Today, of course, we know that most proteins from both plants and animals are “complete proteins” (meaning they contain all of the essential amino acids we need). However, people sometimes use the term “low quality” to refer to plant proteins because they typically have a lower proportion of these essential amino acids as compared to animal proteins.

But it’s important to understand that having a higher proportion of essential amino acids, as animal protein does, is actually damaging (not advantageous) for our health. We outline seven ways that animal protein damages your health.

1. Animal Protein and Fiber (or total lack thereof)

Unlike plant protein, which comes packaged with fiber, antioxidants, and phytonutrients, animal protein comes with exactly none of the foregoing. To this point, meat, eggs, poultry, dairy, fish and other animal foods have absolutely no fiber whatsoever.

Many people, in their effort to “get enough” protein, tend to eat large amounts of animal foods, which displaces plant foods that have these important nutrients. Fiber deficiencies, in particular, are far more common than not.

For example, The Institute of Medicine recommends that men consume 38 grams of fiber, but the average adult only eats about 15 grams per day—less than half the recommended amount. In fact, according to the USDA, almost all Americans (~95%) do not get an adequate amount of dietary fiber.

High fiber intake is associated with decreased cancer risk, specifically colon and breast cancers, as well as lower risk of ulcerative colitis, Crohn's disease, constipation and diverticulitis. It may also reduce the risk of stroke, high cholesterol, and heart disease.

2. Animal Protein and IGF-1 (increased cancer risk)

When we ingest proteins that have a higher proportion of the essential amino acids (which is a characteristic of animal protein), it results in our bodies producing higher levels of the hormone insulin-like growth factor-1 (IGF-1).

This hormone stimulates cell division and growth in both healthy and cancer cells and, for this reason, having higher circulating levels of IGF-1 has been consistently associated with increased cancer risk, proliferation, and malignancy.

3. Animal Protein and TMAO

Consuming animal protein also results in us having higher circulating levels of trimethylamine N-oxide (TMAO).

TMAO is a substance that injures the lining of our vessels, creates inflammation, and facilitates the formation of cholesterol plaques in our blood vessels. And that, of course, is highly problematic for cardiovascular health.

TMAO is created by complex interactions involving our gut flora and the nutrients in the food we eat. And when we eat animal foods, it alters our gut flora in such a way that facilitates the creation of TMAO.

So, consuming animal foods result in higher TMAO levels, which is damaging to our vessels. Even without all of the other problematic aspects of animal foods, this one issue involving TMAO is, according to the recent president of the American College of Cardiology Dr. Kim A. Williams, sufficient by itself for people to vigorously avoid animal foods.

4. Animal Protein and Phosphorus

Animal protein contains high levels of phosphorus. And when we consume high amounts of phosphorus, one of the ways our bodies normalize the level of phosphorus is with a hormone called fibroblast growth factor 23 (FGF23).
FGF23 has been found to be harmful to our blood vessels. It can also lead to hypertrophy of the cardiac ventricle (abnormal enlargement of our cardiac muscle) and is associated with heart attacks, sudden death, and heart failure.\textsuperscript{12,13} So eating animal protein with its high concentration of phosphorus can result in increased levels of this hormone in our bodies, which in turn is highly problematic for our health.

5. Animal Protein, Heme Iron, and Free Radicals

Iron is the most abundant metal in the human body. We can consume it in two forms: (a) heme iron, found widely in animal foods like meat, poultry, and fish; and (b) non-heme iron found widely in plant foods.

One of the problems with heme iron is that it can convert less reactive oxidants into highly reactive free radicals.\textsuperscript{14} And free radicals can damage different cell structures like proteins, membranes, and DNA.\textsuperscript{14,15}

Heme iron can also catalyze the formation of N-nitroso compounds in our bodies, which are potent carcinogens. So, not surprisingly, high intake of heme iron has been associated with many kinds of gastrointestinal cancers as well as other pathologies.\textsuperscript{15}

It is true that heme iron has higher absorption rates and bioavailability than non-heme iron. However, iron itself can cause oxidative stress and DNA damage, so with iron generally, it’s not always a situation where “more is better.”\textsuperscript{15}

While we definitely need iron, the absorption and bioavailability of iron from a well-rounded plant-based diet is generally adequate, and we can avoid the problems associated with heme iron and other negative health attributes of animal foods.\textsuperscript{16,17}

6. Higher Sulfur-Containing Amino Acids and Bone Health Problems

Animal proteins also have, in general, higher concentrations of sulfur-containing amino acids, which can induce a subtle state of acidosis when metabolized.\textsuperscript{18} One of the mechanisms our bodies use to compensate for this acidosis is leaching calcium from our bones to help neutralize the increased acidity. Over time, this can have a detrimental effect on bone health.\textsuperscript{19-24}

This is thought to be one of the reasons why some studies have found that populations with higher dairy consumption, as well as higher consumption of animal protein in general, also have a higher incidence of bone fractures.\textsuperscript{18-30}

7. Animal Protein and Cholesterol

Most animal foods contain saturated fat and cholesterol (this is true for even so-called “lean” meats like chicken, turkey, and salmon, regardless of how they are cooked or prepared—even if boiled, baked, or steamed).

As humans, we do not need to consume any cholesterol, since our bodies synthesize all the cholesterol we need for our physiologic functions.

Eating cholesterol despite this fact is problematic for our health, as it increases our risk of developing heart disease—currently the No. 1 cause of death for both men and women in the United States.\textsuperscript{31-37}

Atherosclerosis, or plaques of cholesterol that accumulate in the lining of our vessels, is exquisitely less common on a plant-based vegan diet devoid of animal products. And some studies have found that eating this way can even reverse atherosclerosis.\textsuperscript{32-37}

The Real "High Quality" Foods

Given all the issues, the “high quality” aspect of animal protein might be more appropriately described as “high risk” instead.

And there’s no need to obsess about getting enough protein either. If you are eating a sensible variety of plant foods (e.g., vegetables, fruits, legumes, grains, roots, nuts, and seeds), and you are eating enough calories (i.e., you feel satisfied), there is no need to worry about protein adequacy.

The amino acids we need are structurally identical regardless of the source. However, as discussed above, there are serious health implications depending on whether the amino acids are packaged within animal or plant foods. Dr. Walter Willett, the chair of Harvard’s Department of Nutrition, said it well:

“To the metabolic systems engaged in protein production and repair, it is immaterial whether amino acids come from animal or plant protein. However, protein is not..."
consumed in isolation. Instead, it is packaged with a host of other nutrients.\(^{42}\)

He therefore recommends that you "pick the best protein packages by emphasizing plant sources of protein rather than animal sources."\(^{42}\)

In the end, plant foods are the real "high quality" foods that we should be eating for optimal health.

Sources:

3. Youngman LD, Campbell TC. Inhibition of aflatoxin B1-induced gamma-glutamyltranspeptidase positive (GGT+) hepatic neoplastic foci and tumors by low protein diets: evidence that altered GGT+ foci indicate neoplastic potential.
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