake made from pressed, fermented soya beans (created with a naturally-occurring, healthy mould. It has a chewy texture and quite strong taste, which makes it very good in pies and stews, especially with a dash of ale, cider or red wine added. In the UK, it is manufactured by Impulse Foods and usually sold in frozen blocks. Impulse also make other varieties of tempeh, including smoky rashers and a chilled fresh variety. You will find their range in good health food shops.

www.impulsefoods.co.uk

Miso

Miso is a delicious paste used as a stock in soups, stews and sauces. It is made from fermenting soya beans together with grains such as barley or rice. It comes in different flavours, ranging from 'sweet' (a pale creamy yellow colour) to a red-brown miso right through to an almost black colour with a 'meaty' tasting flavour. Whichever miso you use, make sure you don't overdo it. The darker varieties in particular are quite salty, so try it a

little at a time. Mix it into a paste with some cold water before adding to hot food, that way you won't destroy the healthy enzymes. Most miso sold in the UK is made by Clearspring or Sanchi. Some miso is sold in clear plastic packs with a screw top and some comes in a jar – just store them in the fridge. Other brands come in a simple plastic package – in that case, transfer the miso to a clean air-tight container like a jar and store in the fridge. The darker varieties keep longer because their higher salt content acts as a preservative.
www.clearspring.co.uk/japanese/miso/clearspring_japanese_miso
www.sanchi.co.uk

Soya Sauce

Pure soya sauce is the business! Shoyu is made from fermented soya beans and wheat, while tamari is made purely from fermented soya beans (it has no wheat so is suitable for a gluten-free diet). Both types are fermented for about a year whereas most commercial soya sauces are not fermented sufficiently and contain added ingredients such as caramel and corn syrup and therefore don't taste nearly as good! Go for the best quality you can afford. Good brands include Clearspring, Essential, Suma, Kikkoman and Sanchi. Again, watch your salt intake and if you can find one, use a low-salt version.
www.clearspring.co.uk/japanese/seasonings/japanese_seasonings
www.sanchi.co.uk

Soya dairy alternatives

Alternative soya 'dairy' products such as soya yoghurt, soya custard, soya cheeses, soya cream and soya ice-cream are also widely available.

Soya Milk

Soya Milk is usually made from soaked, ground soya beans (sometimes from soya flour). It comes in all sorts of varieties, including sweetened and unsweetened, organic and non-organic, fortified with vitamins and minerals and plain. Good quality brands include Provamel, Alpro and Plamil, although most of the supermarket own-brands are also very good. Here at VVF we favour the Provamel unsweetened and fortified with calcium and B12*, but it all depends on your tastebuds and budget! Chocolate, banana and strawberry soya milks are also available and are delicious.

*It is possible to buy organic calcium-fortified soya milk but not organic fortified with calcium and vitamin B12, because of strict organic regulations. However, Alpro and Provamel non-organic varieties are made from ethically sourced beans and are of a high quality. All major supermarkets sell their own-brand organic and non-organic soya milks.

Whatever type you buy, ensure that the beans are not genetically modified (GM). Most reputable soya milk manufacturers in Europe avoid GM beans and source their beans ethically, including Alpro and Provamel.

Yoghurt

■ Alpro yoghurt alternatives are made with soya bean goodness and are naturally low in



saturated fat. They contain absolutely no artificial sweeteners, colours or preservatives and taste great on their own, with fresh fruit or cereal as part of a healthy breakfast.

www.alprosoya.co.uk

- Provamel's thick, creamy alternatives to yoghurt (yofu) are perfect for people who favour organic produce, follow vegetarian or vegan diets, have lactose intolerance or cow's milk protein allergy or simply for those who desire a healthy, varied yet enjoyable diet. www.provamel.com
- Sojasun produce a broad range of desserts with delicate and original flavours to combine pleasure and well-being. <http://en.sojasun.com>
- Sojade produce a range of delicious fruit-flavoured yoghurts. www.sojade.fr (A French company with no English section on its website.)

Soya Cream:

- Alpro and Provamel both produce single cream (see above for links).
- Granovita (Cremovita) vegan friendly soya whipping cream. www.granovita.co.uk
- Soyatoo! available as whipping cream in a carton for pouring when you want a rich cream or whipping to a thick consistency. Also available as squirty spray cream in a can for the convenience of thick cream without the whipping. www.soyatoo.de/us

Stockists

If products are available in supermarkets, this will often mean a large branch, not small local outlets

	Asda	Sainsbury	Tesco	Waitrose	Inde Health/ Oriental (usually)
Miso paste	X	✓	X	✓	✓
Miso soup, dried	X	✓	✓	✓	✓
Soya beans, dried	X	✓	✓	✓	✓
Soya beans, dried and cooked	X	✓ [cartons]	X	X	✓
Soya beans, fresh (edamame)	X	✓	✓	✓	✓
Soya cream, single	X	✓	X	✓	✓
Soya cream, whipping	X	X	✓	X	✓
Soya milk	✓	✓	✓	✓	✓
Soya yoghurt, plain and/or flavoured	✓	✓	✓	✓	✓
Soya sauce (shoyu and/or tamari)	X	✓	✓	✓	✓
Tofu, Cauldron plain	✓	✓	✓	✓	✓
Tofu, Cauldron marinated pieces	✓	✓	✓	✓	✓
Tofu, plain, other brands	X	X	X	X	✓
Tofu, smoked	X	X	X	X	✓
Tofu, other flavoured	X	X	X	X	✓
Tofu, silken	X	X	✓	✓	✓
Tempeh	X	X	X	X	✓
Rice wine and/or mirin	✓	✓	✓	✓	✓
Seaweed, kombu	X	✓	X	X	✓
Seaweed, nori	X	✓	✓	✓	✓
Seaweed, wakame	X	X	X	X	✓
Shiitake mushrooms, dried	✓	X	X	✓	✓
Yeast flakes, nutritional	X	X	X	X	✓

Independent health food shops usually sell a variety of tofu brands, including Taifun, Clear Spot, Dragonfly and Provamel. If you are not near a good health food shop or like to shop on-line, Goodness Direct carries a wide range of these products. www.goodnessdirect.co.uk by e-mail: info@GoodnessDirect.co.uk by phone: 0871 871 6611 (office hours or voicemail, calls charged at 10p per minute) by text: 07736 227255 by fax: 01327 703179 by post: Goodness Direct, South March, Daventry, Northants NN11 4PH

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Nutty Walnut Granola Crunch

Makes 20 portions. Keeps well in an air-tight container | 70 minutes

Start the day as you mean to go on with this lovely, crunchy-style cereal. Unlike commercial types, it isn't laden with refined sugar. Serve with soya/rice milk and fresh fruit!

- 600g/1lb 5oz jumbo or porridge oats
- 150g/5oz barley or brown rice flour
- 150g/5oz coarsely chopped walnuts
- 150g/5oz sunflower seeds (not in their shells)
- ½ tsp salt
- 225ml/8fl oz apple juice concentrate. If you can't get this, increase the amount of syrup, as below
- 120ml/4fl oz date, agave or maple syrup (Meridian makes all three types)
- 2 tbsp rapeseed [canola] oil – most plain vegetable oil is rapeseed. Check the ingredients when buying
- 2 tbsp water
- 2 tsp vanilla extract
- 150g/5oz raisins

To serve with each portion: soya milk and fresh fruit of your choice.

- 1 Preheat oven to 170°C/325°F/Gas Mark 3.
- 2 Combine oats, flour, walnuts, sunflower seeds and salt in a large bowl.
- 3 In a separate bowl, whisk together juice, syrup, oil, water and vanilla.
- 4 Pour over dry ingredients and mix thoroughly until evenly moistened.
- 5 Divide mixture between two large oven trays, spreading out into a 2cm/1 inch thick layer.
- 6 Bake until golden brown, stirring well every 15 minutes – use a kitchen timer or the timer on your mobile.
- 7 Cooking time total 50-60 minutes.
- 8 Remove from oven and stir in raisins while mixture is still hot, to plump up the raisins.
- 9 Let the granola cool completely and then store in airtight containers in a cool place.
- 10 When you are ready to eat it, serve with soya milk and fresh fruit.



French toast

Serves 4-6 | 20-30 minutes

This is the vegan version of French toast or what some folk call 'eggy bread'! As a child, I used to eat the egg version with tomato or brown sauce, but in North America it is often served as a sweeter snack and sometimes as part of a cooked breakfast. Whether you eat it on its own or with a pile of veggie rashers, sausages and scrambled tofu, try it drizzled with maple syrup and a sprinkling of cinnamon! It's also a great way to use up slightly stale bread.

- Half a pack of firm silken tofu (approximately 175g/6oz)
- 120ml/4fl oz soya milk
- 1 tbsp vegetable oil
- 1 tbsp nutritional yeast flakes (Marigold's Engevita brand, sold in health food stores or good delis)
- 4-6 slices of bread, medium thick – I prefer good quality white, but granary or wholemeal would also work well. The number of slices you can make depends on whether the bread is from a large or small loaf
- Oil spray

To serve (optional): maple syrup and cinnamon powder

- 1 Blend the tofu until almost smooth.
- 2 Add the soya milk, oil and yeast flakes.
- 3 Heat a non-stick frying pan until hot. Spray with a couple of squirts of oil spray.
- 4 Depending on the size of your frying pan, coat 1-2 slices of bread in the mixture and place in the pan.
- 5 Cook for several minutes on each side until quite crispy and golden brown – make sure the bread isn't soggy.
- 6 Repeat the process until the mixture is used up.
- 7 Serve hot.



Pancakes – Sweet or Savoury

Makes approximately 8 | 15-20 minutes

These pancakes are very easy to make – just use a good heavy or non-stick frying pan. Being egg and dairy-free makes them cholesterol-free to boot! Don't worry if the first pancake doesn't turn out too well – the rest will be fine.

- 175ml/6fl oz soya milk
- 175ml/6fl oz water
- 175g/6oz plain flour, sieved
- 2 tbsp chick pea flour, sieved
- 1 tsp baking powder
- 1 tbsp sunflower oil
- Pinch of salt
- Additional oil for frying – or low-cal spray if using non-stick pan

To serve: maple or date syrup and/or lemon juice

- 1 Pre-heat oven to 170°C/350°F/Gas Mark 3.
- 2 Place all of the ingredients, except the oil for frying, in a blender and blend until smooth. Alternatively, place all dry ingredients in a mixing bowl, make a well in the middle and add the liquid gradually. Use a whisk and beat until there are no lumps.
- 3 Heat a small amount of oil in a frying pan until piping hot. Drain off any excess (or use low-cal spray, as above).
- 4 Pour enough of the batter mixture in to the frying pan to thinly cover the bottom. Swirl the

pan gently to distribute the batter evenly.

- 5 Fry on one side for about a minute. Loosen the edges with a spatula and flip.
- 6 Fry the other side for another minute or until done.
- 7 Remove from pan and keep warm in the oven on a low setting.
- 8 Add more oil/spray to the pan if and when necessary and repeat steps 3 to 6 until all of the mixture is used up.
- 9 Serve drizzled with syrup/lemon juice.

To make a simple savoury filling

- Oil spray or 2 tsp olive oil
- 1 small onion (red or white), chopped fine
- 1 garlic clove, crushed
- 100g/3½oz mushrooms, sliced quite thick
- 1 tsp mixed dried herbs
- A little allspice or ground nutmeg
- 200g/7oz spinach, chopped roughly (baby spinach is best – if using bigger leaves, remove tough stalks)
- 1 tbsp shoyu or tamari soya sauce

- 1 In a heavy-bottomed saucepan or non-stick frying pan, heat the oil.
- 2 Sauté (gently fry) the onion and garlic until the onion becomes translucent.
- 3 Add the mushrooms and fry for a few minutes until they start to turn golden brown.
- 4 Add herbs and allspice/nutmeg.

5 Add the spinach and cook until it starts to wilt.

6 Add the soya sauce and stir everything well so the flavours get well mixed in.

7 Spoon the filling into hot pancakes, roll them up and serve.

Particularly good with the vegan version of a 'cheesy' tahini and miso sauce (see recipe opposite) – but one of those supermarket fresh tomato sauces in a tub would be nice too. Just check it doesn't contain cream!





Instant Tahini and Miso Sauce

- 180ml/6fl oz water
- 6 tbsp tahini
- 2 tbsp nutritional yeast flakes (Marigold's Engevita brand, sold in health food stores or good delis)
- 1 tbsp fresh lemon juice
- 2 tbsp shallot or medium red onion, finely chopped
- 2 tbsp light miso

- 1 Combine all ingredients and blend until smooth.
- 2 Heat gently until warmed through.



Andy's Tofu Scramble

Serves 4 | 15 minutes

This is a great alternative to scrambled eggs. It's good on its own with toast – or added to a big weekend fry-up! Andy Murray, cookery writer, kindly made his special version of the dish for my lunch while I was interviewing him for *Viva!Life* magazine. It was so delicious that I have made it ever since – and won lots of people over to the joys of tofu on the strength of it! As with all the recipes that use tofu instead of eggs, doing so will immediately cut cholesterol and unhealthy fat levels.

- 1 tbsp sunflower oil or other plain, non-olive oil
- 1 small red onion, finely chopped
- 1-2 garlic cloves, crushed
- 1 tbsp plain white flour (use gluten-free if desired)
- 100ml/3fl oz soya milk (add more if mixture too thick)
- 225g/8oz plain firm tofu, crumbled
- 2 medium vine tomatoes, finely chopped
- 2 tsp wholegrain mustard
- ½ tsp mixed dried herbs
- 6 fresh basil leaves, torn
- Salt and freshly ground black pepper

1 In a heavy-bottomed pan, heat the oil and fry onion and garlic until onion is translucent – about 3-5 minutes. Add a tablespoon of water if the onion starts to stick.

2 Stir in the flour and let it cook for a few seconds before adding the soya milk a little at a time to make a roux (paste). Stir with a wooden spoon to avoid lumps.

3 Add the crumbled tofu, tomatoes, mustard and dried herbs.

4 Stir, still on a low heat, for about 3 minutes.

5 Toast some bread.

6 Add the basil leaves to the scramble and season to taste.

7 Spread margarine on the toast if desired then spoon scramble over it.



With thanks to *The Heretic Vegan Cookbook* by Andy Murray, sold by Viva! www.viva.org.uk or 0117 944 1000

Edamame, Pea & Mint Soup

Serves 4-6 | 30 minutes

A gorgeous, bright green soup. Rich in protein, iron and easy to make. Fantastic as a starter or a hearty lunch with a wholemeal roll.

- 225g/8oz leeks
- 1½ tbsp olive oil
- 1 small onion or half a large onion, roughly chopped
- 225g/8oz potatoes, peeled and diced
- 1.2L/2 pints light vegetable stock OR the same amount of hot water with 4 tsp vegan bouillon powder added
- 100g/generous 3oz edamame beans, sold in freezer compartments of large supermarkets or health food shops
- 125g/generous 4oz peas, fresh or frozen
- One good handful/10g fresh mint leaves, roughly chopped. Set aside a couple of sprigs for garnish
- 3 tbsp soya milk
- Black pepper
- Salt if necessary

1 Prepare the leeks: top and tail, chop roughly then soak in cold water for a few minutes to loosen dirt and grit. Rinse and agitate thoroughly in running water then drain.

2 Heat the oil in a large saucepan and sauté (gently fry) the onion and leeks until the onion is soft.

3 Add the potatoes and sauté for a few seconds to coat in oil then add the stock.

4 Add the edamame, peas and mint. Bring the mixture to the boil and turn down to simmer for 20 minutes.

5 About 5 minutes before the end, add the soya milk.

6 Blend the soup until smooth.

Serve with the sprig of mint.



Miso Soup

Serves 4 | 20 minutes

An excellent, tasty variation on the traditional recipe. The Japanese usually use daikon, a large, mild-flavoured white radish that is also known as mooli and is sold in Asian shops. Swede would be a good substitute (the round yellow root vegetable known by the Scots as turnip!). Slice into thin strips. Otherwise, stick with the celery and red pepper in the recipe.

- 4-5 dried shiitake mushrooms* (if using fresh, omit soaking process – just chop roughly and add to stock – but remember to add another 500ml of water to the soup)
- 1L/35fl oz vegetable stock. Use home-made or use vegan bouillon powder such as Marigold red tin
- 1 strip wakame or kombu seaweed**
- 1 large carrot, diced
- 1 stick celery, diced
- 1 red pepper, chopped
- Half a bunch spring onion, finely chopped
- 1 tbsp mirin/rice wine or sherry of any flavour (Harvey's is vegan)***
- A dash of aminos or good quality soya sauce (see Ingredients section on page 33)
- Cooked brown rice or cooked wholemeal noodles. Try buckwheat (soba) if you can – delicious and also gluten-free
- 3 tbsp miso mixed into a paste with a little cold water. Use the red-brown type if

available. If only a darker variety is available, it will still taste good in the soup, but reduce the amount as it will be more salty

Optional:

- Half a pack of cubed tofu or half a tin of aduki beans, rinsed and drained
- Nori sprinkles for garnish and extra flavour/goodness

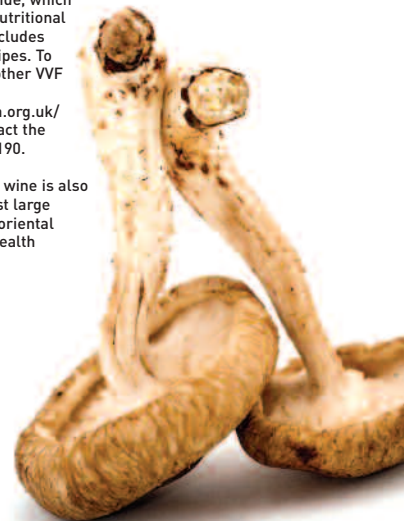
- 1 Soak the shiitake mushrooms in about 500ml/17fl oz just boiled water. Cover and set aside.
- 2 Place the stock and wakame/kombu strip in a medium saucepan. Bring to the boil then reduce heat to a simmer.
- 3 Add the carrot, celery, pepper and spring onions to the pan.
- 4 Add the mushrooms and their soaking water.
- 5 Cook for 3-5 minutes, making sure the vegetables don't overcook.
- 6 If you want the traditional clear miso broth, remove the wakame/kombu and shiitake mushrooms at this stage and discard. If you prefer to keep them for taste and nutrition, blend them in some of the stock and return to the pan.
- 7 Add the mirin, rice wine or sherry and the aminos or soya sauce.
- 8 Add the cooked rice or noodles.

- 9 Remove pan from heat and add the miso paste (don't boil as this destroys some of the miso's healthful benefits). Stir thoroughly.
- 10 Add extras if using and serve hot.

*Dried shiitake mushrooms are found in health food shops and oriental groceries. Fresh shiitakes are sold in some supermarkets.

**Sea vegetables: nori, wakame and kombu are mentioned in the miso soup recipe. Sea vegetables are eaten widely in Japan and were also popular in the UK until a few generations ago. If you are interested in finding out more about them after reading this guide, check out VVF's *Fish-Free for Life* guide, which explains their nutritional qualities and includes more lovely recipes. To order this and other VVF materials go to www.vegetarian.org.uk/vvfshop or contact the VVF 0117 970 5190.

***Mirin or rice wine is also available in most large supermarkets, oriental groceries and health food shops.





Oriental Bean Salad with Sweet Chilli, Lime & Coriander Dressing

Serves 4 (or 2 if used as a lunch/main meal) | 10-15 minutes

Fresh, tasty and so nutritious you can feel your body smiling!

- 100g/generous 3oz mange tout or snow peas
- 100g/generous 3oz fine beans, fresh or frozen
- 100g/generous 3oz edamame beans (fresh soya beans, usually sold frozen – available from large supermarkets or health food shops)
- 100g/generous 3oz of EITHER broccoli florets or baby broad beans, fresh or frozen
- 2 large handfuls of mixed salad leaves of your choice. Rocket and watercress are a good combination

Dressing

- 4 tbsp sweet chilli sauce (sold in bottles)
- 2 tbsp fresh lime juice (approximately one lime's worth)
- 2 tbsp finely chopped fresh coriander

1 Make the salad dressing by combining all three ingredients and set aside.

2 Lightly steam the mange tout, fine beans, edamame beans and broccoli or broad beans until *al dente* – just cooked but with a little bite to them – about 3 minutes.

3 Allow vegetables to cool if time – if not, rinse in cold water.

4 Mix the salad leaves with the vegetables.

5 Place in a nice bowl and serve with the sauce on the side.



Tofu Satay Skewers

Serves 2-4 | 20-25 minutes

These are really good – try on a barbecue as well as in the kitchen. The satay (peanut) sauce is a great staple too and is fantastic with lots of other dishes, such as stir-fries and rice or noodles.

Satay Sauce

- 125ml/8 level tbsp smooth peanut butter
- ½ tbsp grated root ginger
- ½ tbsp garlic, crushed (about 2 medium cloves)
- 2 tsp date syrup
- 2 tsp tomato purée
- 180ml/6.5fl oz hot water
- 2 tbsp cider vinegar
- 1 tbsp soya sauce
- Large pinch chilli powder

Tofu Skewers

EITHER:

- 1 tbsp shoyu or tamari soya sauce
- 2 tbsp water
- 1 clove garlic, crushed
- 1 pack firm tofu – plain or smoked – cubed

OR:

- 1 pack marinated tofu pieces
- 1 green pepper, cut into medium squares
- 1 pepper of another colour, eg red, yellow or orange, cut as above

- 4-8 steel or wooden skewers
- Oil or oil spray for frying

- 1 If cooking tofu from scratch, mix soya sauce, water and garlic in a bowl. Toss tofu cubes in mixture and set aside.
- 2 If using wooden skewers, soak in cold water (this stops them burning under the grill!).
- 3 Pre-heat grill to medium.
- 4 Assemble satay sauce ingredients in a pan. Mix together until smooth and warm gently until thickened.
- 5 If too thick, add more hot water but adjust seasoning to taste. Keep warm but not boiling.
- 6 Drain tofu cubes* and gently fry until golden in a hot, oiled non-stick frying pan. (This process can be omitted if using smoked tofu.)
- 7 Thread the skewers with alternative pieces of pepper and tofu. Brush with a little oil or squirt with oil spray.
- 8 Cook under the grill for 5-10 minutes, turning regularly to stop the kebabs from burning.
- 9 Serve with hot satay sauce.

* Any mixture that is left can be kept and added to soups, gravies or stir-fries.





Asparagus and Cheatin' Meatie Spears with Vegan Hollandaise Sauce

Makes 12 spears | 15 minutes – make the hollandaise first so you can keep a close watch on the asparagus spears!

Vegan Hollandaise Sauce

- 3 tbsp white wine vinegar
- 6 peppercorns
- 1 dried bay leaf
- 40g/1½oz silken tofu
- 125g/4oz vegan margarine, eg Pure
- 1 tsp turmeric
- Lemon juice, salt and pepper to taste

- 1 Put the vinegar in a small pan with the peppercorns and bay leaf.
- 2 Reduce the vinegar over a high heat until there is only 1 tbsp left.
- 3 Strain the peppercorns and the bay leaf from this reduction.
- 4 Put the silken tofu in a food processor with the vinegar reduction.
- 5 Gently melt the margarine, stirring with a wooden spoon.
- 6 Add the turmeric and turn the food processor on and slowly pour the margarine on to the tofu with the motor still running. The sauce will start to thicken.

- 7 If the sauce is too thick, add a little hot water.
- 8 Season to taste with salt and pepper and a little lemon juice.

Asparagus Meatie Spears

- 12 fat spears of asparagus
- 30g/1oz vegan margarine, eg Pure
- 1 packet Redwood Cheatin' Pepperoni Style slices or Ham Style slices

- 1 Preheat oven to 180°C/350°F/Gas Mark 4.
- 2 Cut Cheatin' slices into strips and wrap around the asparagus.
- 3 Brush each spear lightly with margarine.
- 4 Cook for 3-4 mins until lightly roasted.
- 5 Serve with the hollandaise sauce.



Tofu Muttar Panir

Serves 4 | 30-35 mins

Traditionally made with Indian curd cheese, this recipe works well with tofu. Serve hot with rice, lentil dahl and chapattis for a real feast!

Tofu 'Panir' Chunks

- 1 block plain firm tofu (about 225g/8oz)
- 1 tbsp oil (plain sunflower or vegetable – not olive oil) OR 2-3 squirts low-cal spray

Curry

EITHER use these spices:

- 2½cm/1 inch piece fresh ginger, coarsely grated
- 1 tsp turmeric powder
- ½-1 tsp chilli powder, according to how hot you like your curry
- 1 tsp cumin seeds
- 2 green cardamoms, skinned
- 2½cm/1 inch piece cinnamon, broken

OR

- 2 tbsp curry paste or powder of your choice
- 1 tbsp plain oil (not olive)
- 2 onions, finely chopped
- 1 tsp poppy seeds
- 1 tsp mustard seeds, black or brown
- 1 tsp salt
- 300g/10oz fresh or frozen peas
- 4 tomatoes, chopped (fresh or whole tinned)

- 300ml/10fl oz water
- 1 tsp garam masala
- 1 tbsp lemon juice

- 1 Drain tofu well on kitchen paper or a clean tea towel and press quite firmly. This mops up excess water.
- 2 Chop tofu into 12 chunks.
- 3 Fry in the oil or low-cal spray until golden on all sides.
- 4 Drain and let it cool. Set aside.
- 5 If using spices, grind ginger, turmeric, chilli, cumin, cardamoms and cinnamon, adding a little water to form a paste.
- 6 Fry onions, poppy seeds and mustard seeds until golden.
- 7 Add curry paste (either from the recipe or ready-made) and salt. Fry for 2 minutes.
- 8 Add peas and tomatoes and stir-fry for a few minutes, add water then cover and cook until peas are tender.
- 9 Add tofu cubes and stir in gently but well so they soak up the flavours and are coated with the sauce.
- 10 Before serving, sprinkle the curry with garam masala and lemon juice.





Tempeh & Mushroom

Serves 4-6 | 30-35 minutes

A big, hearty and delicious pie that is fairly quick and easy to make. Cooking the pastry separately saves time, too (you can cook the pastry with the pie but it takes longer and may go a little soggy). Good served with steamed greens and/or carrots.

- 2 tbsp olive oil
- 1 medium-large onion, chopped
- 1 clove garlic, crushed
- 200g/7oz mushrooms, chopped if medium or large, left whole if small button variety
- 1 pack tempeh, chopped into cubes – this can be done while it is frozen, but needs a big sharp knife. Otherwise leave it to defrost in the fridge a few hours before it is needed
- 6 tsp vegan gravy granules (plain Bisto is fine) made up with 300g/12fl oz boiling water – this makes a thick gravy which holds the filling ingredients together well
- 1 tbsp Dijon mustard
- 1 tsp mixed dried herbs – or try tarragon on its own
- 1-2 tsp shoyu or tamari type soya sauce (see page 33)
- 2 tbsp sherry or red wine
- 100g/3oz frozen peas
- Black pepper (gravy granules and soya sauce should provide enough salt)

om Pie

Pie crust

- 1 pack Jus-Rol puff pastry sheet (sold fresh or frozen in most supermarkets) OR a pack of Jus-Rol solid puff pastry, rolled out by hand
- Oil spray or a little vegetable oil
- A little soya milk to brush top of pastry

- 1 Pre-heat oven to 225°C/450°F/Gas Mark 7.
- 2 Heat olive oil in a medium-large saucepan.
- 3 Sauté (gently fry) onion and garlic until onion is translucent.
- 4 Add mushrooms and cook for 5 minutes.
- 5 Add the tempeh and gently stir in with rest of vegetables to coat with oil.
- 6 Make the gravy as above then add the mustard, herbs, soya sauce and sherry/wine and mix in well.
- 7 Add the peas, gravy mixture and all other ingredients to the stew (except the pastry and soya milk).
- 8 Stir carefully to mix in well, taste and season if necessary, then turn down heat and leave to simmer.
- 9 Meanwhile, choose an oven-proof dish (or individual oven-proof dishes) that will hold the tempeh and mushroom stew.
- 10 Use its shape to cut out a pastry lid – cut out several small shapes if you are using individual pie containers.
- 11 Lightly oil a non-stick baking sheet or tray

and place the pastry lid(s) on it. If using several lids space them out on the baking tray. Brush with a little soya milk and bake in the hot oven for approximately 20 minutes, or

according to the packet instructions – the pastry should be well risen and golden brown. 12 Spoon the stew into dish or dishes, place the pastry lid(s) on top and serve immediately.

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Corin Jeavons/Viva!

Sticky Tofu Stir-fry

Serves 4 | 35 minutes

This is a great introduction to tofu for those who have not tried it before. Kids and adults love this dish!

Vegetables

- 1 tbsp sesame or sunflower oil
- 4 spring onions, sliced
- 1 red pepper, roughly chopped
- 2cm/1 inch cube of fresh ginger, finely chopped
- 110g/4oz carrots, cut into julienne strips
- 6 baby corn, quartered
- 50g/1¾oz mange tout, halved
- ½ tsp Chinese Five Spice powder
- 110g/4oz mushrooms, sliced
- 110g/4oz beansprouts

Sticky Tofu

- 450g/1lb firm tofu
- 1 tbsp sesame or sunflower oil
- 1 tbsp shoyu or tamari soya sauce
- 2cm/1 inch cube fresh ginger, finely chopped
- 1 clove garlic, finely chopped
- ½ tsp Chinese Five Spice powder
- 1 tsp coriander powder
- 1 tsp paprika
- 1 tbsp tomato ketchup or purée
- 1 tsp brown sugar
- Juice of half a lime
- 2 tsp sesame seeds

- 1 tbsp orange or pineapple juice
- 1 tbsp hoisin sauce (available from large supermarkets or oriental grocery shops)

- 1 If serving with brown rice, put it on now – it takes about 25-30 minutes. If using noodles, put on to cook a bit later.
- 2 Prepare all of the vegetables and leave to one side.
- 3 Rinse and drain the tofu and chop into cubes.
- 4 Heat the oil for tofu in a non-stick frying pan and add the tofu.
- 5 Keep the tofu moving regularly and gradually add all the tofu seasoning ingredients.
- 6 Once it is nicely browned, sticky and shiny, remove the tofu from the heat and leave to one side.
- 7 In a wok or large frying pan, heat the oil for the vegetables and add all of the ingredients, except for the mushrooms and beansprouts.
- 8 Stir-fry for a few minutes, then add the mushrooms and fry until they are browned.
- 9 Add the beansprouts and stir for a further minute.
- 10 Add the tofu.
- 11 Serve over the rice or noodles.

To serve: brown rice or noodles – wholewheat or soba (buckwheat) noodles are excellent.

Supersonic Noodles

Serves 4-6 | 10-15 minutes

So called because of the speed of this dish! Wholewheat noodles are good and easily available – but if you can't find them, try soba (buckwheat) or other non-wheat varieties for a change.

- 500g/18oz noodles
- 2 tsp rapeseed or other mild-flavoured oil
- 3 cloves garlic
- 1-2cm/½-¾ inch cube fresh ginger
- Pack of Cauldron Marinated Tofu pieces OR a pack of smoked tofu, cubed
- Shoyu (soya sauce) to taste
- 40g/1½oz mixed seeds (eg sunflower/pumpkin/sesame)
- ½ green chilli, deseeded and finely chopped OR pinch dried chilli powder - optional
- 450g/1lb carrots, grated large
- Bunch parsley, chopped fine
- Squeeze of lime juice

- 1 Boil kettle.
- 2 Put noodles into a pan and pour enough boiled water over them to cover well.
- 3 Boil according to packet instructions. Rice noodles take only 2-3 minutes, whereas wholemeal or soba will take longer. Time the rest of the recipe accordingly. When ready, drain. During this time, peel and crush garlic and peel and grate ginger. Put them in oil and fry very gently (almost just warming) in a frying pan.
- 4 Add tofu pieces.
- 5 Add shoyu and mixed seeds.
- 6 If using, add a little fresh chopped chilli or a pinch of chilli powder.
- 7 Stir in noodles, season with salt and pepper then add grated carrots and chopped parsley.
- 8 Drizzle the lime juice over everything, toss and serve immediately.



Chava Eichner

Smokey Stuffed Baked Potatoes

Serves 4-8 | 40-45 minutes if using a microwave to cook the potatoes initially before crisping up in the oven | 60-90 minutes in a conventional oven plus another 20 minutes in oven to crisp up.

These make a light lunch served on their own with a few salad leaves or a tasty side dish to accompany a hearty bean stew or main salad dish.

- 4 large baking potatoes
- 1 pack smoked tofu (use Taifun if you can get it – available from health food shops or delis) – otherwise another brand will do but won't be so firm
- 1 tbsp oil or a couple of squirts oil spray
- 1 tbsp vegan margarine
- Dash of soya milk
- 1 tsp paprika
- Black pepper

- 1 Pierce each potato with a skewer or sharp knife in several places.
- 2 Cook the potatoes. If you are using a conventional oven, allow 60-90 minutes at 200°C/400F/Gas Mark 6. Smaller potatoes will take less time. If you are using a microwave, cook the potatoes two at a time until tender – approximately 6-10 minutes each, but they may need longer.
- 3 If you have microwaved the potatoes, pre-heat the oven to the above temperature.
- 4 Chop the smoked tofu into small pieces.
- 5 Heat the frying pan, add the oil or spray and fry the tofu until browned and starting to crisp.
- 6 Let the potatoes cool a bit then cut in half lengthways and carefully scoop out the insides. Try to leave a layer of potato of about 2mm/¼ inch all around in so you don't rip the skins.
- 7 Mash the potato skins with margarine and soya milk to make creamy.
- 8 Add the tofu pieces and mix in well.
- 9 Spoon the mixture back into the skins. Lightly oil or spray a non-stick oven tray, sprinkle the stuffed potato halves with the paprika and bake for 10-15 minutes.
- 10 Serve hot, with a sprinkle of black pepper if desired.



Tofu burgers

Makes 4 large or 6 small burgers | 30 minutes

These are simple to make and delicious. The friends I tested these on loved them – one was a meat-eating biker who was surprised how good they were. I used a burger press (about a fiver from good hardware or kitchen stores) to make the burgers easy to cook. It was the first time I'd used one and I loved it! The press is easy and quick to use and works well with bean burgers too. Just remember to peel off the waxed paper circles before you cook the burgers! Otherwise use cookie cutters or a clean coffee jar lid.

- 1 tbsp olive oil
- 1 medium onion, finely chopped
- 1 clove garlic, crushed
- 225g/8oz firm plain tofu
- 3 tbsp oats (porridge oats are fine)
- 2 tbsp gram flour (also called besan) or chick pea flour, available from big supermarkets, ethnic food shops or health food shops
- 2 shoyu or tamari style soya sauce
- 1 tsp paprika
- 1 tsp mixed herbs
- ½ tsp allspice
- More oil or oil spray to fry burgers



- 1 In a medium saucepan, heat the oil. Sauté (gently fry) the onion and garlic until onion is translucent.
- 2 Turn off heat, add tofu and mash the mixture with a potato masher until soft.
- 3 Add all other ingredients except for frying oil. Mix in until everything is thoroughly integrated.
- 4 Make 4 burgers – see notes above.

- 5 If you aren't using a burger press you may wish to chill the burgers for a few minutes to make cooking easier.
- 6 In a frying pan – preferably non-stick – heat the oil or spray. Gently fry the burgers for a few minutes until golden brown on each side.
- 7 Good served on rolls with salad, relish and vegan mayo – or with baked potatoes.

Martin Shaw's Chilli Non-Carne

Serves 4-6 | 30 minutes

This is quick and easy-to-make, filling, cheap and very tasty. It's one of our best-loved recipes by one of our best-loved actors and has been fed to literally tens of thousands of people at the Incredible Veggie Shows!

For a filling crowd-pleaser, serve with plain soya yoghurt and one of the following:

- baked potatoes with crunchy skins
 - warm bread
 - garlic bread (use vegan margarine such as Pure)
 - warm tortillas
 - any quickly-cooked grain such as quinoa or rice
-
- 2 tbsp sunflower oil
 - 1 large onion, chopped
 - ½ red pepper, chopped
 - 3 cloves garlic, crushed
 - 1 medium courgette, chopped in half lengthways, then sliced into semi-circles
 - 100g/4oz mushrooms, chopped
 - 225g/8oz frozen veggie mince (eg Realeat, Fry's, Redwood and Asda own-brand are vegan) available from supermarkets and health food shops OR the equivalent weight of cooked whole lentils. (About 1 tin, drained and rinsed)
 - ½-1 tsp mild chilli powder (or less to taste)

- 1 tsp paprika
- 1 tsp cumin
- 2 x 400g tins chopped tomatoes
- 1 tbsp tomato purée
- 1 tbsp peanut butter
- 100g/4oz sweetcorn, rinsed and drained
- 100g/4oz kidney beans, rinsed and drained – if using tinned

To serve

- 225g plain dairy-free yoghurt such as Sojasun (health stores) or Alpro Yofu (supermarkets and health stores)
- Bunch of fresh coriander, roughly chopped

Optional:

- 1 avocado, peeled and chopped
- Hot pepper sauce for those who like an extra kick!

- 1 Fry onion and red pepper in oil until soft.
- 2 Add garlic, courgette and mushrooms and cook until mushrooms are golden brown.
- 3 Add mince and spices and fry 4-5 minutes, stirring constantly. (If mixture sticks, add some of tinned tomato juice.) If using cooked lentils, add at stage 6.
- 4 Add tinned tomatoes, tomato purée and peanut butter, stir well and simmer for 10 minutes over a low heat.
- 5 Add sweetcorn and kidney beans to chilli

and cook for a further 2-3 minutes.

6 Mix the soya yoghurt and chopped coriander.

7 Serve the chilli hot with accompaniments of your choice (chopped avocado), plus the bowl of coriander yoghurt on the side.

NB Unless you are allergic or keeping a strict eye on your fat levels, don't be tempted to omit the peanut butter, as it adds a subtle but deliciously creamy taste to the chilli.







Creamy Baked Cheesecake

Serves 6-8 | 45-50 minutes, including baking time

This baked cheesecake is lovely. It is lightly flavoured with rosewater and raisins, making it fragrant and creamy without being sickly. It also lends itself to other flavourings. For example, try omitting the rosewater and raisins and use 1 tsp of vanilla essence and top with fresh fruit of your choice. Or grate some fresh ginger and add lime juice and zest – omit raisins or try chopped unsulphured apricots.

- 200g/7oz vegan biscuits, eg ordinary Hobnobs (ie, not chocolate-coated!)
- 75g/2½oz vegan margarine, eg Pure
- 1 pack firm silken tofu, with liquid
- 200g/7 oz Tofutti Original vegan cream 'cheese' (from health food shops)
- 1 tbsp vegetable oil
- 2 tbsp golden syrup
- ½ tsp vanilla essence
- 4 tsp rosewater
- 3 tsp arrowroot or cornflour
- 2 tbsp raisins

Topping: the baked cheesecake looks good on its own but you might want to sprinkle some shelled pistachio nuts on top.

1 Preheat the oven to 180°C/350°F/Gas Mark 4.

2 Grind the biscuits until there are no lumps left. Use a food processor if you have one, but if not, place in a strong plastic bag, tie up and crush with a rolling pin or similar.

3 Melt the margarine in a saucepan then add the biscuit crumbs. Mix well so the fat is completely absorbed.

4 Spread the crumb mixture in a lightly oiled non-stick cake tin and press down firmly. Bake in the oven for 5 minutes. An 8 inch square tin would do, or a 7-8 inch round springform tin with a loose bottom.

5 Meanwhile, blend the tofu until very smooth. Add the remaining ingredients – except the raisins – and blend well. Stir in the raisins.

6 Remove biscuit crumb base from oven, spoon the cream cheese mixture over the top and bake for 30-35 minutes. Remove from oven and allow to cool and set. Serve when cool.



Raspberry & Almond Syllabub

Serves 4 | 5-10 minutes plus chilling time
Elegant and gorgeous, this attractive dessert is also incredibly quick and easy to make.

- 110g/4oz silken tofu (red or blue packet)
- 225ml soya cream (approximately 1 small tub of Alpro/Provamel single OR Granovita or Sojatoo double 'cream'). These products are available from health food shops and some large supermarkets. The single variety is less thick so will make a more runny syllabub. Adjust the sugar to taste if using the double variety as it is quite sweet already.
- 225g/8oz raspberries
- 15g/1 tbsp caster sugar
- 1½ tbsp ground almonds
- Optional: ½ tsp of orange flower water
- Flaked almonds to decorate

- 1 Blend the tofu until completely smooth.
- 2 Whisk into the cream until thoroughly mixed.
- 3 Blend two-thirds of the raspberries and add to cream together with sugar.
- 4 Stir in the ground almonds followed by the remaining whole raspberries.
- 5 Put in the fridge to chill. You may want to spoon the mixture into pretty, individual glasses or pots – or coffee or espresso cups.

6 Meanwhile, toast the flaked almonds for the garnish. Place them in either a dry frying pan or on tin foil under grill, stirring occasionally. Don't take your eyes off them – they brown suddenly!

7 When syllabub is chilled, remove from fridge, decorate and serve.



Corin Jeavons/Vival

Chocolate Mousse

Serves 8-10 – very rich | 25 minutes, plus chilling time.

The perfect recipe – it's lip-smackingly delicious, very quick to make and nutritious! Serve in little espresso cups for a sophisticated feel, or in glasses interlaced with non-dairy cream... or with chopped strawberries or raspberries.

- 455g/1lb silken tofu (red packet) – available in good supermarkets or health stores.
- 285g/10oz dairy-free dark chocolate
- 3 tbsp maple syrup
- 1 tsp vanilla extract
- Pinch salt
- 1tbsp brandy (optional)

- 1 Line a sieve with kitchen paper and place tofu inside. Cover tofu with paper and place a weight on top (such as a tin of beans laid on its side).
- 2 Allow the tofu to drain for about 15 minutes, or until about 80ml/3fl oz has drained out.
- 3 Blend tofu in a food processor or blender until just smooth.
- 4 Soften chocolate with maple syrup in a double boiler (or bowl over pan of hot water), over a low heat.
- 5 Stir gently with a rubber or plastic spatula until the mix has melted and combined.

- 6 Pour chocolate mixture with vanilla extract and salt into processor with the tofu. Add brandy if using.

- 7 Mix until creamy, scraping down sides once or twice to ensure everything well mixed in.

- 8 Refrigerate in individual serving dishes of your choice and allow to set in the fridge for an hour or so.



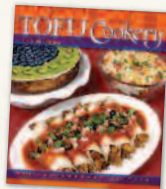
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