



WILDFIT[®]

BACK TO SPRING

TO BEAN OR NOT TO BEAN

Legumes are not totally bad- but they do not contain much nutrition either. They are taken out during the challenge because we consider them a **'filler food'** and we don't want you filling up on them and then skipping the vegetables. We also don't want to risk them worsening your health conditions instead of healing them.

HERE IS A MORE DETAILED ANSWER:

Nutritional values are based on the legume in its raw state, but once a legume is cooked, it loses much of its nutritional value.

Legumes are a decent source of protein, and most are high in iron, magnesium, potassium, and calcium (which all stay somewhat intact during intense cooking, although the protein may be denatured.) Further, these minerals don't get absorbed due to high phytate levels. On their own, phytates are not a major concern. But if you're planning on eating beans or lentils as a large portion of your diet, then it's worth knowing that you're not actually absorbing a lot of the minerals. Phytates are the way that most plants store phosphorous, but they're also very fond of binding to certain minerals like calcium, magnesium, and potassium. And when that happens, your body is not able to digest and absorb those minerals.

Plants do not want to be eaten, especially their seeds. And so, many plant seeds have concentrated defense systems in place to defend themselves.

Lectins are carbohydrate binding proteins present in most plants, especially seeds and tubers like cereals, potatoes, and beans. In the past two decades we have realized that many lectins are:

- a. toxic, inflammatory, or both;
- b. resistant to cooking and digestive enzymes; and
- c. present in much of our food

Some lectins can be blocked by the sugars contained within the food, but others are not. They are reactive in our bodies in two main ways. They strip away the mucous coat from the mucosal cells of our digestive tract and respiratory systems, exposing naked mucosa and opportunity for overgrowth of the mucosa by abnormal bacteria and protozoa. Lectins also cause discharge of histamine from gastric mast cells, which stimulates acid secretion. If they make their way into the bloodstream, it is thought that they may be implicated in insulin dependent diabetes, rheumatoid arthritis, IgA nephropathy, and peptic ulcers among other auto-inflammatory conditions. The reason that we are not all affected by these conditions may be due to genetic variations and that already weak/ill bodies are more easily affected.

Saponins are designed to protect plants from consumption by microbes and insects by dissolving the cell membranes of these potential predators. All plants contain saponins, but they're often concentrated in the seed.



Because of their detergent-like structure, saponins can interact with the cholesterol molecules embedded in cell surface membranes, create holes in the surface membrane of the cells that line our gut (enterocytes), allowing a variety of substances found in the gut to enter the cell. Legumes contain high doses of saponins (and, in general, contain types of saponins that interact more strongly with cholesterol) and so are more likely to increase gut permeability than some other seeds. Once in the bloodstream, they can cause further issues. At sufficient concentrations, they cause hemolysis (destruction of the cell membrane of red blood cells). Saponins can also affect the immune system, leading to the production of pro-inflammatory cytokines (chemical messengers that tell white blood cells to attack) and can further contribute to inflammation in the body. Unfortunately for legume lovers, they are incredibly stable in heat processing.

Protease inhibitors are the seed's attempt to escape digestion completely. These are compounds designed to neutralize the digestive enzymes that would normally degrade the plant's proteins (and toxins) into their individual component amino acids. If protease is removed, then the digestive enzymes are left unbalanced. One enzyme that ends up in excessive quantities during this process is trypsin, which is very good at destroying the connections between cells. This can weaken the connections between the enterocytes (gut wall cells), creating a pathway for the contents of the gut to leak into our bloodstream. Once the undigested proteins move into the bloodstream, they create inflammatory reactions that result in inflammation.

Pretty much all legumes contain Galactins, which are a particular type of FODMAP. FODMAPs are a collection of short chain carbohydrates and sugar alcohols found in foods naturally or as food additives that are known to trigger IBS symptoms such as excess wind, abdominal bloating and distension, abdominal pain, constipation or diarrhea, or a combination of both. I can't really say that you should definitely avoid legumes but I can no longer recommend them as a nutritious part of a healthy diet. There little to gain from eating beans versus the potential for digestive and hormonal side effects. If you are going to eat legumes, then it makes sense to soaking and sprouting them, which can break down some of the lectins and phytates (but not all).

CITATIONS:

www.ncbi.nlm.nih.gov/pmc/articles/PMC1115436/
www.ncbi.nlm.nih.gov/pubmed/21374488

Francis G, et al. "The biological action of saponins in animal systems: a review." *Br J Nutr.* 2002 Dec;88(6):587-605. Gee JM, et al. "Effects of saponins and glycoalkaloids on the permeability and viability of mammalian intestinal cells and on the integrity of tissue preparations in vitro." *Toxicol In Vitro.* 1996 Apr;10(2):117-28.

Johnson IT, et al. "Influence of saponins on gut permeability and active nutrient transport in vitro." *J Nutr.* 1986 Nov; 116(11):2270-7. Rackis JJ, et al. "Protease Inhibitors in Plant Foods: Content and Inactivation." *Nutritional and Toxicological Significance of Enzyme Inhibitors in Food.* Volume 199 of the series *Advances in Experimental Medicine and Biology.* 299-347

Ariel Richards Holistic Health 2018 | arholistichealth@gmail.com | www.arholistichealth.com