

Soy Products, Including Soy-Based Infant Formulas, May Be a Major Cause of All Types of Pervasive Developmental Delays Including Autism, ADD, and ADHD

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I propose a new theory that soy products are a major cause of autism, attention deficit disorder (ADD), attention deficit hyperactive disorder (ADHD), and other forms of pervasive developmental delays. The increase in soy product consumption parallels the rapid increase in the diagnosis of these childhood disorders. In the following article the word autism will be inclusive of all of the above conditions.

Soy itself can cause autism, but it can also act in connection with vaccines, medicinal drugs, and environmental pollutants thereby magnifying the damage caused by any of these agents acting alone. In our modern times it would be highly unusual to not be exposed to all of these agents. The great microbiologist Rene Dubos has pointed out that most diseases are caused by multiple agents acting simultaneously and it's a rare circumstance when one agent, acting alone, is the cause of a disease.

I've previously stated that autism is an ecological disorder whose original diagnosis was in 1943. The rates of autism have climbed steadily since the 1970's. The theory that heart disease is caused by cholesterol and saturated fat intake was proposed in 1953. A national movement toward "healthy" eating began, simultaneously, with the exercise movement including weight training and aerobics. All of these modern movements were birthed in the early 1970's.

The early marketing campaigns for soy were directed at two specific markets: vegetarians and the poor. These markets were limited, however, so market expansion became the new battleground for soy growers and producers. During these same years the market for processed foods experienced explosive growth and most processed foods contain soy oil.

The soy industry had a large waste problem because of the leftover sludge from soy-oil manufacture. The industry chose profit over losses, finding more ways to use soy products in food manufacture and convincing people to pay more money for the fake foods that they were making.

"The quickest way to gain product acceptability in the less affluent society is to have the product consumed on its own merit in a more affluent society," said a soy industry spokesperson in 1975. It's in these years that the campaign to sell soy to upscale

consumers began in earnest, and it's in these years that the rates of autism began to skyrocket.

The marketing plan required convincing consumers that soy was a health food in contrast to the bogey-man of animal products. Soy would prevent heart disease and cancer, stop hot flashes, increase bone density, and forestall aging, the marketers claimed. Enormous sums of money were provided to university professors for research to create the "so-called" science that Americans were beginning to rely on to make decisions about their health. Americans have no idea of the biases and poor research that goes on in "scientific" universities. Further, they don't have the training to decipher the many messages that arrive from distribution outlets within the media of these so-called scientific research articles. Research is rarely questioned. This is true even more so in the internet age where every individual has been turned into a "researcher."

Gaining the attention of the health-conscious consumer was the key part of the marketing strategy. The marketing dollar pool is enormous, with the sale of each item making a contribution to the marketing dollar pie. Soy is now found in most supermarket breads, in imitation meat, milk, cream, cheese, yogurt, ice cream, and most important, in infant soy formulas. Today, more than 25% of all children using infant formula use soy formula.

Soy got its biggest boost in 1998 when the FDA allowed producers of soy foods to make a health claim that soy products could help lower cholesterol. Only heart disease claims are allowed but claims for soy as a cancer preventive soon began to appear.

The marketing programs claim that Asians and the Japanese eat a good portion of their dietary calories as soy-based foods. But, these claims aren't true as these groups have long believed that soy is a poor and inferior food for human health. The Chinese don't eat the soybean because it contains large quantities of harmful substances. In both China and Japan, soy is used as a condiment or flavoring, and not as a substitute for animal foods.

In a large study of 3,734 elderly Japanese-American men, those who ate the most tofu during midlife had the highest risk of developing Alzheimer's disease. Men who consumed tofu at least twice weekly had more cognitive impairment than those who rarely or never ate the soybean curd. Tofu eaters also had lower brain weight when an autopsy was performed. Test results showed that soy users performed equal to persons five years older than they were.

In Asia, most soy is eaten in a fermented form, but it's never considered a healthy food for babies. If a mother cannot nurse, and if no wet nurse is available, the child is fed milk from a cow or water buffalo. In the US, more than 1 million babies are now consuming soy formula. Parents use it in the belief that it is healthier than formulas based on cow's milk. When soy first became available, manufacturers claimed that it was "better than breast milk."

Naomi Baumslag, MD, Clinical Professor of Pediatrics at Georgetown University Medical College cites many reasons for parents to avoid soy formula. She states, "There is a great deal of scientific evidence that soy formula can be damaging to newborns." Soy lacks many factors that are essential to normal brain development including essential fatty acids, DHA-brain growth factor and cholesterol.

Why Soy is One of the Main Causes of Autism

Let's now begin to explore the specific reasons why soy is so dangerous to human health and why it's one of the main causes for the alarming increase in autism that has occurred during the last decade.

Isoflavones

The most serious problem with soy formula is its high levels of isoflavones. These are estrogen-like compounds called phytoestrogens that compete with the body's natural estrogens for estrogen receptors in the brain.

The soy plant evolved a strategy of developing phytoestrogens as a defense mechanism against predators that would otherwise eat the plant. The outcome of eating soy plants was a form of birth control that reduced the population of predators. Soy plants, therefore, are producers of oral contraceptives. As such, when humans consume soy foods, the naturally-occurring phytoestrogens can interfere with the actions of our own hormones involved in reproduction and growth.

Estrogens are important for normal brain function in women; in males, isoflavones inhibit an enzyme that's involved in changing the form of testosterone. Babies fed exclusively on soy formula receive a dose of isoflavones that's equivalent of taking at least five birth control pills each day! The outcome is an alarming level of premature maturation in young girls, something that many of us have seen in young autistic girls. Girls who consume large amounts of cow's milk as children have lower rates of early development.

Today, before the age of three, at least one percent of all girls show early signs of puberty, such as breast development or pubic hair; by eight, almost 15% of white girls and almost 50% of black girls show signs of early development.

In monkeys, a deficiency of male hormones slows learning and the ability to perform visual discrimination tasks -- tasks that are needed for reading. There's also a disturbance in spatial perception, more so in men than in women. This effect of soy in males may be a partial explanation of why there are more male autistics than female.

Other problems that occur in soy-based-formula-fed infants are extreme emotional behavior, depression, asthma, immune system problems, pituitary insufficiency, thyroid disorders, and irritable bowel syndrome.

Male infants undergo a testosterone surge during the first few months of life when hormone levels may reach levels as high as seen in adults. Soy disrupts this surge. Again, the increased use of soy products, particularly as infant formula, has paralleled the increased levels of learning disabilities and behavioral problems, especially in male children.

Soy Interferes with Enzymes

Protease inhibitors (PIs) in soy inhibit some of the key enzymes that help us digest protein. The most important one is trypsin. These inhibitors are linked to malnutrition, pancreatic disease, gut disorders, and even cancer. Protease inhibitors (PIs) are part of the “anti-nutrient” group of toxins contained in soy foods. Grains, nuts, and some seeds contain PI but cooking deactivates most of their PIs. PIs in soy, however, are resistant to deactivation by cooking and quantitatively soy products contain large amounts.

Soy contains hemagglutinin, a clot-promoting substance that causes red blood cells to clump together. This and PIs are both growth inhibitors and these anti-nutrients lead to stunted growth. Fermentation of soy and the resulting products such as tofu are less dangerous but aren’t entirely free of damaging effects.

Soy contains many different PIs and new strains are emerging with the hybridization and genetic engineering of soy. Most manufacturing treatments to eliminate PIs add other toxic residues to the end product while failing to fully get rid of PIs.

For soy-formula fed infants, vegetarians, and others who regularly eat soy products the amount of ingested PIs and other anti-nutrients quickly add up. As soy is added to more and more foods, health problems increase. The amount of “hidden” soy is almost hard to believe. I remember when I wanted to eliminate soy from my diet and I tried to find a mayonnaise that didn’t contain any. None, not even the one advertised as real mayonnaise, were free of soy. In fact, soy oil was the first and main ingredient listed.

Soy’s ability to interfere with enzymes and amino acids may have a direct effect on the brain. The isoflavones affect key enzymes that determine brain function and structure. The outcome is diminished learning and memory.

Soy’s Effects on Neurochemicals

The neurotransmitters dopamine and norepinephrine promote alertness and activity. Dopamine is essential to fine muscle control. A lack of dopamine is related to the trembling hands characteristic of Parkinson’s disease. Both depression and mood disorders arise from low levels of these two key neurotransmitters. Current research argues that attention-deficit disorder is a function of dopamine imbalance.

Soy affects tyrosine hydroxylase, the enzyme that converts amino acids into dopamine, leading to a profound disturbance in the brain’s ability to use dopamine.

Research at several institutions found that lowered tyrosine hydroxylase activity led to a depletion of brain dopamine.

Soy's Effects on the Thyroid Gland and Brain

The amino acid tyrosine, the precursor to dopamine production, is crucial to the brain because it's needed by the body to make thyroid hormones. These hormones play a key role as a major physiological regulator of animal brain development. Thyroid hormones affect cell differentiation and gene expression and regulate the growth and migration of nerve cells, including the development of nerve to nerve connections (synapses) and the formation of the myelin sheath which insulates nerve fibers to maintain effective impulse transmission.

Soy contains goitrogens, substances that depress thyroid function; they cause goiter and autoimmune thyroid disease. America is plagued today with thyroid disorders that are associated with many health problems. Again, it's largely the isoflavones that are responsible. Symptoms of low thyroid function are sluggishness, chills, brain fog (and short-term memory loss), attention-deficit disorders, hypoglycemia, depression, dementia, emotional instability, dry skin, hair loss, and weight gain.

An overactive thyroid condition results in anxiety, restlessness, irritability, panic attacks, attention-deficit and hyperactivity disorders, heart irregularities, tremors, sweating, bulging eyes, and sudden death. There are growing numbers of people whose hormone levels vary wildly, one day high, the next day low, who experience a roller coaster of symptoms.

The action of soy is synergistic with the damage caused by radiation, mercury, fluoride, plastics, pesticides, dioxins, solvents, and estrogens. Iodine supplements are unable to overcome the problem. The first reports of soy-formula-induced infant thyroid problems came in the 1950's. Of course, soy industry spokespersons decry these claims, further clouding the issues.

Thyroid Hormones and Fetal Brain Development

Changes in thyroid function are the most frequent occurrence in children experiencing auto-immune conditions. Researchers at Cornell University showed that children with the highest levels of auto-immune thyroid disease had received the highest frequency of soy-based formula feedings. In another study, they found that twice as many diabetic children had received soy formula in infancy when compared to non-diabetic children.

Many health authorities are recommending strict avoidance of soy formula.

Thyroid hormones exert their influence within discrete windows of time during development of the infant. Disturbed hormone levels can have very profound effects on the developing human brain. This is especially true during the first twelve weeks of pregnancy. During this time the fetus depends on the mother's thyroid hormones for

development. Later, both the mother's and fetus's thyroid hormone production affect the central nervous system.

Pregnant women with under-active thyroids are four times more likely to have children with low IQs if the thyroid disorder isn't treated. Much thyroid dysfunction goes undetected and untreated.

The Thyroid, Brain, and Environmental Toxins

Environmental toxin exposure is a major risk to all living creatures today. Dioxin and polychlorinated biphenyls (PCBs) represent persistent exposures to very disruptive toxins that may lead to behavioral, and learning and memory problems because these chemicals may disrupt the normal action of thyroid hormones.

Soy products grown in the US contain residual amounts of pesticides, particularly organochlorides in the same family as DDT. Although these chemicals were banned in the 1970's many still persist in the soil and are absorbed in the root systems of the soy plants. Beyond disrupting hormones, these toxins can have delayed neurological effects ranging from loss of memory to mania. Combinations of multiple chemical toxins will affect the brain and many glands including the thyroid.

Soy infant formula contains other neurotoxins such as aluminum, cadmium, and fluoride.

Soy Inhibits Zinc Absorption and Decreases the Absorption of Other Minerals

Soybeans are high in phytic acid, a substance long-known to block the uptake of essential minerals. Disturbances occur in calcium, magnesium, copper, iron, and zinc uptake from the intestinal tract. This failure to absorb nutrients contributes to widespread malnutrition. Even with aggressive nutritional supplementation programs now used in the alternative treatment programs for autism, mineral deficiencies are likely to continue because of the nutrient binding capacity of phytates in those consuming soy products and other grain-based dietary regimens.

Soy foods are resistant to methods to reduce the phytate content of the plant and soy foods generally have a higher phytic acid content than other grains. Vegetarians who consume tofu and bean curd as a substitute for meat and dairy products risk severe mineral deficiencies.

Zinc is a key nutrient as it forms the structural part of many essential enzymes. Zinc is needed for optimal development and functioning of the brain. It also plays a key role in the function of the immune system. Researchers found that soy formula caused a negative zinc balance in every infant who used it. Even with zinc supplementation, there was a strong relationship between the phytic acid content of the diet and poor growth.

[Manganese and Aluminum Toxicity](#)

Manganese is a vital trace mineral needed for growth, reproduction, wound healing, brain function, thyroid and adrenal function, and for the efficient metabolism of sugars, insulin, and cholesterol. Infants on soy formula take in 75-80 times more manganese per day than infants who are breast fed. Even the phytates are unable to reduce manganese absorption enough to prevent manganese toxicity.

Hair mineral analysis of children with learning difficulties shows high levels of manganese. Physicians have confirmed a correlation between childhood learning disabilities and high levels of manganese. **Soy infant formula may raise the likelihood of a child developing ADD or ADHD later in life.**

Manganese is a triple threat to newborns because of their immature and permeable intestines which allows more absorption. The immature liver is also unable to excrete excess manganese. The body deposits excess manganese in parts of the brain which, in turn, can affect dopamine manufacture and trigger behavioral problems up to and including violent and sociopathic action. **Researchers have stated that soy formula in infancy can impair brain development.**

Neurology books have reported disorders called “manganese madness” since the turn of the last century. In the past, this disorder occurred only in miners. Now, with the increased use of soy in people’s diets, symptoms of manganese toxicity are showing up much more often. **The area of the brain most affected is the dopamine system, the part of the brain associated with ADD, ADHD, and autism.**

Manganese toxicity rarely exists in isolation and fluoride, with its high concentration in soy, increases manganese absorption. Mineral deficiencies created by soy’s high phytic acid content can push manganese concentrations to high levels.

Soy has achieved such high levels of acceptance in our modern society that pediatricians have been known to feed soy formula to pre-mature infants. The damage and havoc that this practice creates in these kid’s underdeveloped organs is hard to imagine.

[Soy Protein Isolate](#)

Soy processors have worked hard to remove soy’s high concentration of anti-nutrients, particularly in soy protein isolate (SPI), the primary ingredient in infant soy-based formulas. SPI is also a key ingredient in many processed foods that imitate dairy and meat products.

Production takes place inside industrial factories; here a slurry of soy beans is mixed with an alkaline solution to remove the fiber. It’s then precipitated and separated using an acid wash in aluminum tanks that leaches aluminum into the final product. The resultant curds are spray dried at high temperatures to produce a high protein powder.

Many food bars eaten today contain SPI and it's also used to produce textured vegetable protein.

Nitrites, cancer-causing compounds, are formed during the high-temperature processing phase. This process, however, also denatures and inactivates other proteins needed for normal growth.

Soy Carbohydrate and Digestive Disturbances

The abdominal bloating, rumbling, and flatus experienced by vegetarians and other heavy soy-food eaters is a chronic problem. The factor in soy that causes these disturbances has not been identified although it's believed that it arises from a carbohydrate in soy called oligo-saccharides. These require an enzyme for digestion that humans don't have. The product passes into the large intestine completely intact where it's now attacked by loads of hungry bacteria. These critters ferment the carbohydrate which always results in gas and foul odors.

Neither home cooking, or high temperature industrial heating processes, get rid of the indigestible carbohydrate. Old fashioned soy processing such as fermentation can eliminate the problem but most human consumption of soy products today is of the highly industrial processed SPI. The use of soy flour in baked goods such as breads and muffins doesn't remove the offending carbs. Soy flour is the staple of the new so-called low impact carbs that processors are using to meet the demand for more so-called low-carb foods. I detail the shenanigans behind this charade in my books, The Low-Carb Diet: How to Do it Right! and Net Carb Scam and the Hazards of Carbohydrates at www.ultimatedietsecrets.com.

Those who experience excessive gas may be sufferers of undiagnosed soy allergies, and/or celiac disease. Obvious allergic symptoms to soy include sneezing, a runny nose, hives, diarrhea, facial swelling, a swollen tongue, shortness of breath, and anaphylactic shock. These symptoms make one wonder how many times physicians have prescribed antibiotics and prednisone for symptoms caused by soy products.

Soy Allergies and the Allergic Autistic Child

Today, soy is listed as a top seven allergen and can cause immediate hypersensitivity reactions. Food allergies are abnormal inflammatory responses of the immune system to foreign substances. In Sweden, a girl died from an asthma attack after eating a hamburger that contained only 2.2% soy protein.

Soy is "hidden" in many food products and people have no idea how much soy they regularly consume. This hidden soy is responsible for many allergic responses that are often blamed on other foods. Researchers have proved that the fetus can be sensitized to soy and that once breast feeding is begun the infant can react to foods that it has never eaten before. Allergies also increase when margarine replaces butter in the diet.

Since 1998, the same year that genetically engineered soy was introduced to the world market, soy allergies increased by 50%. One of the proteins in soy that causes the allergies is 30% higher in genetically engineered bean than in regular bean.

People allergic to soy face danger at any moment during the day. Hidden soy is in thousands of everyday foods, cosmetics, and industrial products.

[Another Look at Milk](#)

Many people have given up on cow products in the mistaken belief that these foods are health hazards. Dairy products have a long history of providing good health to many population groups. Dr. Weston A. Price found that milk products were the principle food of many extremely healthy populations.

The problem today with dairy products is the processing methods that transform healthy dairy products into allergens and cancer-causing products. Feeding methods include the use of soy-based products to cows and breeding methods that enlarge the animal's pituitary gland. These cows then need antibiotics to keep them well. Their milk is so pasteurized that all the valuable enzymes are destroyed and without them milk is very difficult to digest.

The butterfat of modern milk is homogenized, or removed to produce skim milk or low-fat milk. This is always a mistake. Without the fat the body cannot absorb and use many vitamins and minerals. This fat is a good and healthy energy source despite the wrong-headed view of the modern medical Establishment that it causes heart disease, one of the greatest errors in all of the history of medicine (search "cholesterol myths" for more information on this subject).

You should purchase raw, certified organic dairy products for use with your family. These are readily available in most locations. Cultured buttermilk is easily digested and might serve as a good substitute for whole milk if there is a digestive issue. Whole cream is also available and cream is essentially devoid of protein and it's unlikely that it will be a problem for those who are concerned about the milk protein: casein. I have many of my clients use cream diluted with water to satisfy the taste and texture requirements of the child.

Neither pasteurized/homogenized milk-based or soy-based infant commercial formulas are recommended for optimal development of the infant. If one cannot breast feed, she should prepare a homemade formula based on whole milk formula or use a meat-based formula. And, a breast feeding mother should never consume soy foods.

[Conclusion](#)

Infant soy formulas are dangerous for infants. Parents, who consume soy products in the erroneous belief that it's good for their health, will suffer health consequences from this dietary practice, harming their children too. The growth of autism directly parallels

the increased consumption of soy products. There are two major sources of exposure: first, the parent who consumes soy products and second, infant soy feeding.

We don't have enough data at this time to tell what percent of the autistic population has been exposed to soy. Soy infant formulas are fed to more than 25% of all infants. We have no idea how much of the autistic population represents this sub-group.

We also know that soy will lower the antibody response to vaccinations and may contribute vaccines being a significant cause of autism. Antibody response, measured at 5 and 8 months in infants fed soy formula exclusively for 5 months, showed a much lower response.

Soy is a nasty actor and it should be avoided entirely.