

How Soy Became Known As A "Health Food"¹



Let's review a bit of the history behind soy that created this misperception in the public's mind.

Years ago, tropical oils, such as palm and coconut oil, were commonly used in American food production. However, these are obviously not grown in the US. With the exception of Hawaii, our climate isn't tropical enough.

Spurred on by financial incentives, the industry devised a plan to shift the market from tropical oils to something more "home grown." As a result, a movement was created to demonize and vilify tropical oils in order to replace them with domestically grown oils such as corn and, primarily, soy.

For the most part, they've been very successful in their campaign to paint soy in a healthy light. So, the information I have to share with you may disappoint and challenge many of you, especially vegetarians, because vegetarians and vegans use soy as one of their primary sources of protein.

But I'm here to tell you that after studying this issue very carefully, I'm convinced that unless the soy you're consuming is fermented, you're putting your health at risk.

There's only one type of soy that can be construed as a health food, and that is fermented soy. Examples of health-promoting fermented soy foods include:

- Natto
- Miso
- Tempeh

¹ Article taken from <http://www.mercola.com/>

Natto is actually a phenomenal food. It's a fermented soy product that can be a bit challenging to locate, but you can usually find it in Asian food stores. It's very high in vitamin K2, which is a phenomenal vitamin, much like vitamin D.

Together, vitamin K2 and vitamin D provide a large number of significant health benefits, such as improving bone density and reducing your risk of heart disease and cancer, just to name a few. Natto has probably the highest concentration of vitamin K2 out of any food.

Miso and tempeh do not contain vitamin K2 but they are also fermented forms of soy that are excellent sources of health-promoting natural probiotics.

The fermentation process is what makes the soy a healthy addition to your diet, as it breaks down the goitrogens, isoflavones and other harmful elements in the soy.

It's important to realize that tofu is NOT a fermented soy product, and should not be consumed if you want to avoid the health problems associated with non-fermented soy.

It is also important to understand that while fermented soy is healthier for you, it is not wise to consume it in large quantities because it is still loaded with phytoestrogens, like isoflavones, which can cause detrimental feminizing effects.

What's So Bad About Unfermented Soy?

One of the primary reasons for avoiding soy products is because the vast majority of soy grown in the US is genetically modified (GM) soy. The GM variety planted in 91 percent of US soy acres is Roundup Ready—engineered to survive being doused with otherwise lethal amounts of Monsanto's Roundup herbicide.

Monsanto produces both the Roundup Ready soy seeds and the herbicide Roundup.

The logic – you can call it that after all factors are considered – behind GM crops such as soy is that you can decrease the cost of production by killing off everything except the actual soy plant.

Unfortunately, consumers pay a hefty price in terms of health instead.

Are You Willing To Risk Eradicating Your Future Family Lineage?

Some of the more recent research shows that many of the health problems do not even occur in those who consume these GM foods. Some of the most devastating harm may occur in the second and third generations!

I recently interviewed GMO expert Jeffrey Smith about the latest findings by Russian scientists, who discovered that GM soy effectively sterilized the third generation of hamsters ...

One group of hamsters was fed a normal diet without any soy whatsoever, a second group was fed non-GMO soy, a third ate GM soy, and a fourth group ate an even higher amount of GM soy than the third.

Using the same GM soy produced in the US, the hamsters and their offspring were fed their respective diets over a period of two years, during which time the researchers evaluated three generations of hamsters.

Shockingly, the second-generation of GM soy-fed hamsters had a five-fold higher infant mortality rate, compared to the 5 percent normal death rate that was happening in the controls.

Worse yet, nearly all of the third generation hamsters were sterile! Only one single third-generation female hamster gave birth to sixteen pups, and of those, one fifth died.

Another bizarre side effect found in the GM soy-fed groups was an unusually high prevalence of an otherwise extremely rare phenomenon – hair growing inside the animals' mouths.

These are just a couple of concerns. There are certainly many others, and I've written extensively about the health hazards of GM foods. If you're new to this topic and want more information, my article *“Everything you MUST KNOW About Dangerous Genetically Modified Foods”* is a good place to start.

You can also find lots of additional information about GMOs on the site www.ResponsibleTechnology.org, created by Jeffrey Smith. We're working with Jeffrey, who is one of the leaders of the movement to restrict the use of GM foods in the United States, as they have done in Europe, primarily through consumer awareness and action to motivate industry changes, because there is NO government regulation against it.

Your involvement is vital in this respect. And avoiding soy products, including soy derivatives found in most processed foods, is part of it.

But soy is not the only GM food to beware of.

The easiest way to avoid ending up with any type of GM food in your shopping cart is to do some pre-planning using this free non-GMO shopping guide. There's also a free iPhone application available in the iTunes store, which you can find by searching for ShopNoGMO in the applications.

ResponsibleTechnology.org also offers additional guides you can hand out to friends, health care practitioners, and decision makers within your community, along with free online videos, podcasts, and articles that you can repost and republish.

Why All Organic Soy Is NOT The Answer Either

All of that said, even if you were fortunate enough to find organic soy, there are still several other significant concerns with unfermented soy that make it far from attractive from a health standpoint.

Soy contains a number of problematic components that can wreak havoc with your health, such as:

- **Goitrogens** – Goitrogens, found in all unfermented soy whether it's organic or not, are substances that block the synthesis of thyroid hormones and interfere with iodine metabolism, thereby interfering with your thyroid function.

One common source of soy is soy milk. Many consume it as an alternative to milk or one of their primary beverages. Soy milk is a significant contributor to thyroid dysfunction or hypothyroidism in women in the US.

So if you're a woman struggling with low thyroid function and you're consuming soy milk, that's a giant clue you need to stop drinking it immediately.

- **Isoflavones: genistein and daidzein** – Isoflavones are a type of phytoestrogen, which is a plant compound resembling human estrogen, which is why some recommend using soy therapeutically to treat symptoms of menopause. I believe the evidence is highly controversial and doubt it works.

Typically, most of us are exposed to too much estrogen compounds and have a lower testosterone level than ideal, so it really is important to limit exposure to feminizing phytoestrogens.

Even more importantly, there's evidence it may disturb endocrine function, cause infertility, and promote breast cancer, which is definitely a significant concern.

Drinking two glasses of soy milk daily for just one month provides enough of these compounds to alter your menstrual cycle. Although the FDA regulates estrogen-containing products, no warnings exist on soy.

- Phytic acid² – Phytates (phytic acid) bind to metal ions, preventing the absorption of certain minerals, including calcium, magnesium, iron, and zinc -- all of which are co-factors for optimal biochemistry in your body. This is particularly problematic for vegetarians, because eating meat reduces the mineral-blocking effects of these phytates.

Sometimes it can be beneficial, especially in postmenopausal women and in most adult men because we tend to have levels of iron that are too high which can be a very potent oxidant and cause biological stress. However, phytic acid does not necessarily selectively inhibit just iron absorption; it inhibits all minerals. This is very important to remember, as many already suffer from mineral deficiencies from inadequate diets.

The soybean has one of the highest phytate levels of any grain or legume, and the phytates in soy are highly resistant to normal phytate-reducing techniques such as long, slow cooking. Only a long period of fermentation will significantly reduce the phytate content of soybeans.

- Natural toxins known as "anti-nutrients" – Soy also contains other anti-nutritional factors such as saponins, soyatoxin, protease inhibitors, and oxalates. Some of these factors interfere with the enzymes you need to digest protein. While a small amount of anti-nutrients would not likely cause a problem, the amount of soy that many Americans are now eating is extremely high.
- Hemagglutinin – Hemagglutinin is a clot-promoting substance that causes your red blood cells to clump together. These clumped cells are unable to properly absorb and distribute oxygen to your tissues.

Soy To Avoid

As I mentioned, tofu is not fermented soy so it should be avoided. Other examples of common soy products to avoid include soy protein and isolated soy protein powder, which you'll find in many protein bars and protein drinks.

Isolated soy protein powder is actually not a naturally produced substance. Production takes place in industrial factories where a slurry of soy beans is first mixed with an alkaline solution to remove fiber, then precipitated and separated using an acid wash and, finally, neutralized in an alkaline solution. Acid washing in aluminum tanks leaches high levels of aluminum into the final product.

² For more information on this topic, visit <http://www.westonaprice.org/>

The resultant curds are spray-dried at high temperatures to produce a high-protein powder. MSG, a well-known excitotoxin³ that can cause neurological damage, is frequently added as well.

Another common form of soy you're likely exposed to is soy oil, which brings us back to where we started. Ninety-five percent of the foods Americans spend their money on are processed foods, many of which contain soy oil. Soy oil is extremely high in omega-6, which is highly susceptible to oxidative damage. And although you do need omega-6, soy oil is a terrible source as it is highly processed and refined, which severely damages it.

Consuming a diet high in processed foods, which by default is high in soy oil, is a primary contributor to the severe imbalance most people have in their omega-3 to omega-6 ratio, which in turn contributes to creating disease.

Other harmful soy products I've not already mentioned include:

- Soy cheese,
- Soy ice cream,
- Soy yogurt,
- Soy "meat" (meatless products made of TVP),
- Soy lecithin,

Infant Soy Formula - Perhaps The Most Dangerous Soy Products Of All

But perhaps one of the most harmful types of soy products that you need to be extremely cautious of is soy infant formula [more information on this can be found towards the end of this document].

I strongly recommend every single mother to breastfeed for a minimum of six months, preferably longer. There is absolutely no question that breastfeeding is the most healthful option for both you and your baby. Conventional physicians and the American Academy of Pediatrics also recommend exclusive breastfeeding for the first six months of life.

Unfortunately, for a variety of reasons, many women choose not to breastfeed their child, leaving them with few alternatives.

Most opt for conventional formula, which has its own health risks, courtesy of inadequate nutrition (there are at least 400 nutrients in breast milk that are not found in formula), combined with excessive fructose and toxic contaminants.

³ For more information on this topic, visit <http://www.blaylockreport.com/>

But many children are allergic to conventional formula, and these parents can easily be convinced that soy formula is the solution.

Sadly, soy formula is FAR worse than conventional formula, in large part due to its excessive levels of phytoestrogens. The estrogens in soy can irreversibly harm your baby's sexual development and reproductive health. Infants fed soy formula receive a level of estrogen equivalent to five birth control pills every day!

Infants fed soy formula have up to 20,000 times the amount of estrogen in circulation as those fed conventional formulas!

In addition, soy formula has up to 80 times higher manganese than is found in human breast milk, which can lead to brain damage in infants, and altered behaviors in adolescence.

So please, do not ever feed your baby soy formula, and warn others who are pregnant or who you know are considering using formula over breastfeeding.

The next best alternative to breast milk is to make a healthy homemade infant formula. There may be others, but here is one recipe for homemade formula created by the Weston Price Foundation, which I believe is sound.

Educate Yourself About The Health Effects Of Soy

I encourage you to continue reviewing the evidence against soy if you're still skeptical.

There are also some great books on this topic that document this information in clear detail and provide countless references that you can validate for yourself. One of these books, which I recommend very highly, is *The Whole Soy Story* by Dr. Kaayla Daniel.

There's a lot of information out there, and I understand the challenge of trying to explore these health issues. Many times motivations must be taken into account in order to sift through the information and get to the heart of the matter.

In the case of soy, as I mentioned, a primary motivation appears to have been promoting the sale of domestic soy in the US, as this increases profits, as opposed to benefitting your health ...

The purpose of this site is to gather this varied information, present it to you, and offer you the starting point to do your own independent research. Because once you have the information, you have the power to take control of your own health.

Soy Alert!⁴ Confused About Soy?

Soy dangers summarized ...

- High levels of phytic acid in soy reduce assimilation of calcium, magnesium, copper, iron and zinc. Phytic acid in soy is not neutralized by ordinary preparation methods such as soaking, sprouting and long, slow cooking. High phytate diets have caused growth problems in children.
- Trypsin inhibitors in soy interfere with protein digestion and may cause pancreatic disorders. In test animals soy containing trypsin inhibitors caused stunted growth.
- Soy phytoestrogens disrupt endocrine function and have the potential to cause infertility and to promote breast cancer in adult women.
- Soy phytoestrogens are potent antithyroid agents that cause hypothyroidism and may cause thyroid cancer. In infants, consumption of soy formula has been linked to autoimmune thyroid disease.
- Vitamin B12 analogs in soy are not absorbed and actually increase the body's requirement for B12.
- Soy foods increase the body's requirement for vitamin D.
- Fragile proteins are denatured during high temperature processing to make soy protein isolate and textured vegetable protein.
- Processing of soy protein results in the formation of toxic lysinoalanine and highly carcinogenic nitrosamines.
- Free glutamic acid or MSG, a potent neurotoxin, is formed during soy food processing and additional amounts are added to many soy foods.
- Soy foods contain high levels of aluminum which is toxic to the nervous system and the kidneys.

Truth Behind The "Soy-Myths"⁵

- *Myth: Use of soy as a food dates back many thousands of years.*
- Truth: Soy was first used as a food during the late Chou dynasty (1134-246 BC), only after the Chinese learned to ferment soy beans to make foods like tempeh, natto and tamari.

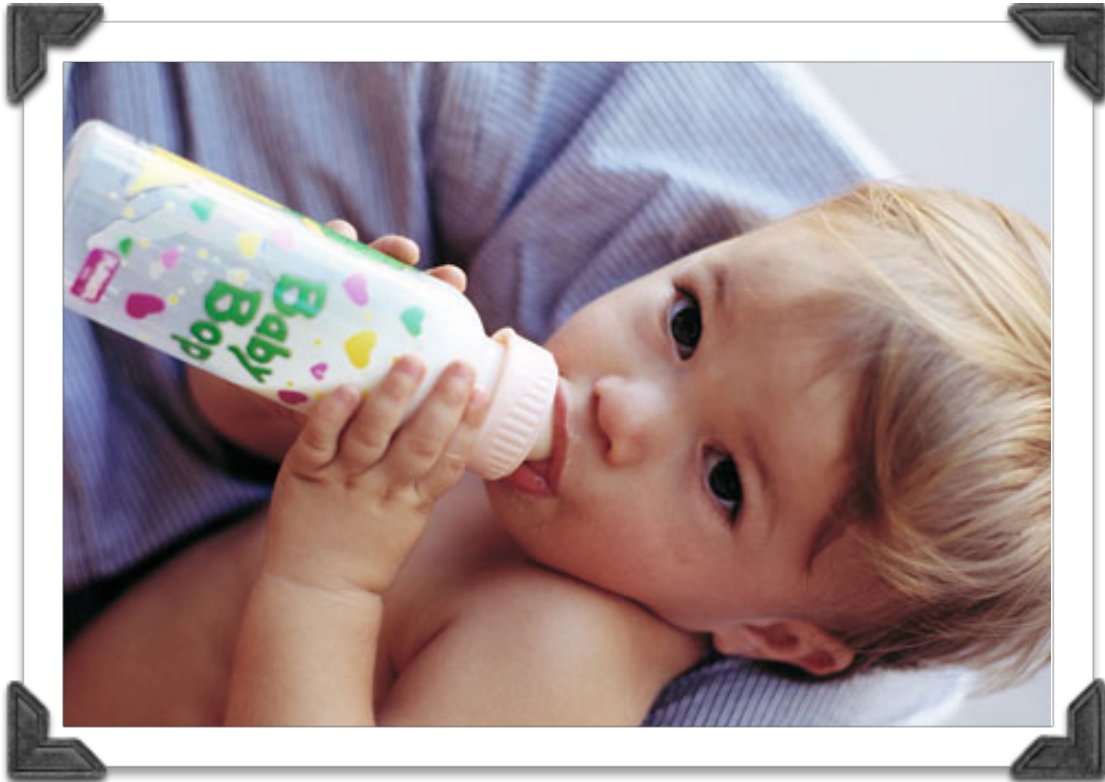
⁴ Article taken from <http://www.westonaprice.org/>

⁵ Article taken from <http://www.westonaprice.org/>

- *Myth: Asians consume large amounts of soy foods.*
- Truth: Average consumption of soy foods in Japan and China is 10 grams (about 2 teaspoons) per day. Asians consume soy foods in small amounts as a condiment, and not as a replacement for animal foods.
 - *Myth: Modern soy foods confer the same health benefits as traditionally fermented soy foods.*
- Truth: Most modern soy foods are not fermented to neutralize toxins in soybeans, and are processed in a way that denatures proteins and increases levels of carcinogens.
 - *Myth: Soy foods provide complete protein.*
- Truth: Like all legumes, soy beans are deficient in sulfur-containing amino acids methionine and cystine. In addition, modern processing denatures fragile lysine.
 - *Myth: Fermented soy foods can provide vitamin B12 in vegetarian diets.*
- Truth: The compound that resembles vitamin B12 in soy cannot be used by the human body; in fact, soy foods cause the body to require more B12
 - *Myth: Soy formula is safe for infants.*
- Truth: Soy foods contain trypsin inhibitors that inhibit protein digestion and affect pancreatic function. In test animals, diets high in trypsin inhibitors led to stunted growth and pancreatic disorders. Soy foods increase the body's requirement for vitamin D, needed for strong bones and normal growth. Phytic acid in soy foods results in reduced bioavailability of iron and zinc which are required for the health and development of the brain and nervous system. Soy also lacks cholesterol, likewise essential for the development of the brain and nervous system. Megadoses of phytoestrogens in soy formula have been implicated in the current trend toward increasingly premature sexual development in girls and delayed or retarded sexual development in boys.
 - *Myth: Soy foods can prevent osteoporosis.*
- Truth: Soy foods can cause deficiencies in calcium and vitamin D, both needed for healthy bones. Calcium from bone broths and vitamin D from seafood, lard and organ meats prevent osteoporosis in Asian countries—not soy foods.
 - *Myth: Modern soy foods protect against many types of cancer.*
- Truth: A British government report concluded that there is little evidence that soy foods protect against breast cancer or any other forms of cancer. In fact, soy foods may result in an increased risk of cancer.

- *Myth: Soy foods protect against heart disease.*
- Truth: In some people, consumption of soy foods will lower cholesterol, but there is no evidence that lowering cholesterol with soy protein improves one's risk of having heart disease.
 - *Myth: Soy estrogens (isoflavones) are good for you.*
- Truth: Soy isoflavones are phyto-endocrine disrupters. At dietary levels, they can prevent ovulation and stimulate the growth of cancer cells. Eating as little as 30 grams (about 4 tablespoons) of soy per day can result in hypothyroidism with symptoms of lethargy, constipation, weight gain and fatigue.
 - *Myth: Soy foods are safe and beneficial for women to use in their postmenopausal years.*
- Truth: Soy foods can stimulate the growth of estrogen-dependent tumors and cause thyroid problems. Low thyroid function is associated with difficulties in menopause.
 - *Myth: Phytoestrogens in soy foods can enhance mental ability.*
- Truth: A recent study found that women with the highest levels of estrogen in their blood had the lowest levels of cognitive function; In Japanese Americans tofu consumption in mid-life is associated with the occurrence of Alzheimer's disease in later life.
 - *Myth: Soy isoflavones and soy protein isolate have GRAS (Generally Recognized as Safe) status.*
- Truth: Archer Daniels Midland (ADM) recently withdrew its application to the FDA for GRAS status for soy isoflavones following an outpouring of protest from the scientific community. The FDA never approved GRAS status for soy protein isolate because of concern regarding the presence of toxins and carcinogens in processed soy.
 - *Myth: Soy foods are good for your sex life.*
- Truth: Numerous animal studies show that soy foods cause infertility in animals. Soy consumption enhances hair growth in middle-aged men, indicating lowered testosterone levels. Japanese housewives feed tofu to their husbands frequently when they want to reduce his virility.
 - *Myth: Soy beans are good for the environment.*
- Truth: Most soy beans grown in the US are genetically engineered to allow farmers to use large amounts of herbicides.
 - *Myth: Soy beans are good for developing nations.*
- Truth: In third world countries, soybeans replace traditional crops and transfer the value-added of processing from the local population to multinational corporations.

The Tragedy Of Soy Infant Formula⁶



An estimated 25% of North American babies receive infant formula made from processed soybeans. Parents use soy formula in the belief that it is healthier than formula based on cows' milk. Soy promotional material claims that soy provides complete protein that is less allergenic than cows' milk protein. When soy infant formula first became commercially available, manufacturers even promised that soy formula was "better than breast milk."

Parents have a right to know how these extravagant claims compare to scientific findings related to soy infant formula.

While soybeans are relatively high in protein compared to other legumes, scientists have long recognized them as a poor source of protein because other proteins found in soybeans act as potent enzyme inhibitors. These "antinutrients" block the action of trypsin and other enzymes needed for protein digestion. In test animals, diets high in trypsin inhibitors depress growth and cause enlargement and pathological conditions of the pancreas, including cancer.

The soy industry recognizes that trypsin inhibitors are a problem in infant formula and have spent millions of dollars to determine the best way to remove them.

⁶ Article taken from <http://www.westonaprice.org/>

Trypsin inhibitors are large, tightly folded proteins that are only deactivated after a considerable period of heat treatment. This process removes most—but not all—of the trypsin inhibitors, but has the unfortunate side effect of over-denaturing the other proteins in soy, particularly lysine, rendering them difficult to digest and possibly toxic. Even in low amounts, trypsin inhibitors prevented normal growth in rats.

The main ingredient in soy infant formula is soy protein isolate, a powder extracted from soybeans through a process that involves not only high temperatures but also caustic chemicals. The alkaline soaking solution produces a carcinogen, lysinealine, and reduces the cystine content, which is already low in the soybean. Other carcinogens called nitrosamines are formed during high temperature spray drying.

Soybeans also contain high levels of phytic acid or phytates. This is an organic acid, present in the outer portion of all seeds, which blocks the uptake of essential minerals—calcium, magnesium, iron and especially zinc—in the intestinal tract. Soybeans have very high levels of a form of phytic acid that is particularly difficult to neutralize. As early as 1967, researchers testing soy formula found that it caused negative zinc balance in every infant to whom it was given. Scientists have found a strong correlation between phytate content in formula and poor growth, even when the diets were additionally supplemented with zinc.

High amounts of phytic acid in soy foods and grains have caused retarded growth in children on macrobiotic diets. A reduced rate of growth is especially serious in the infant as it causes a delay in the accumulation of lipids in the myelin, and hence jeopardizes the development of the brain and nervous system.

Soy formula can also cause vitamin deficiencies. Soy increases the body's requirements for vitamin B12, a nutrient that is absolutely vital for good health. Early studies with soy formula indicated that soy blocks the uptake of fats. This may explain why soy seems to increase the body's requirements for fat-soluble vitamin D.

Aluminum content of soy formula is 10 times greater than milk based formula, and 100 times greater than unprocessed milk. Aluminum has a toxic effect on the kidneys of infants, and has been implicated as causing Alzheimer's in adults. Soy formulas lack cholesterol, another nutrient that is absolutely essential for the development of the brain and nervous system; they also lack lactose and galactose, which play an equally important role in the development of the nervous system. A number of other substances, which are unnecessary and of questionable safety, are added to soy formulas including carrageenan, guar gum, sodium hydroxide (caustic soda), potassium citrate monohydrate, tricalcium phosphate, dibasic magnesium phosphate trihydrate, BHA and BHT.

What about the claim that soy formula is less allergenic than cows milk formula? Studies indicate that allergies to soy are almost as common as those to milk. Use of soy formula to treat infant diarrhea has had mixed results, some studies showing improvement with soy formula while others show none at all.

The most serious problem with soy formula is the presence of phytoestrogens or isoflavones. While many claims have been made about the health benefits of these estrogen-like compounds, animal studies indicate that they are powerful endocrine disrupters that alter growth patterns and cause sterility. Toxicologists estimate that an infant exclusively fed soy formula receives the estrogenic equivalent of at least five birth control pills per day. By contrast, almost no phytoestrogens have been detected in dairy-based infant formula or in human milk, even when the mother consumes soy products. A recent study found that babies fed soy-based formula had 13,000 to 22,000 times more isoflavones in their blood than babies fed milk-based formula. Scientists have known for years that isoflavones in soy products can depress thyroid function, causing autoimmune thyroid disease and even cancer of the thyroid. But what are the effects of soy products on the hormonal development of the infant, both male and female?

Male infants undergo a "testosterone surge" during the first few months of life, when testosterone levels may be as high as those of an adult male.

During this period, the infant is programmed to express male characteristics after puberty, not only in the development of his sexual organs and other masculine physical traits, but also in setting patterns in the brain characteristic of male behavior. In monkeys, deficiency of male hormones impairs learning and the ability to perform visual discrimination tasks-such as would be required for reading-and retards the development of spatial perception, which is normally more acute in men than in women.

It goes without saying that future patterns of sexual orientation may also be influenced by the early hormonal environment. Pediatricians are noticing greater numbers of boys whose physical maturation is delayed, or does not occur at all, including lack of development of the sexual organs. Learning disabilities, especially in male children, have reached epidemic proportions. Soy infant feeding-which floods the bloodstream with female hormones that could inhibit the effects of male hormones-cannot be ignored as a possible cause for these tragic developments.

As for girls, an alarming number are entering puberty much earlier than normal, according to a recent study reported in the journal *Pediatrics*. Investigators found that one percent of all girls now show signs of puberty, such as breast development or pubic hair, before the age of three; by age eight, 14.7 percent of white girls and a whopping 48.3 percent of African-American girls had one or both of these characteristics.

New data indicate that environmental estrogens such as PCBs and DDE (a breakdown product of DDT) may cause early sexual development in girls and a study in Puerto Rico implicated soy feeding as a cause of early menarche. The use of soy formula in the WIC program, which supplies free formula to welfare mothers, may explain the astronomical rates of early menarche in African American girls.

The consequences are tragic. Young girls with mature bodies must cope with feelings and urges that most children are not well-equipped to handle. And early maturation in girls is frequently a harbinger for problems with the reproductive system later in life including failure to menstruate, infertility and breast cancer.

Other problems that have been anecdotally associated with children of both sexes who were fed soy-based formula include extreme emotional behavior, asthma, immune system problems, pituitary insufficiency, thyroid disorders and irritable bowel syndrome.

Concerns about the dangers of soy have prompted consumer groups in New Zealand and Canada to call for a ban on the sale of soy infant formula. Milk-based formula contains a better protein profile and does not flood the infant with antinutrients and female hormones. Breast feeding is best IF the mother has consumed a healthy diet, one that is rich in animal proteins and fats, throughout her pregnancy and continues to do so while nursing her infant.

Mothers who cannot breast feed, for whatever reason, should prepare homemade formula based on whole milk for their babies. The rare child allergic to whole milk formula should be given a whole foods meat-based formula, not one made of soy protein isolate. Parents who invest time in preparing homemade formula will be well rewarded with the joys of conferring robust good health on their children.