

Thirty Years...and Going Strong!

When I started working on this issue, my editor reminded me that this month marks the 30th anniversary of *Alternatives*. I want to sincerely thank you for making this possible. It's only through your support that I'm able to continue my work



Dr. David Williams

and passion of searching the world for ways to maintain and restore our most prized possession—our health.

Looking back over the past three decades, many things have changed. I started this newsletter on a yellow legal pad and then typed it up on a typewriter. I can remember when I got my first computer, the Commodore 64. To

be perfectly honest, it was more frustrating than it was helpful. And the Internet didn't really burst onto the scene until the mid-1990s.

Technology has changed dramatically and will continue to do so, but our body still functions as it has for thousands of years. Sometimes it's easy to get caught up believing that new technological breakthroughs can overcome bad health habits, but one lesson remains everlasting. If we want to live the longest and most productive life possible, we have to take personal responsibility for our health. For as long as I'm able, and while I still have your support, I'll do what I can to bring you the information, insight, and tools to help you do just that. Once again, I can't thank you enough for your loyalty.

Our Bodies Mirror Our Ancestors'

We live in an amazing period of human history. On one hand, we are on the verge of developing mind-boggling technology such as coaxing stem cell activity and 3-D printing to enable us to repair or even create new organs to replace damaged or aged ones. And not only are we finally seeing the true integration of alternative health care into hospitals (for instance, the \$6.2 billion network of the

Cleveland Clinic), our youngest generation could experience a dramatic lengthening of their lifespan. (If you and I are lucky enough, we may be able to benefit, at least in part, from some of these breakthroughs.)

At the same time, we are seeing entire regions of the world collapse and regress into barbaric societies focused on annihilation and tribal practices and traditions from thousands of years ago.

When historians look back on this period, I'm sure they will find the dichotomy remarkable and undoubtedly very interesting to study. You know we're living in strange times when last month's issue of *Alternatives* included an article on the latest research to combat Alzheimer's disease alongside a piece on the importance of stockpiling toilet paper.

For those of us living during this period, it can be confusing and even overwhelming at times. If we aren't careful, the added stress can prove detrimental to our overall health and longevity. It's critical to remain grounded and not forget that, from a health standpoint, our bodies still function the way they did thousands of years ago. Technology hasn't changed that.

Just like other animals, the way we function is dependent on the

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You will observe with concern how long a useful truth may be known, and exist, before it is generally received and practiced on.

— BENJAMIN FRANKLIN

same biological clocks and seasonal rhythms that have existed since the beginning. We require the same essential nutrients, vitamins, and minerals as our ancestors did. Our bodies still need movement and exercise. We are still intimately connected and dependent on various species of bacteria, viruses, and microbes in our environment. Only when we understand this and provide these elements to the body does it have the tools necessary to repair and heal itself.

Most people these days truly don't understand that doctors *don't* heal or cure. These can only take place when the body functions properly. A true doctor's job is to guide patients and help them change the environment in such a way that the body's natural, innate healing ability can take place. That should be our goal and it can be achieved with a better understanding of our bodies' needs and how to fulfill them. This time of year provides an excellent example of why we repeatedly see the same health problems.

How Seasonal Diets Affect Your Health

Throughout human history, the winter season brought about a reduction in the availability of fresh vegetables and fruits. Depending on one's location, energy needs were met with nutrient-dense foods such as fatty meats, organ meat, oily fish, sea vegetables, eggs, certain

berries, potatoes, olives, nuts, seeds, and fermented vegetables.

Once spring arrived, fresh plant foods were once again incorporated into the diet, which provided the necessary phytonutrients (compounds found in plants) for optimal metabolism or energy production.

The way our bodies work and their requirements haven't changed over the last hundred years. But our eating habits and environment certainly have.

With a fast food outlet on every corner, grocery stores stocked with processed, high-calorie, shelf-stable foods, and the constant availability of fresh meat, we tend to eat what was once a "winter diet" year round.

For the large majority of people, spring is no longer a time to switch over to a more fruit- and vegetable-heavy diet to replenish necessary phytonutrients. As a result, we've seen an epidemic in metabolic-related health problems. Phytonutrients are also essential for effective function of the immune, nervous, and digestive systems.

Not surprisingly, over the past couple of decades, many of these phytonutrients have been "rediscovered." They have become household words and the "latest scientific discoveries" for preventing and treating various health problems. They include such compounds

as lycopene, resveratrol, lutein, carotenoids, flavonoids, lignans, curcuminoids, anthocyanidins, capsaicin, chlorophyll, tannins, and indoles, to name just a few.

Without necessary phytonutrients, your body has difficulty converting fat stores into energy. To compensate, it breaks down muscle tissue. You experience cravings for carbohydrates. Energy levels fluctuate and decline. Chronic fatigue sets in, resulting in the lack of motivation to exercise and stay active. Weight gain occurs as fat storage increases. The situation becomes self-perpetuating. A vicious, chronic cycle is created that becomes very difficult to break.

Do You Have a Metabolic Problem?

There are numerous signs of a metabolic disturbance. One of the top is an elevated triglyceride level.

On a high-carbohydrate diet, any excess blood sugar that isn't burned immediately for fuel is broken down by insulin and converted to triglycerides. Triglycerides are released into the bloodstream and transported to fat tissues, where they are stored and later used for energy.

High triglyceride levels increase the risk of heart disease. Triglycerides also block the ability of leptin, a hormone produced by fat cells, to signal the brain to stop eating. Additionally, triglycerides

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Dr. Williams works with Healthy Directions, LLC to develop his unique formulations that supply many of the hard-to-find nutrients he recommends. Dr. Williams is compensated on the sales of these nutritional supplements and health products, which allows him to continue devoting his life to worldwide research and the development of innovative, effective health solutions.

inflammation of the liver, further interfering with the metabolic process.

One of the quickest ways to normalize triglyceride levels is to replace simple carbohydrates (sugars) with phytonutrient-rich plant foods and stabilize energy levels with a fish oil supplement. Phytonutrients reduce liver inflammation. They also improve insulin and leptin sensitivity, resulting in more stable blood sugar levels and a reduction in cravings and appetite. With a shortage of phytonutrients, the long-term loss of excess fat (weight) becomes next to impossible.

The Ever-Increasing Rise in Allergies and Asthma

In the spring and early summer, we now see an ever-increasing rate of allergies and asthma. Allergies are the fifth leading cause of chronic disease in this country, and they're getting worse each year. Currently, 34 percent of US children develop allergies or asthma compared to less than 20 percent of foreign-born children. For some reason, this phenomenon seems to have baffled scientists, doctors, and medical researchers totally.

The immune system is comprised of several cellular components, one being mast cells. When mast cells come into contact with allergens, they burst and release histamine and various enzymes into the surrounding tissues in an attempt to inactivate the allergen. Histamine causes local inflammation, flushing, and other allergy symptoms.

The flavonol quercetin is a potent mast cell stabilizer. Mast cell stabilization and the prevention of histamine release are the underlying goals of allergy drugs. Quercetin is a potent natural

antihistamine, but sadly, one that is missing in most diets today. The best quercetin-rich foods include capers, onions, and fruits with dark red or blue hues. The antihistamine effects of quercetin are improved in the presence of vitamin C. (Stinging nettles and bromelain are two other natural antihistamines.)

Phytonutrients also contain anti-inflammatory plant sterols (not steroids) that modulate the immune response to allergens and polysaccharides that, at the same time, support the immune system.

Furthermore, a magnesium deficiency causes mast cells to increase histamine secretion. It's well known that we have widespread magnesium deficiencies in this country, and in most other countries as well. Not only are we eating fewer foods rich in magnesium such as dark leafy greens, the nutritional content of the vegetables continues to decline.

A study by the University of Texas compared the nutritional content of 43 types of produce on shelves now to vegetables from 1950. The researchers found that today's crops have 5–40 percent lower levels of certain nutrients. (*J Am Coll Nutr* 2004 Dec;23(6):669–82)

The focus on crop yield and shelf stability has dramatically reduced the nutrient density of most plant foods. One answer is to buy from small, local, organic farmers. The other obvious answer is to eat more vegetables, which unfortunately isn't happening. The CDC reports that only 26 percent of adults in this country eat vegetables three or more times a day. A mere 23 percent of the meals in this country contain a vegetable. In 1994, 22 percent of meals at home included

a salad. In 2010, that number declined to 17 percent.

Magnesium isn't the only component that has decreased in our plant foods. Levels of protein and vitamins C and E have plummeted, as have vitamins B12 and D, calcium, iron, potassium, sodium, and copper. One study showed that copper levels have declined over 80 percent. And calcium, along with magnesium, which is necessary for short- and long-term memory, dropped by 19 percent. (*Br Food J* 1997;99(6):207–11) (*Pharmacogn Mag* 2014 Apr;10(Suppl 2):S207–13)

Magnesium is critical for the formation and creation of neurological connections in the brain, yet it is estimated that half the industrialized world is deficient in the mineral. It shouldn't come as any surprise to learn that magnesium deficiency is one of the hallmarks of attention deficit/hyperactivity disorder (ADHD). And memory loss and many other neurological problems are now so common.

In one very interesting research paper, Dr. Fernando Gamez-Pinilla explains how certain nutritional deficiencies don't just affect the individual, but they can be so profound that the mental health of entire countries may be linked to them. This may explain part of what we're experiencing in the world today. (*Nat Rev Neurosci* 2008 Jul;9(7):568–78)

Magnesium deficiencies have been found to be the common denominator among all heart disease risk factors. Dr. Andrea Rosanoff, director of research and science information outreach at the Center for Magnesium Education and Research, says, "The common risk factors for cardiovascular disease

such as high LDL cholesterol, low HDL cholesterol, high blood pressure, and metabolic syndrome are all associated with low nutritional magnesium status or low magnesium dietary intake.” Studies repeatedly have shown that fixing or preventing magnesium deficiencies can and will correct or prevent cardiovascular disease events, including death.

Devastating Side Effects

As bad as all this is, a lot of people make the situation even worse. As soon as spring rolls around, those already deficient in phytonutrients start to experience allergies. It is estimated that 50 percent of the population now suffers from allergies and approximately 35–50 percent of them use over-the-counter antihistamines. Others opt for the increasingly popular corticosteroid nasal sprays.

Although the side effects of corticosteroids are dose dependent, they are the same whether they are taken orally, injected, applied topically, or inhaled. The side effects range from adrenal fatigue and cataracts to osteoporosis, cardiovascular disease, diabetes, and cancer.

One of the more common problems is a disruption in metabolism and the fact that steroids cause an increase in appetite. One of the quickest ways to sabotage a weight loss plan is to add corticosteroids to the mix, and that’s exactly what millions of adults and children do each and every spring.

Antihistamines aren’t much better. Antihistamine use is associated with higher weight, larger waist circumference, insulin resistance, and elevated insulin levels. It doesn’t matter if they are prescription or over the counter. Research

has linked them to the increased prevalence of obesity in this country. (*Obesity (Silver Spring) 2010 Dec;18(12):2398–400*)

There are other classes of drugs that sabotage metabolism (and can lead to excessive weight gain). This side effect isn’t often mentioned when the drugs are prescribed. Later, patients have no clue why they’ve put on weight. Here are some examples.

- **Antidepressants.** Tricyclic antidepressants (Elavil, Tofranil) can drop the metabolic rate by as much as 10 percent. This can translate to roughly one pound of weight gain every 10 days or so. Paxil, Zoloft, Remeron, Prozac, Celexa, and Lexapro can add as much as five pounds per year. Most people experience somewhat less weight gain on Pamelor. Wellbutrin, Cymbalta, Effexor, Pristiq, and Viibryd don’t appear to affect weight. Unfortunately, the research seems to be all over the map. However, it is clear that overall, individuals who take antidepressants are 14 percent more likely to be overweight and 71 percent more likely to be obese than those who don’t. (*PLoS One 2014 Jun 16;9(6):e99780.*)
- **ADHD drugs** (Adderall, Ritalin) are actually stimulants. It appears that those who take these drugs experience a type of “rebound” effect as they get older and have a jump in weight. One study tracked more than 150,000 children aged 3–18 and compared the body mass index (BMI) of those treated with ADHD medications to those who weren’t. Those who took the drugs before 10 years of age started to see rebound weight increases in their teens, even if they had stopped taking the drugs. Those taking the drugs after age 10 experienced their rebound weight gains in early adulthood or later in life. (*Pediatrics 2014 Apr;133(4):668–76*)

- **Antipsychotic drugs** can cause weight gain by stimulating the appetite and slowing the metabolic rate. Lithium has a long reputation for promoting weight gain of at least 20–30 pounds or even more in a single year.
- **Anti-seizure medications** have mixed effects. Taking Depakote can result in a gain of up to 60 pounds in a year. Taking newer drugs such as Topamax can actually result in weight loss.
- **Beta-blockers** have been shown to increase weight, slow your heart rate, and raise diabetes risk.
- **Steroids** (both over the counter and prescription) are notorious for causing weight gain. It doesn’t matter if they are prescribed or over the counter; they have the same effect.
- **Insulin and insulin promoters** (such as Actos) are instrumental in storing excess blood sugar as fat. Glucophage has side effects, but weight gain isn’t one of them.
- **Anti-migraine drugs** can also cause weight gain.

We have an obesity epidemic in this country. It started in adults, but now the last couple of generations of children have developed the problem. Obesity is the stepping stone to diabetes and cardiovascular disease, which have transformed from ailments of the elderly to diseases that affect all ages.

Everyone you talk to complains about a lack of energy. Chronic fatigue seems to be the norm for most of the population. (A few years ago, mainstream medicine felt “chronic fatigue” was an excuse for laziness or a figment of the imagination. It had no physical basis. Now, they’re embracing it and are even trying to elevate its status with a new name: “systemic exertion intolerance disease.” By labeling it as a disease, insurance will pay for treatment and pharmaceutical companies

have a new market and potential gold mine.)

We hear about these health concerns and how they need to be treated. We don't, however, hear about curing them or, even more importantly, preventing them in the first place. No one addresses the indisputable evidence that we are disrupting our metabolism with the lack of phytonutrients in our diet and our ever-increasing dependence on medication.

The Three Things You Should Do Now

First, get back into the habit of having a mixed salad and a variety

of vegetables with your meals. (French fries don't count, and neither does a partial leaf of iceberg lettuce on your hamburger.)

Second, make sure you take a quality multivitamin/mineral supplement every day—one that includes a good mix of phytonutrients, like those I mentioned earlier. Even a small amount of phytonutrients can have a profound effect on how well your body is able to function. For prevention and maintenance, your body doesn't necessarily require clinical dosages. Vegetables and fruits typically don't have large amounts of phytonutrients. Rather, they contain a large variety of

phytonutrients that work synergistically. Variety isn't just the spice of life, it's also the spice of health.

Finally, when it comes to drugs, minimize their use as much as possible. If you do take a drug, read the warning labels and watch for any side effects. Just because half the population takes a certain drug doesn't mean it's safe. It just means half the population has a health problem. And be especially careful about giving drugs to children. Research has now shown many drugs taken during childhood, even if for only short periods of time, can negatively influence health and increase the risk of disease decades down the road. ■

Show Your Liver Some Love

I have long warned about the dangers that pesticides and herbicides pose to the human nervous system.

Spray a cockroach with pesticide and it's like watching a high-speed video of the progression of Parkinson's disease. Pesticides are designed to destroy an insect's nervous system, which utilize the same neurotransmitters as humans. There is no question that pesticides pose a serious danger to humans.

Herbicides work somewhat differently using a variety of methods, such as disrupting cell membranes, inhibiting the formation of enzymes, and blocking protein synthesis, chlorophyll production, electron transfer, or normal cell division. Since the life systems of plants are so much different than those of humans, it is often assumed that they have little, if any, effect on humans.

The truth is we don't really know exactly how all these compounds

affect the human body. But, in all my research, I've never seen even a single study or case where exposure to them improved human health in any way.

The Truth About Glyphosate

Roundup, made by Monsanto, is the world's most widely used herbicide. Its active ingredient is glyphosate, which was patented in the 1970s. Monsanto, of course, claims it is not a human health hazard. Their senior toxicologist has stated, "...the mere presence of a chemical itself is not a human health hazard. It is the amount, or dose, that matters." In theory, this is true. Even water can be toxic if you consume too much.

But what is a "harmless dose" of glyphosate for humans? And does a buildup or repeated exposure present a health risk? What exactly does it affect in the human body?

The public is being told very little, and it's not a stretch of the imagination to suspect that glyphosate exposure is bad for your health.

Monsanto now directs consumers who have questions like this to contact the US Department of Agriculture. Monsanto is a huge, worldwide company with enormous clout and financial power. Their influence has made scientists and researchers reluctant to speak out on the potential dangers of glyphosate. This fear has started to subside somewhat after the World Health Organization announced in March that glyphosate is probably carcinogenic to humans. Monsanto is outraged, but at least scientists are becoming more vocal about the issue.

Glyphosate is now so pervasive in the environment that avoiding exposure is next to impossible.

Laboratories across the country are getting more and more requests to test for glyphosate residue. (Routinely, to avoid retribution, the doctors, researchers, and firms requesting the tests are asking that their identities remain unpublished.)

Abraxis, a diagnostic testing firm in Pennsylvania, found glyphosate in 41 of 69 honey samples and 10 out of 28 soy sauces. Another company, Microbe Inotech Laboratories, detected glyphosate in three of 18 breast milk samples and in six of 40 infant formula samples. Samples of corn and pancake syrup, soy milk, and tofu did not have any glyphosate, at least at the thresholds tested. (*J Environ Anal Toxicol* 5:249. doi:10.4172/2161-0525.1000249)

Protect Yourself

The takeaway is simple. It's practically impossible to avoid all exposure to pesticides/herbicides. They are so pervasive in our environment. Eventually they find their way into our food and water supplies. I'm definitely not saying the situation is hopeless or that we should stop trying to minimize their use or clean up the environment. Those are the ultimate solutions. But since we can't control when or if that will happen, we need to take the necessary steps to protect ourselves.

The first step is to ensure you have an uncontaminated water supply. For some, that will mean filtration or a home water distiller. Besides the air you breathe, water is the only substance that you put in your body every single day of your life.

Eating homegrown or organic fruits and vegetables is the next reasonable step. The more information you have about where your food is coming from and how it was grown, the better.

The Dire Need to Detox

Your liver is your body's prime detoxifier. Under ideal circumstances, the liver could handle the job of eliminating toxins if the diet contained vegetables and fruits rich in fiber and vitamins B6, B12, and folic acid. However, the spectacular rise in pollutants we're seeing today is overloading the liver. When the liver can't adequately remove toxins, it creates havoc not only in the liver itself but throughout the whole body.

Toxins are irritants that induce a reaction from your immune system—inflammation. This happens with arthritis, asthma, eczema, and autoimmune diseases. What we can't see are the chronic effects of hidden inflammation. It can be the most dangerous form. The immune cells unsuccessfully try to eliminate a toxin through the continued production of free radicals. In the process, there's a destruction of surrounding tissue. In an effort to repair the damaged areas, the surrounding healthy cells secrete growth factors that stimulate scar tissue. It becomes a self-perpetuating cycle. And the symptoms of this process tend to define the disease depending on where the damage occurs.

For example, when the damage happens in the arteries, we experience plaques and cardiovascular disease. In the brain, scar tissue or plaques define Alzheimer's disease. In small capillaries, the scar tissue blocks nutrient flow to nerves, resulting in necrosis or death of nerves. The toxin-induced inflammation can lead to cell mutations and cancer in whatever organ is

involved. The overall process leads to debilitation and early demise.

Complete detoxification of the liver and body is a complex process that would take volumes to properly explain. However, there are several things that are easy to implement and should be a part of everyone's regime. For instance, specific foods/supplements can help degrade or detoxify chemical compounds.

Foods and Nutrients for Liver Health

Regularly consuming fermented foods and using probiotics are two of the best ways to protect yourself against carcinogens. This is one of the many reasons I feel probiotics are the most important supplement you can take.

One of the compounds produced by the intestinal microflora is the sulfur-containing compound glutathione—the mother of all antioxidants and one of the most powerful neutralizers and detoxifiers known to man.

Glutathione is essential in several of the metabolic pathways that the liver utilizes to neutralize toxins. Glutathione depletion is always a concern when toxins place excess stress on the liver. There are specific herbs that can be very helpful in protecting the liver and improving glutathione levels.

- Milk thistle (*Silybum marianum*) has been used for more than 2,000 years to treat liver and gallbladder disorders. Another variety of thistle that has been cultivated as food is the artichoke. The extract from the seeds of milk thistle and artichokes not only protects the liver, but also stimulates the regeneration of liver cells. Along with alpha lipoic acid, vitamin C, and N-acetylcysteine, they help regenerate glutathione.

- Turmeric helps modulate and improve liver detoxification.
- Gut bacteria produce the short-chain fatty acid butyrate, which also protects against toxic carcinogens.

The idea that health begins in the colon is something I've been stressing since day one. Toxins that accumulate due to an imbalance of microflora in the gut, such as an overgrowth of *Candida*, need to be addressed with probiotics. Toxins from the bowel recirculate to the liver. This can create a chronic overburden and impair the liver's ability to process environmental toxins.

Doctors familiar with the importance of liver detoxification understand that certain conditions can be a sign of liver congestion and overload. The first that comes to mind is jaundice in newborns. At that young age, the liver is too immature to handle the breakdown of red blood cell components, which naturally occurs following birth. Cradle cap is another sign of liver congestion or immaturity in children.

Conditions in children or adults that can be strong indications that the liver is congested include the inability to digest fat, low blood sugar, hormonal imbalances, skin conditions, constipation, food allergies, heart disease, toxic bowel, recurrent tonsillitis or sinusitis, hepatitis, gallstones, and glandular fever.

Liver congestion is the primary reason for the use of coffee enemas, which I've detailed in past issues. They quickly open up blood vessels and bile ducts and the conjugation of toxins. It is reported that the palmitates in coffee increase the activity of glutathione enzyme system (glutathione S-transferase) by as much as sevenfold. Drinking coffee doesn't provide nearly the same amount of activity, but these

same palmitates are thought to be responsible for the reduced incidence of colorectal cancer in coffee drinkers. (*Environ Mol Mutagen* 2004;44(4):265-76) (*Cancer Res* 1982 Apr;42(4):1193-8)

Sulfur is one of the components of glutathione that makes it such a strong detoxifier. Without sulfur, your body can't efficiently detoxify drugs, environmental toxins, or heavy metals. The body can't produce it so you have to obtain it from your diet. Great food sources include egg yolk, garlic, onions, and the miraculous cruciferous vegetables.

Every few years, we hear about groundbreaking research where a component of a cruciferous vegetable has been isolated and found to be effective in the prevention or treatment of cancer. There's no need to add extra supplements to your regimen when you can just eat more of these amazing vegetables. And you can increase their benefits a hundred-fold by fermenting them. The long list of cruciferous vegetables includes arugula, bok choy, broccoli, Brussels sprouts, cabbage, cauliflower, Chinese broccoli, collard greens, daikon, garden cress, horseradish, kale, kohlrabi, komatsuna, land cress, mizuna, radishes,

rutabaga, tatsoi, turnip roots and greens, wasabi, and watercress.

Fat- vs. Water-Soluble

Toxins are either water soluble or fat soluble. If a compound can dissolve in water, it can usually be metabolized (detoxified) pretty quickly by various enzymes, or it can be filtered out of the blood by the kidneys. As such, water-soluble compounds don't tend to accumulate in the body. There are a few exceptions to this. Lead and some other toxic minerals can form water-soluble compounds that can accumulate in the body.

Years ago, I learned from Dr. Yoshiaki Omura about a way to naturally help remove lead and aluminum from the body using cilantro. He found that the presence of these heavy metals was linked to recurring infections related to an eye condition called trachoma (granular conjunctivitis), which is caused by the organism *Chlamydia trachomatis*. With their increasing incidence, this technique may be even more useful in recurring cases of herpes simplex types I and II and cytomegalovirus infections. (*Acupunct Electrother Res* 1995 Aug-Dec;20(3-4):195-229) (*Acupunct Electrother Res* 1996 Apr-Jun;21(2):133-60)

Since there isn't a "fresh" cilantro supplement, I use cilantro pesto (recipe in box below). It's a very

Cilantro Pesto

1 clove garlic
1/2 cup almonds, cashews, or other nuts

1 cup packed fresh cilantro leaves
2 tablespoons lemon juice
6 tablespoons olive oil

Put the cilantro and olive oil in blender and process until the cilantro is chopped. Add the rest of the ingredients and process to a lumpy paste. (You may need to add a touch of hot water and scrape the sides of the blender.) You can change the consistency by altering the amount of olive oil and lemon juice, but keep the 3:1 ratio of oil to juice. It freezes well, so you can make several batches at once.

inexpensive (and tasty) method to help stop recurring viral infections.

Most pesticides, fungicides, and herbicides tend to be fat soluble, and removing them becomes more difficult. Once these toxins enter our body, those that aren't destroyed or detoxified by our intestinal flora or liver are shuttled into fat cells for storage. (Our body naturally looks at any excess fatty substances as long-term energy that can be stored for use later.)

Fat-soluble toxins are stored in the body for very long periods of time and can continue to accumulate and reach very high concentrations. Bioaccumulated toxins are responsible for the higher rates of cancer and infertility we're now seeing in many fish and wildlife populations. I have no doubt they are also contributing to the same problems in humans. As a pesticide is passed up the food chain, it becomes increasingly concentrated.

Since we happen to be at the top of the food chain, we don't pass these toxins on to any predators. However, we do pass them on to the next generation via breast milk.

Just because a pesticide is fat-soluble doesn't mean a food has to have fat for a pesticide to be present. These pesticides are definitely present in vegetables and fruits that have been treated, but their concentration tends to be less than that in meat, fish, and dairy products because of their inherent fat content.

One commonly overlooked subject when it comes to fat-soluble toxin removal is bile. (Your liver uses bile to convert fat-soluble substances into water-soluble substances so they can be excreted either by the kidneys or through the intestinal tract.)

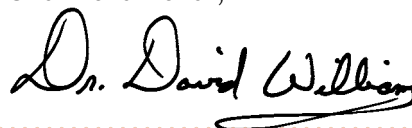
The elimination of fat-soluble toxins is the responsibility of the liver, via bile. Bile has detergent characteristics for breaking down all types of fats. It is essential in the process of digesting fats from our food.

In much the same way, bile acts as an excretory fluid for fat-soluble pesticides. Because of the concern surrounding our heavily polluted waterways, there seems to be more detailed research on bile and toxins in fish than in humans. In fish, it has been demonstrated that bile salts help emulsify fat-soluble pesticides so they can be removed through the intestines. The process is accelerated when bile salts are added to the fish diet and when the contaminated fish are moved to clean water. In relation to humans, it's probably the same. Adding bile salts to the diet and consuming more clean, pure water would probably speed up the elimination process as well.

If you've had your gallbladder removed, you need to take bile salts with every meal for the rest of your life. It's that simple. If you have liver congestion or difficulty digesting fats, not only do you risk becoming deficient in essential fatty acids, nutritional fats, and fat-soluble vitamins, your body will not be able to break down and mobilize fat-soluble toxins such as pesticides.

If you're fortunate enough not to have any of the above issues, I still highly recommend using a multi-vitamin/mineral supplement that contains bile salts. Bile is one of the key links in the detoxification chain. When you're living in a sea of environmental toxins, you don't want it to be the weak or missing link.

Until next month,



This Month Online



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