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The North Star (Polaris) marks the direction north and has long been used both on land and sea to guide travelers because it retains its place in the sky while the entire night sky revolves around it. Though not the brightest star in the nighttime sky, it is a dependable guide which can be found even under cloudy skies or a full moon.[1]

Winter 2014: A New Year's Guiding Star

Working on boards and committees with my good friend and writer Amira Thoron, I often think of Amira's expression 'North Star' to mark the themes we define to guide and focus our efforts. Today, after the holiday season and with the ever-present confusion created by the array of food creations in our modern supermarkets, let's focus on some concepts for healthy eating, some North Star guideposts for the New Year.

In the last few months, I have started to think more and more about how our current dietary and lifestyle habits have grown far from what they were just a few decades ago; how eating outside our evolutionary norm is affecting our health and well-being; and, how we might define some simple, common-sense guidelines that can fit every situation when we face choices about what to eat.

For some North Star questions to ask ourselves, I would propose:

Could this food be grown on a traditional farm?
Could bacteria in the environment break it down and decompose it?
Could the food be (or have been) prepared in a typical family kitchen?

To eat foods that stand up to these North Star tests is the best strategy to assure that we are eating within our evolutionary norm and walking within our biological footprint.

Modern foods in an evolutionary context. Experts mark the start of homo sapiens at perhaps 40,000 B.C., so for almost 42,000 years our ancestors lived by the seasons; ate foods that were local and seasonal; and, consumed whole foods, first those caught or foraged, later adding more varieties that were cultivated on the farm and prepared in a traditional kitchen.

It has only been in the last century or so, with the development of the light bulb and electricity, the exodus to cities, women joining the labor force in great numbers, and the creation of convenient,

[1] www.earthsky.org

commercially-prepared foods that we have strayed from the traditional lifestyle and dietary patterns that for centuries set our biorhythms, metabolism, and digestion/assimilation.

Today, the food industry and we as consumers rely on refined food ingredients because they are cheap and have a long shelf life. But these, which include sugar, refined flour, and refined vegetable oils, are inflammatory and foster chronic disease. Have you ever stopped to think what we are doing to our bodies when we consume foods with a long shelf life—foods that do not/cannot go rancid? If bacteria in the local environment cannot break down these foods, how can we expect our digestive system, which is designed to break up and assimilate whole foods from nature, be expected to do so?

I have to wonder if the current prevalence of allergies, wheat intolerance, hyperactivity, and psychological and emotional issues is not related to our modern diet that so often centers on these long-shelf-life processed foods. It is a known fact that sugar, high fructose corn syrup, and refined flour feed bad bacteria in the gut and fuel inflammation, while refined vegetables oils upset metabolism and also foster inflammation and chronic disease.

With a host of gut-related ills plaguing our society today, many of which we treat with antibiotics, we might take away a cautionary lesson from the modern, commercial cattle industry. Feedlot cattle tell us a lot about what happens when we eat outside our evolutionary footprint: Cattle that are moved from traditional pasture grazing into crowded feed lots where they are fed GMO corn require a steady stream of antibiotics to keep them standing, and hardly long enough to fatten for slaughter.

The "Big Three" Ingredients in Modern Foods that Dominate our Modern Diet and Push Us Beyond Our Evolutionary Norm

With the thousands of refined, denatured and chemical food ingredients used by the food industry to make foods exciting, attractive, and "timeless," our North Star list of verboten foods would be long, indeed. So, let's focus just on the Big Three—sugar; refined flour; and refined vegetable oils. These three ingredient dominate the convenience, processed foods sold today.

- Sugar *does* indeed have a long history, but it was never widely used nor a major component of traditional diets. A product of tropical environments, it was geographically out-of reach for most and also too expensive to produce. To extract pure crystals of sugar, the chemical $C_6H_{12}O_{6,}$, from the cane's tough network of fiber, water, and minerals, required massive manpower and capital equipment.

  From the way nature packaged sugar inside its tough husk of cane, we can guess this was a natural, inherent safeguard for overindulgence: More than a foot of sugar cane is required to produce one small tablespoon of sugar. So, in its natural form, we would be hard pressed to consume a tablespoon of sugar in one sitting.

  Yet, in its denatured, concentrated crystal form, the food industry makes it easy for us to rather thoughtlessly consume the equivalent of a foot of sugar cane over breakfast, or our morning

coffee break, or just about any time we grab a snack. Take the time to read the early histories of sugar that describe the process, slave labor, necessary equipment, and the lives lost and you will come away with a real sense of how unnatural a product sugar, in its pure crystal chemical form which is now cheap and widely available, really is.

While sugar has been around for centuries, albeit in limited amounts, we can assume from the modern ills linked to sugar that our bodies have not yet adapted to sugar, particularly in the vast amounts we consume today. Sugar elevates blood sugar to foster diabetes and obesity; leaches valuable minerals from our bodies, especially from our mineral storage "banks" located in our bones and teeth (think osteoporosis and teeth problems); feeds bad gut bacteria; and supplies empty calories that "crowd out" nutrient-dense whole foods. Sugar is also linked to depression and hyperactivity.

Alternatives: maple sugar, maple crystals, coconut sugar, date sugar, brown rice syrup, etc. See June 2009 Newsletter, *Natural Sweeteners and Kicking the Sugar Habit.*

- Refined flour as we know it today also lies outside our evolutionary footprint. The reason is not only because currently most flour that we consume is *refined*, but also because the *kind* of wheat that we eat is a new-fangled hybrid high-yield, high-starch, high-gluten variety developed only within the last 50 years—something called "dwarf wheat." The high amylopectin starch content of dwarf wheat makes it super-fattening and promotes insulin resistance and diabetes. In addition, the genetic engineering of dwarf wheat creates an extra chromosome set with more and different gluten proteins than exist in traditional wheat varieties like Einkorn and Emmer. These new, untested wheat proteins are linked to wheat allergies and celiac disease.

  The prevalence of obesity and diabetes as well as gluten intolerance suggests our bodies are having a hard time adapting to dwarf wheat, particularly in its refined state—this is not something that we can blame on the amount of wheat that we eat today: In fact, the typical American now consumes one-third *less* wheat than a century ago, a time when wheat allergies and celiac disease were hardly known.

  Traditional cultures were sustained by whole-grain flours. These were largely derived from wheat of heirloom varieties. Wheat was favored because it grows in most climates and is the most nutritious of the grains due to its superior ability to extract nutrients from the soil. Whole-grain wheat flour used by traditional cultures provided vitamin B and E, as well as essential fatty acids, proteins, minerals, and fiber to offer nutrition; and, the bran (fiber) and germ (fats) that were left intact rather than being refined away helped moderate the blood sugar effect we currently associate with refined flour products.

  Today, modern refining techniques separate the starch from the bran and germ to create white flour, a long-shelf-life product that does not go rancid. White flour is a pure carbohydrate that

spikes blood sugar at an even faster rate than sugar does. Like sugar, refined flour is inflammatory and taps into the body's store of minerals when it is metabolized.

[As an aside, Island Grown Schools of Martha's Vineyard, with the guidance and support of Kay Rentschler and Glenn Roberts of Anson Mills, as well as scientist and seed-saver/activist Gary Paul Nabhan, is now planting four heirloom New England grains in its school gardens. We are grateful for the farmers, gardeners, seed-savers, and others who are part of the ongoing movement to support crop diversity and heirloom foods. As Gary Nabhan notes, in 1984, there were only 99 vegetable, grain, legume, tuber, and herb varieties listed in North American seed catalogs; by 2004, there were 8494. Seed libraries and seed banks are growing and the internet opens up all kinds of opportunities for future growth and development of traditional, heirloom grains and foods. Stay tuned to this movement and join it if you can!]

Alternatives: Whole wheat pastry flour, heirloom whole wheat flour (from suppliers such as Anson Mills), barley flour, oat flour, and whole-grain non-gluten flour.

- Refined vegetable oils echo much the same story as sugar and refined flour. Commercial refining that involves expensive capital equipment is the food industry's way to create cheap, denatured oils with a long shelf life. Refining vegetable oils requires not only elaborate equipment, but also chemicals, high pressure and extreme temperatures.

  Refining oils sings the familiar chorus heard above regarding refining sugar and refining wheat: In refining, fragile oils are first separated from the seed using high-heat mechanical pressing and solvents. In the process, oils are stripped of vital nutrients, such as lecithin, chlorophyll, vitamin E, beta carotene, calcium, magnesium, iron, copper, and phosphorus. Then oils are refined, bleached, and degummed, where at each stage they are subjected to chemicals and extreme temperatures. But, because high temperatures make oils go rancid and take on odors, they are then bleached with chemicals such as benzene and hexane and deodorized at high temperatures approaching 500 degrees. In the process, some omegas become transfats.

  By the end of the refining process, there is nothing left to taste foul or go rancid, so you never know if refined oils have spoiled. But, stripped of their natural antioxidant protections, they are vulnerable to free-radical damage. Missing other nutrients, these inflammatory oils are linked to cancer because their denatured state makes it hard for the body to break them down.

  Vegetable oils fuel inflammation, upset metabolism, contribute to weight gain, and are linked to cancer and other chronic disease. As products of the postwar food industry, refined vegetable oils are untested food ingredients that lie outside the footprint of evolutionary experience. Degumming, stripping, bleaching, deodorizing, and pressure-heating vegetable oils were never part of family farming/food preparation traditions.

  Alternatives: Butter, ghee, coconut oil, extra virgin olive oil, and selected unrefined oils.

Throughout time, peoples were fed by the earth (not by factories) and were guided by the stars. In the New Year, as we navigate the grocery isle and restaurant menus of our modern world, we can take comfort that we are eating within our evolutionary footprint and honoring our biological limits when we choose whole, nutrient-dense foods, particularly those grown close to home. Doesn't it feel like overreaching to do otherwise?

Reading Resources:

April 2009: *Sugar, A Depleting Chemical;* and *Is Sugar Toxic.*
June 2009: Natural Sweeteners and Kicking the Sugar Habit.
September/October 2010: *Defending Wheat; Restoring Wheat.*
November/December 2013: *Smoke Points and Canola Oil;* Other Pathways4Health article on oils.
Peter Macinnis, *Bittersweet: The Story of Sugar.*
Sidney W. Mintz, *Sweetness and Power: The Place of Sugar in Modern History.*

Recipe: Mulled Cider for Winter Cheer

This is a very simple recipe that will fill the house with a festive aroma, which itself can convey a sense of warmth, lift spirits, and viscerally satisfy sweet cravings. While any fruit juice consumed alone will elevate blood sugar, a small serving may fulfill some of the normal cold-weather cravings for sweets, saving calories in the long run. Consuming some nuts, cheese, or other foods that contain fats and proteins can moderate the blood sugar effect associated with drinking this or other fruit drinks in isolation. And, cinnamon added to any recipe not only provides the illusion of sweetness, but also helps curb the blood sugar effect of sugars and other carbohydrates.

1 orange
2 cinnamon sticks
4 cups (1 quart) apple cider or organic apple juice

Use a vegetable peeler to remove long strips of zest (the orange skin but not the white part underneath) from half of the orange.

Put the cinnamon sticks, orange zest, and cider in a pot and put the pot on the stove. Turn the heat to medium-high and heat until it is steamy—about 7 minutes. Turn the heat down to low and simmer for 30 minutes.

Source: Adam Reid and *Edible Vineyard*.