

[IMAGE]

## The Meat of the Matter

By Marlene Merritt, DOM, LAc, ACN

I've always wondered if the butchers behind the counter at Whole Foods are ostracized by their plant-centric co-workers. With all the movies like Food, Inc that cause people to immediately become vegan, to the studies stating that meat causes cancer, and is inflammatory, is it no wonder that many of our patients apologetically admit that they still eat meat? So what's the truth about meat? Is it really that bad?

When I teach critical thinking and how to analyze research, I point out that despite what we think is true, IF AN EXCEPTION EXISTS (and I don't mean an individual, but an entire culture) then what we believe is simply not true. It means there is more investigation to be done, to see what's different and why. Mostly, though, what we tend to do is ignore what we disagree with, disregard science and keep marching forward with our beliefs, incorrect or not. So keep this in mind as we look at what's true and false about meat.

First, it's true that meat is inflammatory. Perhaps the best way to say this is, how we eat meat NOW is inflammatory. And it's inflammatory for multiple reasons. The first is the concern about arachidonic acid (AA). Just so you know, arachidonic acid is a necessary Omega-6 fatty acid — it's present in the brain in amounts equaling DHA and it's necessary to maintain hippocampal cell membrane fluidity for memory and for intelligence in infants. Studies have shown that ingesting 1200 mg of AA (which is 12 times more than the average intake in the U.S.) has no effect on inflammatory markers. However, AA has a delicate balance between Omega-3 and Omega 6 fatty acids, so disparities of any of these cause unwelcome effects. An analysis of a Paleolithic culture (who did not have the level of inflammatory disease that we now have) shows an AA intake that is double ours. So, again, what's wrong with us or our meat that gives us a different result? Guesses, anyone?

meat - Copyright â Stock Photo / Register Mark What about AGE's? Those Advanced Glycation Endproducts that conveniently have an acronym that tells us what they do? These can be formed when meat is cooked a certain way (more on this in a second) or with glycation, when a protein binds with a sugar. A sugar, you say? Well, imagine that — where do you think that protein is running into a sugar? In our bloodstream, with all the sugar and refined carbohydrates we eat. The worst reactions are with glucose, fructose (both of which form sucrose, which is table sugar) and galactose.

Despite the mental picture we have of a caveman holding a leg of something over an open flame, that's not actually how they cooked a lot of their food — they preferred boiling or wrapping meat in leaves for cooking. Grilling isn't actually good for our health. Every time you cook meat at high temperatures, **ESPECIALLY** over an open flame, you create compounds that are potentially carcinogenic. Those compounds include:

- Heterocyclic amines (HA's): these form when amino acids, sugars and creatine react at high temps (typically over 300 degrees)
- Polycyclic aromatic hydrocarbons (PAH's): these form during grilling, when meat juices and fat drip onto the fire below, causing PAH-containing flames to leap up and coat the surface of the meat. You can find PAH's in nearly any food that's been charred or smoked.

HA's and PAH's are also found environmentally, like in cigarette smoke, diesel exhaust, airborne particles, rain water... the problem with these two compounds is that they can cause DNA mutations when enzymes in your body "activate" them, creating an opportunity for cancer. Animal studies show HA's causing cancer quite consistently (especially colon, skin, breast and prostate cancer), and lung and leukemia show up with PAH's. And observational studies have definitely shown pretty solid links between well-done, barbecued, or fried meat, and cancers. High temperature-cooked meat, especially over an open flame, is something to limit (especially since you don't know your exposure from other sources). This dry type of cooking is what also increases AGE's in the body.

Then there's the problem of the REST of the animal. We didn't used to eat like this, where we ate a few choice pieces and threw the rest away. Actually, for the native Americans, the most valuable parts of an animal were the organs, and they threw the muscle meat to the dogs, because it had the least nutrition. Of course, there's no shortage of food now, so we get to pick and choose what we want to eat and apparently what we want to eat is filet mignon and ribeye. Not kidney, liver or heart, which is a bit unfortunate, as those meats are infinitely higher in nutrients than muscle meat. Filled with minerals (often more than vegetables), the full complement of B vitamins (as in liver), or Co Q10 (as in heart), vitamins A and D (again, liver)... this is how traditional cultures survived when food wasn't fortified. There's a misnomer about the liver storing toxins, by the way... if that was accurate, your liver would be huge by the time you were elderly. What the liver does is conjugate toxins for excretion through the bowels. Where you store toxins is in fat, which is why the cleaner the source of your meat, the better.

Think for a moment about how little variety of meat you eat. Even the fish we eat is just muscle meat. Muscle meat has a different nutritional profile than other meats — it's high in methionine, which, when you don't have enough B vitamins, turns into homocysteine and can't convert out of that. Homocysteine has been associated with both increased cardiovascular problems and brain degeneration and is a marker for inflammation. On the other hand, when you cook bones into a soup, or eat chicken skin, or chew gristle, etc, you're eating something high in glycine. Glycine is the precursor for collagen, helps with heme formation, detoxification reactions, neurotransmitter function, is the precursor for glutathione, and quite a few other things. And metabolizing only methionine uses up glycine, and then we eat any foods that replenish those stores. Any bone, tendon, ligament, skin healing problem or leaky gut issue can have its root in a glycine deficiency.

People will also argue that eating meat is awful for the environment, and it definitely is, no question about it. But again, it's how we eat meat NOW that's the problem. Conventionally raised animals in feed lots eat an enormous amount of grains, instead of grass, changing it's nutritional profile for the worse, and driving a structure that requires a lot of farming. Much of the carbon footprint worldwide from cow products comes from clear-cutting rainforests to create grazing lands, which we don't do here, and we import very little from those countries. It's actually not cow farts that cause methane, but cow burps, but again, landfills easily lead for methane production and it's actually mostly from kitchen waste. When composted, kitchen waste makes carbon dioxide, but when it rots in a landfill? Methane. It's been reported that raising cows on grass reduces reduced greenhouse gas emissions by 40%, consumes 85% less energy and if done correctly can sequester large amounts of carbon into the fields. And we don't take into account the transport and production of our vegetables. This study pointed out that "Long-distance air transport, deep-freezing, and some horticultural practices for producing fresh vegetables may lead to environmental burdens for vegetarian foods exceeding those of locally produced organic meat." Just keep that in mind when you're thinking you're committed to the environment yet are debating between local, organic and out-of-state-or-country foods.

What about the claim that animal protein causes cancer? If that was true, then the traditional Inuit would have had rampant cancer (instead of their .01% rate) because they ate mostly animal protein and fat, as the permafrost kept them from planting vegetables. Of course, they're not the only example but it's good to keep your critical thinking skills sharp by realizing that a large exception to a claim means that claim is wrong. Now, remember that SOMETHING is causing the tripling of cancer rates since the year 1900 and it's possible that how we eat meat currently is a contributing factor — we eat feed-lot raised meat, we

process our meat with crazy chemicals, we don't eat enough vegetables, we eat too much sugar — all of these things and more are causing our systems to become so imbalanced that cancer gains a hold much more quickly than in the past. But to simply say animal protein causes cancer doesn't make sense when a ketogenic diet is being utilized to treat cancer.

The problem is, there are certain nutrients that you simply cannot get from plant sources so you are risking poor health by not eating meat, although clearly you are also risking poor health if you eat meat incorrectly. Despite what you might read on the internet regarding being healthy as a vegan/vegetarian, there is negligible amounts of B12 in soil, you don't convert betacarotene to vitamin A nearly as well as you might think, vitamin D2 (found in plants) is not as effective as D3, etc. I'm finishing a Masters in Nutrition and at that level, there is no debate about these topics, as there is no decent research to support the claims of veganism, and depending on the strictness of the vegetarian, very little evidence that being vegetarian is better than not. Now, that being said, there is no question that we all need to eat more plants, and we should all be on a plant-based diet. But that term has been hijacked to mean vegetarian, but it shouldn't — it means the bottom of your personal food pyramid should be plants.

Which might leave you with the question, what do you do? You mean, besides eat more vegetables and eat them first so that you eat more of them and less of everything else? When you cook, try to not cook your meat on open flames or temps over 300, and limit charred or smoked foods (cut off any charred bits before eating). I recently saw a grilling mat that was used to prevent flare-ups — something like that could be helpful. Use a marinade with lemon juice, red wine, onion or garlic, which can cut levels of HA's substantially. If you're cooking on a high heat surface, turn the meat continuously or partially cook it using gentler methods like lower temps, steaming, etc. beforehand. Learn to use a crockpot, how to make soups (using real stock made from bones), stews. Buy local (this includes vegetables), and as clean a source as you can get.

It's probably not necessary to eat as much protein as we do, depending on your circumstances. There are a million reasons why we need more vegetables, but when your mouth is trained to want sweet things, and grilled proteins, then it's hard to want to eat vegetables. But keep trying — it's like when I work with kids, and I train the parents that the kids have to "Take a bite. Just a bite. You don't have to like it, but you have to have a bite." And just keep going from there.

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