

Food Fright



The food industry has turned out some scary stuff in recent decades, but that doesn't mean you have to stand quaking in your kitchen. Here's how to take the fear out of your food choices – and put common sense back in.

Hormone-enhanced meat. Pesticide-laden produce. Reconstituted this, genetically modified that. Hydrogenated, hydrolyzed. Denatured, dehydrated. Preserved, prepackaged, predigested. The things our food has been through – it's enough to give you goose bumps. And that's before you take a bite.

Many industrial-food insiders assert that if we saw half of what our food went through before it got to our plates, we'd probably never put it anywhere near our mouth. You read up on the food-processing nightmare behind mad cow disease, or watch *Super Size Me*, the fast-food documentary (or is it a horror flick?), and you realize they're probably right.

Food wasn't always so scary. For most of human history, we ate our meats, grains, fruits and vegetables pretty much the way we found them. Oh sure, as our species got more sophisticated, we cooked, ground, dried and aged things a bit. But in the past 60 years, our foodstuffs have changed dramatically, and not all for the better.

Following World War II, nutrition took a backseat to flavor and convenience as chemists discovered new ways to artificially thicken, emulsify, flavor, color, fortify and preserve our food. Suddenly, food could be shipped longer distances without spoiling. Exciting new shapes, colors and flavors appeared on plates around the nation. Global food, drug and chemical companies merged, buying up thousands of family farms and changing the face of agriculture – and the food supply – as we knew it.

The result? In many parts of the country, access to a diverse array of high-quality, whole-food choices has diminished, while processed food has gotten cheaper and more plentiful. In fact, the array of packaged-food choices has grown dizzying. Unfortunately, much of the food we buy today has been stripped of its nutritional value and "enhanced" in ways that do more harm than good.

Not only are many of these processed foods bereft of the vitamins, minerals, enzymes, phytochemicals and fatty acids necessary for good health, but many have been sprayed with pesticides, contain antibiotics and growth hormones, or have undergone genetic engineering. Add in the laundry list of chemical food additives and the distasteful practices that pervade the commercial meat industry, and your appetite may turn tail and run. But the news isn't all gloom and doom. In the past few years, an increasing number of consumers have gotten fed up with what they're being fed and have started demanding more wholesome, organic, natural and sustainably raised foods. And the market has responded. The past five years have seen an influx of foods that are minimally processed, free of pesticides, antibiotics or hormones, and devoid of genetically modified organisms (GMOs). In many markets today, you can find free-range meats and organic corn chips without trying very hard.

This trend is no small blip on the continuum. Organics are the fastest-growing segment of the food industry. Last year, after increasing at more than 20 percent annually for the past four years, sales of organic food shot up 20 percent once again – to more than \$10 billion. According to a 2004 report by the Iowa Department of Agriculture and Land Stewardship, the market for organic dairy (including eggs) grew 500 percent between 1994 and 1999. Experts predict that organic-food sales will reach \$30 billion by 2007.

Access has gotten easier too: A full 73 percent of all grocery stores in the United States now carry organic foods. In 2000, for the first time ever, more organics were sold in conventional supermarkets than in any other type of outlet. Whole Foods, the organic-

grocery chain, has been experiencing growth and profit margins unmatched by any other grocery chain in the country. According to a recent article in Fast Company, in each of the past four years Whole Foods even beat Wal-Mart (the nation's largest grocer) in both overall and comparable-store sales growth.

All this new visibility is creating an intriguing mind-shift on the part of the eating public. In addition to scouring nutrition labels for ingredients, many consumers are now evaluating their food options based on the methods with which those products were produced. They're asking: "Where did this food come from? How was it grown and raised? How safe is it? What environmental impact does it have?" They're also asking larger ethical questions, such as "What methods of production do I want my dollars supporting? What kind of food future do I want my kids to have?"

Do you have questions or concerns of your own? Read up on the issues, figure out which are most important to you, then decide for yourself.

The Produce Bin

Reasons You Might Worry: Pesticides and Toxic Sludge

Despite overwhelming evidence that pesticides threaten human health, conventional farmers continue to rely on these chemicals, and few (if any) conventionally produced fruits and vegetables arrive at the grocery store without pesticide residues. The worst offenders are foods coming from other countries, where pesticides, including those banned in the United States, are still used routinely, and often at much higher levels than allowed here.

For example, a report by the Environmental Working Group (EWG) showed that all cantaloupe samples from Mexico contained detectable levels of chlorothalonil, a probable human carcinogen. Residue testing by the FDA revealed that Chilean grapes harbor 17 different pesticides, including cancer-causing captan and iprodione, and the hormone-disrupting fungicide vinclozoline. The chemical residue in both foreign and domestic produce is so rampant that the San Francisco-based Pesticide Action Network estimates that the typical American diet serves up 60 to 70 pesticide exposures a day.

Pesticides aren't the only problem. To avoid the high price of petroleum-based fertilizers, some farmers have availed themselves of the huge supply of no- or low-cost municipal sewage sludge in order to fortify their fields. In addition to the various pathogens that get flushed down our sinks and toilets, municipal waste may also include heavy metals and other industrial pollutants as well as automotive and chemical residues washed into storm sewers.

While fans of using waste on fields (including the EPA, whose spin doctors have branded sewage sludge with the much nicer sounding term "beneficial biosolids") assert that it's the ultimate in recycling, even the EPA acknowledges that more study is necessary to ascertain whether the practice is safe for the environment and human health. Studies show that toxic metals and industrial pollutants can be transferred from biosolid-treated soil into crops, particularly lettuce, spinach, Swiss chard and carrots. And the EPA's own research found a higher incidence of illness from the *Staphylococcus aureus* bacteria among people living near sludged farmland. But despite the evidence, 7.1 million tons of biosolids are used on American crops annually. Fortunately, the USDA's Organic Standards strictly prohibits the use of biosolids on organic crops.

Sigh of Relief: Sustainable Farming

Many farmers are saying "no" to pesticides and toxic sludge, for the good of their own health as well as that of the land they farm. According to the USDA's Economic Research Service, between 1997 and 2001, certified organic farmland increased 74 percent, bringing the total to 2.35 million acres. The sales of packaged organic salad greens alone skyrocketed 313 percent in 2003.

There's proof that organic produce is better for you. A review of 41 studies published in *The Journal of Alternative and Complementary Medicine* in 2001 compared the nutritional value of organically grown and conventionally grown produce. Researchers found that, on average, organic fruits and vegetables offer 27 percent more vitamin C, 21 percent more iron, 29 percent more magnesium and 13 percent more phosphorus than their conventional counterparts.

There's a bonus, too: Sustainable, organic-farming techniques promote biodiversity and protect air, soil, groundwater and the health of farm workers.

The Meat Counter

Reasons You Might Worry: Mad Cow and Antibiotics

It's easy to be squeamish about beef these days. The first U.S. case of Bovine Spongiform Encephalopathy (BSE), commonly known as mad cow disease, was found in December 2003. Mad cow disease, and its human counterpart Creutzfeldt-Jakob disease, are fatal maladies that cause sudden, progressive dementia, depression, behavioral changes, impaired vision, and a loss of coordination. The culprit is an abnormal protein, called a prion, that transforms healthy protein molecules into infectious ones, eventually causing spongelike holes in the brain.

Officials from both the USDA and the FDA were quick to downplay the risk of the disease in the food chain. The USDA decided to make a one-time effort to test 201,000 sick cows and 20,000 healthy ones, with the full support of the National Cattlemen's Beef Association. But is one-time testing enough? Some beef producers say no. One company, Creekstone Farms Premium Beef, was willing to pay to have all of its cows tested using a newly approved rapid-test kit. But the USDA blocked Creekstone, saying that such massive testing would imply that the entire beef supply was unsafe.

BSE is a recent phenomenon created by cost-cutting innovations in industrial meat production. In order to make use of the parts of slaughtered animals that have no commercial value (including the brain and spinal cord, the parts most likely to harbor BSE), the meat industry traditionally rendered them and used them as feed for other animals, potentially spreading the disease.

Today, obviously sick and crippled cows have been banned from the rendering vat. But it can take up to eight years for an infected cow to show symptoms, which means that a seemingly healthy cow could still harbor BSE. And the slaughtering process itself could potentially spread the disease from a BSE cow. Researchers at Texas A&M University found that fragments of the brain can be released throughout the organs and muscle meat of cows that are stunned for slaughter. And, according to the Technical Educational Institution of Athens, the band-saw that slaughterhouses use to cut a cow's carcass in half creates a fine spray of spinal cord tissue that contaminates the surrounding meat.

Mad cow isn't the only health risk for meat eaters. Because factory-farmed cows, chickens and pigs are subjected to overcrowded and unsanitary living conditions, many are routinely

given low-dose antibiotics to promote growth and keep disease at bay, a practice that may cause resistant strains of bacteria. One recent study in *The New England Journal of Medicine* found salmonella in one out of every five samples of supermarket hamburger the researchers tested – 84 percent of which was resistant to antibiotics. Along with antibiotics, many beef and pork animals are also given growth hormones, including estradiol, progesterone and testosterone. According to a report by a scientific panel commissioned by the European Union, at least one of these hormones can cause cancer. Even so, the FDA and USDA have refused to label hormone-tainted meat.

Sigh of Relief: Safer, More Responsible Meat Methods

"There is a sense of unease in terms of certain aspects of meat production. As a result, there has been a growing demand for organic and natural meats," says Katherine DiMatteo, executive director of the Organic Trade Association.

There have been no cases of BSE reported in animals that have been raised entirely according to organic production methods. Beef labeled "organic" cannot have received any animal byproducts in its feed; even the animal's mother must have been fed organic feed for three months before giving birth. To label beef organic, the farmer must trace an animal from birth to slaughter. Buying organic is a good way to avoid the risk of BSE as well as vote against the common practice of spiking animal feed with antibiotics and dosing cows with hormones.

Consumers willing to do some sleuthing can also find free-range, pasture-fed, sustainably and humanely raised meats. They can find meats raised on small, local environmentally conscious farms, and even choose hamburger ground from a single piece of beef (vs. conventional hamburger, which can contain the meat from hundreds of animals). But be aware that the word "natural" on a label is essentially meaningless. Because "natural" is not a term defined by the USDA, it is not enforceable. For more information on selecting safe, healthy meats and making sense of meat labels, see the sidebar "Where's the (Organic) Beef and Meat," below.

The Dairy Case

Reasons You Might Worry: Hormones

Recombinant Bovine Growth Hormone (rBGH) is a genetically engineered hormone produced by Monsanto and designed to increase milk production. Unfortunately, it promotes significant health problems in cows, problems that are then treated with antibiotics. It also has questionable impacts on the milk that treated cows produce.

The milk from cows dosed with rBGH contains high levels of another hormone called insulin-like growth factor 1 (IGF-1) that causes cells to divide and reproduce. Although a number of small studies have found that excess IGF-1 can cause breast and prostate cancer, the FDA fast-tracked the approval of rBGH in 1993. They based their approval not on the standard two-year testing process, but on a test that lasted only 90 days. The study was never published, and the U.S. Food and Drug Administration refused to allow open scientific peer review of the study's raw data.

The move resulted in a storm of consumer protest. In fact, the FDA acknowledges that rBGH has been its biggest consumer food-safety controversy to date. But instead of fully considering the science showing that rBGH was unsafe, or waiting for longer-range human studies, the FDA – widely viewed to be caving in to industry pressure – simply stood by its original conclusions. The agency also warned milk producers and grocery stores not to

label milk free of the hormone. Monsanto has filed several lawsuits against dairy producers who use "rBGH-free" labels, which they say disparage their product.

Sigh of Relief: Organic Milk, Cheese and Yogurt

Despite discouragement from the FDA and Monsanto, some dairy companies (both organic and nonorganic) do label their milk cartons stating their position against the use of rBGH. By law such labels must also include a statement saying that the FDA has found no significant difference between rBGH and non-rBGH products. The organic label on milk, cheese and yogurt ensures that no rBGH was used during production.

It's becoming easier, too, to find dairy products from pasture-fed animals, which are higher in cancer-fighting conjugated linoleic acid, beta carotene, vitamin E and healthy omega-3 fatty acids. Some people assert that milk from grass-fed cows has a richer taste as well.

Oils and Fats

Reasons You Might Worry: Extraction, Toxicity, Instability

Cooking oils can be some of the most contaminated products on grocery-stores shelves. Many oils, particularly canola, soy, corn and cottonseed oils, are genetically engineered to withstand more pesticides. And if your oil isn't labeled "cold-pressed" or "expeller-pressed," it was probably extracted using the solvent n-hexane, a nervous-system toxin derived from petroleum.

While this extraction process creates a clear, odorless oil with a long shelf life, it removes valuable nutrients and forms unstable molecules called free radicals that can damage cells and reduce immunity. Commercially processed oils also go rancid quickly when exposed to oxygen, resulting in more free radicals. Such oils are commonly used in cookies, crackers, breads, chips and other packaged foods.

Of course, the other bad fats found in grocery items (in more than 42,000 different foods by one estimate) are trans-fatty acids. These trans fats form when liquid oils are hydrogenated, or saturated with hydrogen, resulting in a fat that is solid at room temperature with an exceptionally long shelf life. Numerous studies show that trans fats raise total cholesterol, lower "good" HDL cholesterol, increase "bad" LDL cholesterol, interfere with blood sugar and insulin, and decrease immune function. Because of this, the FDA mandated that food manufacturers start listing trans fats on nutrition labels beginning in 2006. Until then, says Ross Hume Hall, PhD, author of *The Unofficial Guide to Smart Nutrition* (John Wiley & Sons, 2000), consumers should avoid hydrogenated oils, such as Crisco and most margarine, as well as foods that list hydrogenated or partially hydrogenated fats on the label.

Sigh of Relief: Cold-Pressed and Organic

Whenever possible, seek out organic olive, seed and nut oils that have been cold- or expellerpressed. For cooking, you might also consider coconut oil. This saturated fat is making a comeback, thanks to the healthy nutritional profile of its medium-chain fatty acids and its stability at high temperatures. Look for virgin coconut oil, and use an unrefined product whenever a slight coconut aroma is acceptable.

Poultry and Seafood

Reasons You Might Worry: Antibiotics and Toxins

Cows aren't the only animals that are getting less-than-healthy additives in their feed. Arsenic is an approved feed supplement for poultry. In a recent study in *Environmental Health Perspectives*, researchers from the National Institutes of Health and the USDA's

Food Safety Inspection Service sampled the muscle tissue of 5,000 young chickens. They found arsenic concentrations three to four times higher than in any other type of poultry sampled.

Chronic exposure to arsenic (as little as 10 mcg a day) has been linked to an increased risk of skin, prostate, liver, kidney and bladder cancers.

Conventionally farmed chickens are often pumped full of chemically laced feed and raised in cramped group cages that put four or more birds in a cage the size of a sheet of notebook paper, encouraging disease and cannibalism. Although use of antibiotics in healthy animals has been reduced in recent years, it is still common.

As if all of this weren't disturbing enough, America's fish supply has also been contaminated. According to a report by EWG, farm-raised salmon contains significantly higher levels of polychlorinated biphenyls (PCBs) and dioxins than wild Pacific salmon. PCBs were banned in the late 1970s after they were found to cause cancer and birth defects. Dioxins are industrial byproducts that have carcinogenic, reproductive, developmental and immune-system effects. Both PCBs and dioxins are toxins that accumulate in the body's fatty tissue, so even low-level exposure can cause problems later in life.

Sigh of Relief: More Humane, Less Toxic Options

Certified organic chickens are fed organic, vegetarian feed and allowed access to the outdoors. They are not treated with antibiotics or hormones. The USDA does not monitor birds labeled free-range and cage-free, and the methods of individual producers vary, so you have to investigate the producers' claims, weigh your priorities and use your best judgment.

Currently, there is no standard for organic fish. But EWG says that shopping for wild fish like salmon and shrimp can help minimize exposure to toxic chemicals. So can avoiding larger predator fish, such as swordfish, tuna and shark, which accumulate more toxins in their bodies from eating smaller fish. As a rule, fish from industrial areas will be more polluted with heavy metals and dioxins than those from nonindustrial areas. Many environmental and consumer groups are monitoring fishing practices, including fish farming, for sustainability and toxicity. You can download a guide to seafood, including shellfish, and learn more at www.mbyaq.org/cr/seafoodwatch.org.

Baked Goods

Reasons You Might Worry: Nutrient-Stripping, GMOs

Bread may have the reputation as the staff of life, but don't try living on bread made with modern technology. To make white flour, millers remove the fibrous bran and germ from whole grains. Unfortunately, this fibrous material contains most of the plant's nutrition, including dietary fiber, B vitamins and minerals like magnesium and zinc.

While many industrial bakeries and cereal companies fortify their refined grain products with iron and a few of the B vitamins, they don't replace the fiber, an ingredient essential for a healthy gut that can absorb nutrients.

Moreover, conventional baked goods may contain genetically modified corn, soy or canola oil. During processing, millers and industrial bakers also routinely add more than 30 different chemicals, from dough conditioners to preservatives, to help create a uniform product that stays "fresh" for a very long time.

Sigh of Relief: Whole Grains, Natural Products

Choose products that list whole wheat or other grains, such as whole-grain rye, spelt, oats or millet as the first ingredient. When possible choose organic grains and check to see that the label reveals no chemical preservatives or additives. Sprouted grains offer better nutrition and easier digestibility. Breads made with sprouted grains and sourdoughs also have a naturally long shelf life.

Reclaiming Confidence

While the state of the food supply certainly gives the average consumer plenty to be concerned about, there's also plenty to celebrate. According to the Economic Research Service of the USDA, certified organic cropland for corn, soybeans and other major crops more than doubled in the United States from 1992 to 1997, and then doubled once again between 1997 and 2001. Organic poultry and dairy grew at an even greater pace.

More good news: As the supply of organic, sustainably raised food grows, prices are likely to come down. As options like natural foods co-ops, organic grocers, farmers' markets and community supported agriculture (CSA) groups proliferate, access becomes easier, and selection expands. Heirloom produce, artisanal dairy products and heritage meats are all becoming easier to find, even in conventional markets, and are being more aggressively sought out by cooks and "foodies" of all sorts.

Could tasty, healthy, sustainably raised food once again become the norm? In part, that depends on you. Food companies are watching closely to see if the recent, powerful trend toward organics is just a passing fancy or a sea change in the way consumers intend to eat for the long haul. Politicians are listening closely to the concerns of their constituents and in many cases are getting an earful about what citizens do and don't want in the way of labeling, certification, regulation, inspection and more.

Meanwhile, watchdog and consumer groups are keeping a close eye on the behind-the-scenes action and making sure that important food-industry and policy matters make the news, even when manufacturers would prefer they didn't.

It seems that as a society, we are entering a period of intense scrutiny and debate regarding our food, and also a time of tough choices. The good news is, now more than ever, consumers have some great choices. If you're willing to stay informed and shop wisely, you don't have to be afraid of what's lurking inside every salad and enchilada. Instead, you can sit back, relax and relish every delicious, nutritious bite.

Kim Erickson is a freelance health writer and the author of *Drop Dead Gorgeous: Protecting Yourself from the Hidden Dangers of Cosmetics* (McGraw Hill/Contemporary Books, 2002).