
References

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The Bean Syndrome

The Bean Syndrome

An extract of the common bean (phytohaemagglutinin, PHA) is widely used in research, and has been used occasionally in medicine. The effects of bean toxin, and other plant toxins (e.g., pokeberry) overlap in several ways with viral infection and autoimmune disease. PHA causes, for example, the appearance of large mononuclear cells in the blood, the suppression of DNA synthesis in thymic cells, a slight leucopenia, and hepatic necrosis. Extracts of lentils, broad beans, and fenugreek (used in curry) are as active as PHA, and extracts of common peas, chick peas, lupinus, and soy beans also have some activity. The effects of a single exposure (such as eating a pokeberry) can remain microscopically visible for two weeks.([1](#))

In aging, stress, and malnutrition, the barrier function of the intestine is weakened. Vitamin A and magnesium deficiencies allow macromolecules to enter the blood from the intestine.([2](#))

Injury to the bowel causes "flu-like" symptoms. There have been reports that the viruses of "respiratory diseases" appear in the intestine before they appear in the respiratory tract. Alvarez found that "when a dog gets distemper the gradient of latent period down its small bowel is reversed," and he suggests that in a cold "a systolic, non-progressive type of contraction appears." He says codeine is the best medicine to block a cold. (I have argued that it is vitamin C's laxative action which can interrupt cold symptoms.) Recent research shows that naloxone, the morphine antagonist, can restore normal responses to the stressed bowel. Alvarez was interested in chronic fatigue and "painful fatigue," and remarked that occasionally "a fatigue state will follow a bout with some infection such as influenza."([3](#))

Bacterial toxins, whether produced in the intestine or in the manufacture of food supplements, pass through the wall of the intestine in larger amounts in stress, malnutrition, and old age. Endotoxin suppresses mitochondrial respiration, and tends to produce a shock-physiology similar to that produced by endogenous hormones. I have mentioned before that I think endotoxin can be involved in the premenstrual syndrome, and I think it might even be involved in some breast syndromes.([4](#))

Two features of mitochondrial damage in severe stress (regardless of whether endotoxin is involved) are a depletion of the antioxidant reserves, and loss of the ability to convert cholesterol into the protective steroid hormones. Mitochondrial damage is more likely in hypothyroidism, as I have discussed previously; thyroxine inhibits lipid peroxidation, and it tends to be inversely related to adrenalin, preventing or minimizing "catecholamine toxicity," for example.

Beans and lentils happen to be powerful anti-thyroid agents, so it isn't surprising to see indications of decreased aerobic capacity, resulting from decreased peak oxygen consumption([5](#)) in association with the chronic fatigue syndrome (CFS), if that syndrome is caused by chronic exposure to dietary legumes.

Hypothyroidism causes poor magnesium retention, so the report that a magnesium supplement caused reduced pain and improved energy level and emotional state, while increasing intracellular magnesium in CFS patients,([6](#)) suggests a role for hypothyroidism in CFS.

One of the symptoms specific to chronic fatigue syndrome([7](#)) - postexertional malaise, marked by pain and weakness and by an exacerbation of other symptoms including fever and adenopathy - can be explained as the result of increased absorption of bowel toxins which follows the relative ischemia of the intestine during intense adrenergic stimulation.

A day or more after eating an allergen, it can be resting harmlessly in the intestine, and exertion, or emotion, or hunger, or nighttime can lower the blood sugar enough to cause a surge of adrenalin. The adrenalin reduces the flow of blood to the intestine, allowing allergens to be absorbed via the de-energized tissues. If the blood sugar stays low in spite of the adrenalin, white cells will be stimulated to release histamine and other pro-inflammatory substances, but the adrenalin will also cause the secretion of glucocorticoids. Night-sweats and neurological symptoms can be produced by these hormonal responses. The glucocorticoids first induce, then - at high levels - destroy the detoxifying enzymes.

Special conditions, such as a bowel infection, or immaturity of the intestine, can allow large amounts of allergens to pass through the intestinal barriers. In Los Angeles, I learned that physicians and nutritionists often advise welfare mothers to start feeding beans to their babies at six months. In parts of Africa, babies are given "bean milk" from the beginning instead of milk.

The Epstein-Barr virus, which is believed(*) to cause Burkitt's lymphoma and infectious mononucleosis, has often been proposed as a cause of the chronic fatigue syndrome. R.J.V. Pulvertaft([8](#)) found "a close similarity between Burkitt cells and human lymphocytes stimulated by bean extract." He concluded that "...the possibility of a relation between Burkitt's lymphoma and a diet of beans should not be neglected," though he emphasized that other factors must be considered, since most people who eat beans don't develop the disease. The intestinal parasites which are common in tropical Africa can cause inflammation of the bowel, leading to the absorption of large amounts of antigens.

Since the bowel becomes inflamed in influenza, it is reasonable to think that some of the symptoms of "the flu" are produced by absorbed bowel toxins.

The variations in the post-influenza syndromes are very likely influenced by the nature of the bacteria or foods which are present, chronically or at the time of an uncompensated stress or inflammatory disease. K.M. Stevens([9](#)) has argued that while rheumatic fever and glomerulonephritis are caused by the antigens of streptococci, systemic lupus erythematosus (SLE) is probably caused by the antigens of grampositive lactobacilli found in the normal flora.

Migraine, SLE, CFS, thyroid problems, and some kinds of porphyria seem to be more common in women of reproductive age, and are often exacerbated by premenstrual hormone changes. According to Stevens, "SLE is almost entirely a disease of women of child-bearing age. One possibility for this selection could be that women during this period harbour a peculiar flora. This is indeed the case; large numbers of gram-positive lactobacilli are present in the vagina only during the thirty-odd years when regular menstrual activity is present." In 1974, I noticed that I consistently got a migraine headache after drinking a lactobacillus milk product, and stopped using (and recommending) yogurt and other lactobacillus foods, though I suspected it was the lactic acid which caused the symptoms. I still consider lactic acid to be a metabolic burden, especially when combined with an estrogen excess, but Stevens' main point, about the significance of our immunological response to systemic bacterial antigens, deserves more attention.

I have previously discussed the use of antibiotics (and/or carrot fiber and/or charcoal) to relieve the premenstrual syndrome, and have mentioned the study in which the lifespan was extended by occasionally adding charcoal to the diet. Recently, I heard about a Mexican farmer who collected his neighbors' runt pigs, and got them to grow normally by adding charcoal to their diet. This probably achieves the same thing as adding antibiotics to their food, which is practiced by pig farmers in the U.S. to promote growth and efficient use of food. Charcoal, besides binding and removing toxins, is also a powerful catalyst for the oxidative destruction of many toxic chemicals. In a sense, it anticipates the action of the protective enzymes of the intestinal wall and the liver.

Our normal defenses against environmental toxins include a surface layer of mucus, the IgA antibodies on membranes, the brush border of intestinal cells, on which protein digestion normally takes place, enzymes in the intestine and liver which hydroxylate and glucuronidate smaller molecules of toxins, and binding-proteins, such as albumin and metallothionein, all of which keep toxins from entering other parts of the body. When toxins get past those barriers, survival depends on other adaptive factors, including the catatoxic steroids and the antioxidative systems.([10](#), [11](#)) Besides metabolizing exogenous toxins, the detoxifying enzymes of the monooxygenase system metabolize endogenous substances, including steroids, prostaglandins, and polyunsaturated fatty acids, which affect allergic reactivity. An imbalance of this system can waste the protective steroids.(12)

Recently, it has been argued that the allergic reaction itself functions as an immunological defense against toxins.(13) However, when the intestine and liver are injured, the production of cholesterol is often decreased to such a great degree that there isn't enough to maintain adequate production of the catatoxic and anti-inflammatory steroids. Many people with the allergic fatigue syndrome have a dangerously low blood cholesterol level of 90 to 130 mg%. (Fruit, because of its fructose content, usually helps restore liver cholesterol synthesis.)

Undercooked and raw plant materials in general are important sources of toxins and allergens. Legumes have recently become more important factors in the U.S. diet, because of a complex shift of ideology about the "healthful" diet, which is often associated with a compulsion to "exercise," and sometimes to use stylish, but toxic, food supplements such as tryptophan, iron, and manganese. Ascorbic acid tablets may be contaminated with enough iron and/or other

catalysts to produce a toxic amount of free hydroxyl radicals.(14) In a vegetarian diet containing very little vitamin A as retinol, carotene can sometimes become toxic, since its conversion to retinol requires vitamin B12 and other liver functions that seem to depend on adequate thyroid function, and excessive carotene can be anti-thyroid as well as anti-steroidogenic. A deficiency of retinol can damage the barrier functions or membranes, various immune functions including antibody formation, and the synthesis of protective steroids.

Some women with premenstrual fatigue have found that the "premenstrual" phase tends to get longer and longer, until they have chronic fatigue. I found that to be one of the easiest "PMS" problems to correct. When people are older, and have been sick longer, the fatigue problem is likely to involve more systems of the body. The larger the quantity of "toxic fat" stored in the body, the more careful the person must be about increasing metabolic and physical activity. Using more vitamin E, short-chain saturated fats, and other anti-lipid-peroxidation agents is important.

Sixty years ago, people with chronic fatigue were often said to suffer from "nervous breakdown," and advised to go to a sanitarium for a vacation, and to stop bothering the doctor. A change of activity, of place, of work, or of associates can sometimes be very therapeutic. Changing the diet can have social and ideological overtones, and can be done more easily while on a vacation trip. But sometimes the problem can be solved simply by avoiding some vegetable materials and food supplements, and/or by correcting hormonal problems, and/or by modifying the intestinal ecology.

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Note - (*) Antibodies to this virus can be found In 90% of the population, so it isn't very meaningful to say that it "causes" those particular conditions.

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