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Nutritional Guidelines: How To Eat Clean Food

There are many controversies in nutrition, and it is easy to become confused or even nihilistic about what to eat. In addition, there is enough individual variation among people, that there is no single diet that is right for everyone. Nevertheless, I assert that eating food in as whole a state as possible, free from chemical contaminants, is a good principle for everyone, and can have a profound effect on general health. As Hippocrates, the founder of Western medicine is reported to have said: "Let your food be your medicine, and your medicine be your food."

An unfortunate fact of our modern era is that we live in a polluted world that is becoming increasingly toxic year by year. Since we literally are what we eat, the amount of toxins we ingest can have a significant influence on our body's total toxic load, which in turn can have a major influence upon health. It therefore behooves us to carefully choose our food sources, so that we consume as few poisons as possible.

As far as the vegetable kingdom goes, the best choice is to purchase **organically grown produce** whenever possible. While it is true that even organically grown food can contain pesticide residues (due to drift of chemicals sprayed elsewhere or dishonest labeling), most food labeled as organically grown will have significantly less pesticide residues than conventionally grown food, according to a recent Consumer Reports study. Food that is labeled as "no detectable pesticide residue" may be somewhat cleaner than conventionally grown food, but studies have shown that it does contain significantly more residual pesticides than organically grown food.

Don't delude yourself into thinking that you can 'wash the chemicals' off your produce. A recent study demonstrated that **soaking conventionally grown produce** in biodegradable detergent followed by **vigorous scrubbing** only **removed 20% of the chemical residue!**

In addition to issues regarding toxicity, **organically grown food is more nutritious than conventionally grown food** (probably due to different fertilization requirements and growing methods), with on average 1 ½ to 3 times the vitamin and mineral content of conventionally grown food. (See attached study).

Organically grown produce can be recognized in the store by the numeric code on the label (known as the 'PLU Code'). **Conventionally grown produce has a 4 digit PLU code. Organically grown produce has a 5 digit PLU code, with the first digit a '9.'** **Genetically modified produce has a 5 digit PLU code, with the first digit an '8.'** (So much for the deceitful claim that it is not feasible to label genetically modified food – they are already surreptitiously doing it!)

One term to become familiar with is "transitional." That means that a farm is in transition from conventional to organic certification. Since it is a process that can take three years (in order to allow toxins to leech out of the soil), during that period of time, though the farm must be using organic methods, they cannot use the term organic. Though the food may not be quite as clean as organic, it is the next best thing, and is also a way to support farmers who are making the welcome change to organic growing methods.

Therefore, going from best to worst, the hierarchy of non-toxic produce is:

organic > transitional > no detectable pesticide residue > conventional

One important footnote on this subject is that you will see, especially during the off-season, a lot of 'organic produce' that is grown in foreign countries, such as Mexico or Chile. Aside from the difficulty in ascertaining what the growing practices actually were for this food, when produce bearing ships come into U.S. ports, the holds are sprayed with highly toxic pesticides (some of which could not be used near domestic produce). How much of these pesticide residues contaminate imported organic produce is unknown; therefore, **I avoid purchasing imported organic produce.** (The exception to this is produce imported from Mexico or Canada which is not sprayed upon border crossing).

If you must eat **conventional** produce, such as when traveling or eating in restaurants, it is good to know that not all such food is created equal. Some vegetables and fruits have been found to have **higher pesticide residues** than others on average. It is therefore a good idea to **avoid** the produce that has been found to have the highest pesticide residues. This includes (in descending order of detectable pesticide residues): **strawberries, bell peppers, spinach, cherries, peaches, cantaloupe, celery, apples, apricots, green beans, grapes (Chilean), and cucumbers.**

Conversely, if you must eat **conventional** produce, the following have been determined to have the **lowest detectable pesticide residues: avocados, corn, onions, sweet potatoes, cauliflower, Brussels sprouts, grapes (U.S.), bananas, plums, green onions, watermelon, and broccoli.**

With regard to the animal kingdom, the issues, like the critters, are more complex. Meat, poultry, and fish engender concerns about how they are raised, as well as processed. In

general, **wild animals** (both fish and game) are **healthier** and **more healthful** as food sources than farm raised ones. Because they are more active and consume their natural diet, they tend to be leaner, and have a more healthful fatty acid profile (more omega-3 polyunsaturates) than farm raised animals.

Farmed fish tend to be particularly prone to disease, and so are routinely given **twice the amount of antibiotics given to farmed land animals**. **Farmed salmon** lose the prized **omega-3 fatty acid profile** for which they are renowned. All **catfish** and **trout** are **farmed**, and should be **avoided** for similar reasons.

Among fish, **mackerel, herring, smelt, sardines,** and **cod** are always **wild, cold-water** fish, so they are **high in omega-3** fatty acids. The first four, being small fish, tend to have lower levels of contaminants (heavy metals such as mercury and PCB's [polychlorinated biphenyls]), and so are particularly healthy fish choices. **Halibut** is also a **wild cold water** fish, but, as a **larger** fish, tends to be somewhat **higher in contaminants** than the others listed above, and is an **intermediate choice**. Salmon can be farmed or wild. **Wild salmon** is generally low in contaminants and has a favorable fatty acid profile. It is a **good choice** when available.

Bottom feeders, like **flounder** and **sturgeon**, tend to be **high in contaminants**, and should be **avoided**. **Warmer water** fish, such as **orange roughy, grouper, and red snapper** are wild, and **relatively low in contaminants**, but have **much lower omega-3 fatty acid contents** than the colder water fish; they are therefore **intermediate choices**.

Very large fish such as **swordfish**, which has the **highest mercury content**, and **most tuna** should be **avoided**. **Smaller tuna**, line caught off the coast of Oregon, are as **low in mercury** as salmon, and are available canned at specialty stores and through my office.

Among shellfish, **bay shrimp** are generally net-caught, and, as smaller usually species go, **cleaner** than their larger brethren. All **squid** is wild, and therefore a **good choice**.) Small **bay scallops** may be net-caught, but the larger varieties are usually farmed. **Farmed shrimp**, especially **tiger prawns**, are primarily grown in **polluted ditches** in Southeast Asia laced with chloramphenicol, an antibiotic long ago discontinued (due to toxicity) in the U.S. They may have high levels of toxic contaminants (as well as being an ecological disaster for the areas in which they are farmed by disrupting indigenous agriculture).

Nearly all **oysters, mussels,** and **clams** are farmed. However, since they are not migratory creatures, if they are grown in banks of clean water, they are a reasonable food choice. Pacific northwest **Willapa Bay oysters** are grown in banks that are now being sprayed with **Round-Up** to control algae growth, and are no longer acceptable for consumption. **Lobster** and **crab** are generally trapped from the wild; they are, however, bottom feeders, and should be eaten in moderation.

Unless you hunt, or are friends with someone who does, you may not have much access to wild game. Even animals that have traditionally been thought of as wild are cultivated. As such, when you order venison or rabbit in a restaurant, you are probably eating a farmed animal. Nevertheless, there is a vast difference between the meat of an animal that is “factory farmed” as part of a large commercial operation, and that of one raised organically on a small free-range farm.

Large commercial factory farms (more aptly described as ‘feed lots’) raise animals in crowded conditions where the animals do not have the opportunity to exercise. They are often given feed that differs markedly from their free-range / grazed diet, and that contains pesticides that may or may not be approved for direct human consumption. They are given antibiotics to prevent disease (since they are not healthy enough to resist illness on their own), and may be given hormones or other growth enhancers to increase their size and therefore profitability.

The result of these animal husbandry practices is meat that contains hormonal imbalances, pesticide and antibiotic residues, and an abnormal, unfavorable fatty acid profile. But the horrors of commercial meat do not end there. Slaughterhouse and meat-packing operations are so unsanitary, that the industry (rather than cleaning up their operations) has pushed through legislation that allows them to **irradiate meat** to kill the pathogenic bacteria so as to prevent food-borne epidemics.

Knowing that the word ‘irradiation’ has a negative connotation to the general public, they are substituting the euphemism “**cold pasteurization.**” Irradiation has not been around long enough to know its long term side effects, but there is already enough evidence that it is dangerous to consume that it should be avoided. **Irradiation** of meat produces carcinogens and other potentially toxic chemicals, and preliminary clinical studies suggest consumption can be **harmful**. Irradiated meat should be scrupulously avoided.

Therefore, one must consider all standard commercially raised meat, be it beef, veal, chicken, turkey, lamb or pork, to be some of the least healthful most highly toxic unprocessed food that one could consume.

Conversely, properly raised, humanely slaughtered livestock can be highly nutritious healthful food. Clean meat is an excellent source of protein, vitamins, minerals, and essential fats. In fact, grazed meat has a more favorable fatty acid profile than farmed fish! What is essential is to literally know the source (farm) where the meat is raised. **Only eat meat that is raised on organic feed, allowed to graze, forage, or peck naturally, and raised without antibiotics, hormones, or growth enhancers.** This may require you to contract with the farmer to buy entire animals that are slaughtered in the fall and dressed to your specifications. You would then need to freeze the meat to eat throughout the year. **Graf Century Farm (503-695-5452)** is one of your best local sources for this meat.

Dairy products have two important considerations. First, they are only as clean as the animals they come from. **The dairy industry is rife with similar problems to the meat industry with respect to how the animals are raised, fed, and the contaminants they are exposed to.** Conventional dairy is generally laced with **antibiotics, hormones, and pesticide residues**, among other contaminants. **Horizon Organics**, now owned by a large multinational conglomerate, uses factory farming techniques and should be **avoided**. **Organic Valley**, a cooperative of small truly organic Wisconsin dairy farms, is an **acceptable** alternative for dairy products.

In addition, there are considerations concerning how the milk is processed that can have deep effects upon health. Pasteurization, particularly the now fashionable Ultra-Pasteurization (at an even higher 600° F) denatures the proteins in milk, rendering the food more allergenic. I have seen many a child unable to tolerate pasteurized dairy due to 'allergy' who did splendidly when switched to **raw (unpasteurized) organic milk**.

People have many misconceptions that they will be more susceptible to food-borne diseases if eating raw dairy products, when in fact, the opposite is true. For primarily political reasons, raw dairy is not readily available in this area, though small sources (particularly for goat dairy) can still be found.

The last topic I would like to address in this section is that of genetically modified food (GMO). **Genetically modified food is not the same as unmodified food.** Despite the protestations of the genetic engineering industry, there is enough clinical evidence of animals dying, becoming sterile, having growth retardation, or increased rates of disease on supposedly identical GMO food that there is no doubt that eating such food can be a significant risk to health. Is all GMO food dangerous? At this point, we don't have enough long term study to say that any GMO is safe. Until such time, it is best to **avoid all GMO food**.

Fortunately, at this time **GMO food cannot be labeled as organic**. However, the GMO industry has successfully fought against labeling (even if the manufacturer wants to) which processed foods are GMO or not. Therefore, one must assume that processed foods contain GMO's. This is especially true for common crops, such as corn, soy, potatoes, and tomatoes; where you can assume that if it is not organic, it is a GMO.

Food in its natural state has co-evolved with us to have the perfect fit to be properly digested, assimilated, and metabolized by our bodies. Processing of food removes vitamins and minerals, creates free radicals, adds toxic chemicals, and denatures proteins and fats. This can turn a nutritious healthful whole food into a toxin. Therefore, eating unprocessed food is always a better choice, and obviates any concerns about GMO's.

Cloned food is recently becoming an issue. Research on the health effects of consuming cloned food is scarce. However, cloned animals have a much higher rate of birth defects than naturally conceived animals. As such, I would steer clear of these foods or any foods containing part of a cloned animal as well.