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DECODING THE LANGUAGE OF FOOD LABELS—READING BETWEEN THE LINES

FRIENDS VISITING FROM OUT OF STATE OFTEN REMARK ON the quality and quantity of the fresh fruits and vegetables we enjoy in California. While buying fresh produce at our year-round farmers markets and always cooking at home (where we know exactly what is in our food) is ideal, we often fall short due to busy schedules and long commutes. Although we aspire to eat healthfully, we're vulnerable when we buy prepared foods (try to choose fresh foods over processed foods) or dine out in the Bay Area's fabulous restaurants.

To be healthy, it's important we be informed and know what's in our food. Food companies make that hard for us—sometimes intentionally confusing us to sell more products. Reading labels requires awareness and knowledge. Just because something is labeled "healthy" or "natural," or purchased in a health food aisle or store doesn't mean it is. I've been obsessed with eating healthy food for decades and doing so remains an ongoing challenge. Food labeling is an exhaustive topic, but let's break down a few basics so you can be your own best advocate whether you grab-and-go, dine out frequently, or cook at home:

1. Ingredient Lists

Ingredients appear in order of their amounts in the product. The first ingredient is the largest by volume and the last, the smallest. If the ingredients list sounds like you need a chemistry degree (a red flag) to decipher or you question if ingredients are healthful, check out the Environmental Working Group's website (https://www.ewg.org/) or app.

2. Sugar

It's insidious and hidden in many foods we're not even aware of. While finding two nutritional experts or scientists who agree on any one way of eating is difficult, all agree sugar makes us sick. It feeds cancer cells and exacerbates inflammation and insulin-resistance which is at the root of the diabetes and obesity epidemic today. Plus, it's highly addictive (more so than cocaine), causing us to want to eat more of it. Research by Lenoir et. al. in 2007 reported on a study of rats fed refined sugar and cocaine, with the rats consistently choosing sugar.

Most people in the U.S. don't know how much sugar they consume, because it's not obvious. Food labels measure it in grams which most Americans cannot visualize. I'll help: four grams of sugar equals one teaspoon of sugar.

Sugar has many names: sucrose, high fructose corn syrup, and dextrose, to name only a few—Google the rest. Look for suspects in the ingredients list, but always look at total grams of sugar, then translate it into teaspoons. Try this exercise for one week. Buy a one-pound bag of sugar. Keep a log of your daily sugar grams, translate it into teaspoons and put that amount into a mason jar. If you are not already monitoring your sugar closely, at the end of the week, your choices will change.

3. Serving Size

In 1993, the Federal Department of Agriculture mandated Nutritional Facts labeling on most packaged foods. Serving sizes were based on food consumption and intake surveys conducted in the '70s and '80s. Consumption has increased since then: super-size fries, anyone? In 2016, the FDA required food labels to more accurately reflect consumption, and food labels state a serving size or how many servings per container. Labeled nutrition facts are always per serving size. Food manufacturers calculate small portions on purpose, so it's easy to glide right over this and eat more than one serving at a time

4. Oils

All oils are fat, but not all oils are created equal. Some diets discourage oils or heating oils all together; but, if your diet contains oil, then purchase and use it wisely. Consider how the oil is packaged (opaque containers are better, oil goes rancid with light), where it comes from (there have been imposters), and how it's been processed (extra-virgin, first cold-pressed, refined or unrefined, and whether it's organic, etc.). Next, when deciding how to use it (cooking or finishing), consider the oil's smoke point (the temperature at which it oxidizes, releasing harmful compounds and free radicals). Not all oils are meant to be heated or do well in heated foods, so read labels. Fats that work well under heat include unrefined coconut oil, avocado oil, ghee, algae oil and extra virgin olive oil (the later is better at lower heat). If you have heart disease, check with your physician about using oils.

5. What Do Conventional, Organic, or Natural really mean?

Conventional produce is sometimes sold alongside organic. Read store labels above and below produce to make sure you select what you want. In stores where produce is not all organic, this often adds extra shopping time. An easy way to determine whether a food is organic is the price look-up code. Organic produce has a 5-digit look-up code beginning with the number 9. Conventional produce has a 4-digit code starting with 3 or 4.

Conventional food is produced using technology and synthetic chemicals (targeting insects and weeds) to increase crop yields. This production method may also include GMOs, confined animal feeding operations, monocropping (i.e., same

> crop on the same area each year), and the use of antibiotics. If purchasing or eating conventional food, check out the "Clean Fifteen" and "Dirty Dozen" lists published each year by the Environmental Working Group. The lists rank foods by the amount of pesticides they contain to inform your shopping and dining choices. (https://www.ewg.org/foodnews/)

> Organic food is produced using more sustainable and natural methods that prohibit synthetic insecticides and herbicides, GMOs, hormones and antibiotics, hydrogenation and trans fats, and processing must avoid contamination. Organic livestock production requires feed be 100 percent organic and animals have outdoor access and pasture.

> Organic farming methods encourage biodiversity through crop rotation and mineral-rich soil. Foods can be labeled "100% Organic," just "Organic" (meaning they are at least 95% organic), or "Made with Organic Ingredients" (70% of ingredients must be organic). Farms producing organic produce or meats must meet the strict legal regulations to be certified organic. The USDA Organic seal or a certifying agent seal like CCOF



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(California Certification of Organic Farming) indicates at least 95 percent of the ingredients are organic. Some small farmers find organic certification a burden even though they may adhere to organic practices. These foods sometimes are considered "Certified Naturally Grown." Get to know your local food purveyors at farmers markets or check your favorite brands' websites.

Let's leave the debate about industrial organic versus artisan organic for another discussion.

"Natural" products supposedly contain no artificial ingredients or added color and were minimally processed. However, no consensus on what "minimally processed" includes and no clear-cut standards exist.

6. Genetically Modified Organisms (GMOs)

GMOs are foods modified through genetic engineering. Up to 75 percent of pro-

cessed food available in U.S. grocery stores contains one or more GMO ingredients. Pro-GMO advocates argue foods are genetically altered to become more resistant to pests or herbicides to increase yields for our growing population. However, there's little long-term research on their impact on human health. Detractors argue we don't know what the ultimate effect will be on humans and the eco-system of the planet. Countries from Europe to Russia to the South Pacific have mandatory labeling laws for foods containing even 1 percent GMO ingredients. The U.S. produces more GMO crops than any other nation. The Environmental Working Group cites the foods in the U.S. as most likely to include GMOs: Hawaiian papaya (77%), corn (92%), soy (94%-you might think twice about that soy latte), canola (94%), and sugar beets (98.5%). If you intend to avoid GMOs, consider avoiding those foods when eating out and buy certified organic when shopping.

7. Making Sense of Animal Product Labels

Animal product labels cause the most confusion.

"Cage-free" only means birds raised without cages; that's pretty much it. They can still be raised in indoor, over-crowded conditions. According to the USDA, "free range" means birds have access to the outdoors and can engage in natural behaviors. It does not mean the animals spend most of their time outdoors or were kept in cruelty- or antibiotic-free conditions. Free-range claims are not verified by third-party inspections. "Pasture-raised" means the animal is raised in a pasture (not a feedlot), can move freely, and engages in natural behaviors. "Organic pasture-raised" is ideal. "Grain-fed" simply means animals were raised on a grain diet. To ensure these animals were not given animal by-products in their feed, look for labels that state "100% vegetarian diet." Remember, if these animals were fed a corn or soy diet, this raises other issues regarding GMOs, higher fat content, and the impact of insulin-resistance and inflammation in your body. You are what you eat and what the animal eats as well.

"Grass-fed" animals consume a natural diet of grass containing no grains, animal by-products, or synthetic hormones or antibiotics to promote growth or prevent disease, although they may have been given antibiotics to treat disease. Some producers finish grass-fed animals with grain in a feedlot prior to slaughter. To ensure an animal has eaten grass its entire life, look for "Grassfed" and "Grass-finished" or the American Grass-fed Association (AGA). (http:// americangrassfed,org) logo or certification.

> "Antibiotic-free," "Hormone-free," "Arsenicfree": To avoid antibiotics altogether, look for "antibiotic free" labels to ensure that no antibiotics were given. (Legally, hogs and poultry can't be given hormones.) Milk often contains genetically engineered growth hormones (rBGH) and (rBST) resulting from efforts to increase milk production in dairy cows. These hormones aren't permitted in the EU or Canada. Look for labels that say "rBGH-free" or, better yet, organic milk.

> A few other things: conventional producers often feed chickens arsenic to fatten them faster. Farmed fish frequently contains antibiotics and heavy metals like mercury (wild fish is better). Check out www.cleanfish.com or look for the Global Aquaculture Alliance Best Practices Symbol for the cleanest fish. Some fisheries such as Safe Catch test each tuna.

In Summary

Other common food labels such as dairy-free, gluten-free, and nut-free are straightforward. However, folks with severe allergies should remain cautious: these foods sometimes contain trace amounts. Often the label will state whether the production facility produces other foods containing these allergens—cross-contamination

can be problematic for highly sensitive individuals. The label "vegan" indicates an absence of animal ingredients, including dairy and eggs. Not all vegan and gluten-free foods are healthful or meet some of the other criteria mentioned earlier.

Finally, look for the Fair-Trade seal to ensure farmers and workers who produced your food labored under acceptable conditions and were paid a fair wage.

Regardless of your dietary preferences, hopefully now you can decode the language of food labels to make more informed choices when you shop and order from menus.



