

Alfalfa Sprout Ideology

Some Research On Raw Foods Diet Theory

By Verne Varona

Of all current popular diets, from the Blood Type, South Beach, Macrobiotic, Atkins and Raw Food, none seem to be more rife with idealism and extreme dogmatism as the Raw Foodists. Well, maybe some hard-core macrobiotics might tend to get carried away, but in every ideology you're bound to find idealism. This article will attempt to add practical reality to many raw food claims, not for the purpose of devaluing it, but to offer a balanced view of its merits, as well as its fallacies.

Practical logic dictates that we should eat what seems more agreeable and in a form that lends itself to comfortable digestion. Since the advent of fire, when someone perhaps threw a carcass into a fire and discovered that the meat tasted better and provided additional warmth, we've applied heat to our foods as an extension of digestion. Obviously, some foods, such as raw beans, raw rhubarb, squash or raw rice are better when cooked.

To someone with irritable bowel syndrome (IBS), raw food might be an invitation to pain, since foods that have not had their roughage softened by the element of heat can create digestive discomfort in some with compromised conditions. For someone anemic, liberating the nutrition from deep within the vegetable cellulose fibers requires heat. Without this measurement, raw food, over a period of time, could be one of the causes of vitamin deficiency. Older individuals often find raw food equally irritating, so the one-size fits-all paradigm of salad recommendations doesn't apply across the board.

On the other hand, foods that are heavily fried, broiled or intensely salted, are best avoided. Dietary styles of cooking should be varied for textural appetite as well as more effective nutritional absorption. Vegetables can be added to *soups*, or *stews*; they can be *broiled*, *steamed*, *quick boiled (blanched)*, *water-fried* (an Asians culinary technique), *pressed*, *sautee'd*, or finely chopped *raw*, for maximized digestion.

What Bugs Bunny Never Knew...

Researchers¹ at the University of Arkansas in Fayetteville heated carrots with and without the skin and then stored them at 40 degrees centigrade (104 degrees Fahrenheit) for 4 weeks, measuring antioxidant levels and comparing them with the levels found in raw carrots. They found that the antioxidant levels in carrots that were cooked and pureed was more than three-times higher than levels measured in the raw varieties.

¹ Journal of Agricultural and Food Chemistry 2000;48:1315-1321

Antioxidant levels had increased by more than 34% immediately after cooking. They theorized that heating softened the carrot external tissue, allowing phenolics attached to the cell wall to be released. They also found that keeping the outer skin on the carrots also boosted antioxidant activity slightly.

The study's lead author, Luke Howard, told *Reuters Health* that, "Many consumers think that fresh vegetables are always superior in nutritional quality than processed vegetables, but this does not appear to be true, particularly for carrots."

The Myth of Lost Nutrients

Recently, a team of five researchers from two universities, Anapoli and Parma, studied what happened² to the nutritional content of carrots, broccoli and zucchini (known as *courgettes* in Britain) when the foods were steamed, boiled or fried. It was found that cooking these vegetables with water, steaming or boiling them, retains their antioxidants better than frying as a cooking style.

Steaming broccoli increases its *glucosinates*, which may help fight cancer, compared with consuming raw broccoli. All three ways of cooking were responsible for increased antioxidant levels. The researchers theorized that this due to the "softening of the vegetable cell matrix where valuable nutritional compounds are bound."

Unfortunately, sloppy science prevails in the raw-food movement. The more extreme advocates for a raw diet mistakenly conclude, and in black and white tones, that all cooked foods are bad. This is simply, not true. It is true that food cooked at extremely high temperatures, especially when it's fried or barbecued, form toxic compounds while many nutrients diminish.

Overcooking can also reduce some of the important water-soluble vitamins (vitamin c and b-complex groups) that we require on a daily basis.

And, it's equally true that some enzymes which function as phytochemical nutrients in our body can be easily destroyed by overcooking. However, cooking in many cases of food preparation, is required for better absorption and to meet human nutritional needs.

Minimal amounts of nutrients are reduced by common forms of cooking such as in the making of soup. In fact, some nutrients are made more absorbable. These nutrients would have been absent if the vegetables had been eaten raw. Cooking can actually destroy some of the harmful anti-nutrients that bind intestinal minerals and block the utilization of nutrients.

² *J. Agric. Food Chem.* 2008, 56, 139-147 139 – "Effects of Different Cooking Methods on Nutritional and Physicochemical Characteristics of Selected Vegetables."

The very destruction of these anti-nutrients actually *increases* digestive absorption. Some forms of cooking such as steaming breaks down the cellulose off the plant fibers, altering the plants cell structures so *less* of your own gut enzymes are required to digest the food, *instead* of more. Conversely, roasting nuts and baking cereals reduces the availability and absorbability of protein.

The traditional act of cooking also significantly improves the digestibility/bioavailability of starchy foods such as tubers (potatoes, yams, etc.), squashes, grains, and legumes through the process of *gelatinization*.

Acryla—What?

Acrylamides. The word alone even sounds toxic. If you love fried, deep-fried, baked, grilled or barbequed foods, especially French fries, potato chips, cookies, breakfast cereals, breads and other high processed foods, such as coffee, roasted almonds and grain-based coffee substitutes, then listen up: It *is* toxic!

This form of extreme cooking can be harmful, depending on your volume. Acrylamides are a chemical that forms in certain foods, particularly plant-based ones that are rich in carbohydrates and low in protein, during processing or cooking at high temperatures. They are known to cause cancer in animals and were discovered in high starch foods by the Swedish National Food Authority in 2002.

Food that is steamed or made as soup, requires a fixed temperature fixed of 100 degrees Celsius (or 212 Fahrenheit), as a minimum to boil water. Such moisture-based cooking keeps food from browning and forming toxic compounds that are now known as, Acrylamides.

Acrylamides have been known to cause genetic mutations, leading to a wide range of cancers in lab animals, including breast cancer and uterine cancer. Most acrylamide in food is formed when a natural amino acid called *asparagine* reacts with certain naturally occurring sugars such as glucose. However, this only occurs when the cooking temperature is sufficiently high, a temperature which varies depending on the properties of the product and the method of cooking.

These rock stars of heat-inspired toxins, are not simply formed with steaming or quick boiling. They are specifically formed with dry cooking, such as baking, grilling or barbequing, as well as high heat deep-frying.

Enzyme Loss Just Ain't So...

A dubious contention from hard-core raw food propaganda centers on the need for Enzymes and the claim that cooking heat destroys valuable enzymes. The fallacy that's promoted here is that the fragile heat-sensitive enzymes held within the plants we consume catalyze chemical reactions that occur in humans and aid in the food digestion. However, this is simply not true.

It is well known that plant foods do not supply enzymes that aid in their digestion when consumed by animals. Cooking sometimes alters the plant cell structure so that the nutrients become more accessible to our own body's digestive enzymes (such as by gelatinizing starch), or destroys anti-amylases or anti-proteases. As a result, in many cases, cooked food actually requires *less* enzymes for digestion than raw food.

The raw food notion that our body has a limited enzyme potential and therefore requires a large part of our diets to be uncooked, is, according to much research, idealistic fiction. Digestive enzymes in food are exactly how they're described: a supportive step for digestion. Naturally, enzymes can help, whether they're inside or outside the body. Examples of enzymes activity occurring outside the body are the ripening of fruits, sprouting of grains, seeds, pickling, or the aging of meat. These are forms of external food processing that numerous cultures have practiced for thousands of years to naturally improve digestion. Cooking can be considered the final act of digestion in this regard.

The Hallmark of True Health

As the axiom goes, all extremes are toxic, which is why the hallmark of health has always been *moderation*--especially when it comes to cooking.

From a Traditional Chinese Medicine (TCM) point of view, cooking is an extension of digestion, allowing us to take large amounts of food and through a variety of mild cooking styles, condensing this matter into concentrated nutrition. Cooking also provides us with travel adaptability, provides warmth in colder climates and by raw preparations, offers an internal coolness for balancing warmer climates. In fact, this is a natural progression of food preparation climatically throughout the world.

Often, people who have eaten large volumes of animal protein in the past and who have had a reliance on excessive cooked and fast foods, do quite well including a large part of their vegetable diet as raw, as they reduce meats, fats and sugars. This, in its own extreme scenario, is a form of balance—at least temporarily.

Conversely, I've seen a number of raw food clients who were either anemic, listless, suffered from poor sleep and loss of libido, suddenly do very well by including a bit of animal protein and/or more cooked foods.

Which prompts the assumption that the hallmark of health is indeed, *moderation*. Some raw, well chewed vegetable dishes can enhance the diet palate of almost any healthy individual, while those that might feel weak from a more raw approach should do well to include increasing amounts of a variety of cooked food.

When ‘My Way Or The Highway’ Keeps You Stranded

Just as there is no one degenerative condition that we all suffer, there seems to be no one exact way of eating that is universally recommended for everyone. Even the notion of such an idea smack of idealism. Granted, in the last 10,000 years, we’ve include whole grains into our diets, along with concentrates of oil, sugar and animal protein.

If you’re a conscientious adult whole foods chances are you ate cartoon character cold box cereals for breakfast that were loaded with sugar, had milk and cookies before bed, and chased the ice cream truck down heat sizzling streets in the summer. Think about what you ate that passed for food, then. So, our human design is not only very forgiving, it’s adaptable. But, sometimes, this takes time.

Some people have a tolerance for ample portions of whole grain, others cannot assimilate large volumes of whole grain. Some research that is going in this direction points a finger to numerous acids held within the covering of brown rice. Some of these acids can be reduced with soaking, including salt in the cooking and thorough chewing, however, not all. So, sometimes initial recommendations for whole grain need to be individualized and offered in a gradient amount.

Same for vegetable styles of cooking. Ultimately cooking styles help us balance our food groups, adding textural, taste and color variety. However, the final arbitrator is your experience, and not your theory—no matter how good it sounds.

Go ahead, eat that raw burdock root...I dare you...

Verne Varona, a practitioner and teacher of macrobiotic principles since 1970, is the author of, “Nature’s Cancer-Fighting Foods” (Avery/Penguin Books, 2001), now in it’s 12th printing. His new book, Macrobiotics for Dummies, from the popular Wiley Publications “Dummie” series, is due for printing in late November, 2008. He is currently involved in feature film production through his company, Exceptional Films—and he never met a raw carrot he didn’t like...