

Wheat Belly.

William Davis—2011.

INTRODTTCTTON

- Documented peculiar effects of wheat on humans include appetite stimulation, exposure to brain-active exorphins (the counterpart of internally derived endorphins), exaggerated blood sugar surges that trigger cycles of satiety alternating with heightened appetite, the process oiglycation that underlies disease and aging, inflammatory and pH effects that erode cartilage and damage bone, and activation of disordered immune responses. A complex range of diseases results from consumption of wheat, from celiac disease—the devastating intestinal disease that develops from exposure to wheat gluten—to an assortment of neurological disorders, diabetes, heart disease, arthritis, curious rashes, and the paralyzing delusions of schizophrenia.
- I have personally observed protuberant, flop-over-the belt belly fat vanish when my patients eliminated wheat from their diets, with typical weight loss totaling 20, 30, or 50 pounds just within the first few months. Rapid and effortless weight loss is usually followed by health benefits that continue to amaze me even today after having witnessed this phenomenon thousands of times.
- If you find yourself carrying around a protuberant, uncomfortable wheat belly; unsuccessfully trying to squeeze into last year's jeans; reassuring your doctor that, no, you haven't been eating y badly, but you're still overweight and pre-diabetic with high blood pressure and cholesterol; or desperately trying to conceal a pair of humiliating man breasts, consider saying goodbye to wheat.

PART ONE... Week: the unhealthy whole-grain.

Chapter 1: what belly?

- While some people store fat in there but ox and size, most people collect ungainly fat around the middle. The central or “visceral” fat is unique: Unlike fat in other body areas, it provokes inflammatory phenomena, distorts insulin responses, and issues abnormal metabolic signals to the rest of the body. In the unwitting wheat bellied male, visceral fat also produces estrogen that creates man breasts.
- For that reason, I often use wheat to signify all gluten containing grains.
- Why did I have those extra pounds under my belt? After all, I jogged three to five miles every day, ate a sensible, balanced diet that didn't include excessive quantities of meats or fats, avoided junk foods and snacks, and instead concentrated on getting plenty of healthy whole grains. What was going on here?
- Sure, I had my suspicions. I couldn't help but notice that on the days when I'd eat toast, waffles, or bagels for breakfast, I'd stumble through several hours of sleepiness and lethargy. But eat a three egg omelet with cheese, feel fine. Some basic laboratory work, though, really stopped me in my tracks. Triglycerides: 350 mg/dl; HDL (“good”) cholesterol: 27 mg/dl. And I was diabetic, with a fasting blood sugar of 161 mg/dl. Jogging nearly every day but I was overweight and diabetic?

- An interesting fact: Whole wheat bread (glycemic index 72) increases blood sugar as much as or more than table sugar, or sucrose (glycemic index 59). (Glucose increases blood sugar to 100,
- I provided a simple handout detailing how to replace wheat-based foods with other low-glycemic whole foods to create a healthy diet.
- “The bottom line: Elimination of this food, part of human culture for more centuries than Larry King was on the air, will make you sleeker, smarter, faster, and happier. Weight loss, in particular, can proceed at a pace you didn’t think possible. And you can selectively lose the most visible, insulin-opposing, diabetes creating, inflammation-producing, embarrassment-causing fat: belly fat. It is a process accomplished with virtually no hunger or deprivation, with a wide spectrum of health benefits.

Chapter 2: not your grandma’s muffins, the creation of modern wheat.

- I once measured the length of the bread aisle at my local supermarket: sixty-eight feet.
- And then there’s the snack aisle with forty-some brands of crackers and twenty-seven brands of pretzels.
- The peculiar oversight in the flurry of breeding activity, such as that conducted at IMWIC, was that, despite dramatic changes in the genetic makeup of wheat and other crops, no animal or human safety testing was conducted on the new genetic strains that were created.
- **Blood sugar at the start: 84** mg/dl. Blood sugar after consuming einkorn bread: 110 mg/dl. This was more or less the expected response to eating some carbohydrate. Afterwards, though, I felt no perceptible effects—no sleepiness, no nausea, nothing hurt. In short, I felt fine. Whew! The next day, I repeated the procedure, substituting four ounces of conventional organic whole wheat bread. Blood sugar at the start: 84 mg/dl. Blood sugar after consuming conventional bread: 167 mg/dl. Moreover, I soon became nauseated, nearly losing my lunch. The queasy effect persisted for thirty-six hours, accompanied by stomach cramps that started almost immediately and lasted for many hours. Sleep that night was fitful, though filled with vivid dreams. I couldn’t think straight, nor could I understand the research papers I was trying to read the next morning, having to read and reread paragraphs four or five times; I finally gave up. Only a full day and a half later did I start feeling normal again.
- Thus, the alterations of wheat that could potentially result in undesirable effects on humans are not due to gene insertion or deletion, but are due to the hybridization experiments that predate genetic modification.

Chapter 3: wheat deconstructed.

- This explains why, gram for gram, wheat increases blood sugar to a greater degree than, say, kidney beans or potato chips.
- Aside from some extra fiber, eating two slices of whole wheat bread is really little different, and often worse, the drinking a can of sugar sweetened soda or eating sugary candy bar.
- Snickers bar is 41—far better than whole grain bread.
- Therefore, wheat products elevate blood sugar levels more than virtually any other carbohydrate, from beans to candy bars. This has important implications for body weight, since glucose is unavoidably accompanied by insulin, the hormone that allows entry of glucose into the cells of the body, converting the glucose to fat. The higher the blood glucose after consumption of food,

the greater the insulin level, the more fat deposited. This is why, say, eating a three egg omelets that triggers no increasing glucose does not add to body fat, while two slices of whole wheat bread increases blood glucose to high levels, triggering insulin and growth of fat. Particularly abdominal or deep visceral fat.

- Moreover, the bigger the wheat belly in males, the more estrogen is produced by fat tissue, and the larger the breasts. The bigger your wheat belly, the more inflammatory responses that are triggered: heart disease and cancer.
- Wheat is the principal source of gluten in the diet, both because wheat products have come to dominate and because most Americans do not make a habit of consuming plentiful quantities of barley, rye, bulgur, kamut, or triticale, the other sources of gluten.

Part two: wheat and its head to toe destruction of health.

Chapter 4: hey, man, want to buy some exorphins? The addictive properties of wheat.

- Lo and behold, four weeks sans wheat and there were distinct and measurable improvements in the hallmarks of the disease: a reduced number of auditory hallucinations, fewer delusions, less detachment from reality. Psychiatrists then added the wheat products back into their patients' diets and the hallucinations, delusions, and social detachment rushed right back. Remove wheat again, patients and symptoms got better; add it back, they got worse.
- While it remains a topic of debate, a substantial proportion of children and adults with attention deficit/hyperactivity disorder (ADHD) may also respond to elimination of wheat. However, responses are often muddled due to sensitivities to other components of diet, such as sugars, artificial sweeteners, additives, and dairy.
- In lab animals, administration of naloxone blocks the binding of wheat exorphins to the morphine receptor of brain cells. Yes, opiate-blocking naloxone prevents the binding of wheat-derived exorphins to the brain. The very same drug that turns off the J heroin in a drug-abusing addict also blocks the effects of wheat exorphins.
- What happens if normal (i.e., non-schizophrenic) humans are given opiate-blocking drugs? In a study conducted at the Psychiatric Institute of the University of South Carolina, wheat-consuming participants given naloxone consumed 33 percent fewer calories at lunch and 23 percent fewer calories at dinner (a total of approximately 400 calories less over the two meals) than participants given a placebo. At the University of Michigan, binge eaters were confined to a room filled with food for one hour. (There's an idea for a new TV show: The Biggest Gainer) Participants consumed 28% less wheat crackers, bread sticks, and pretzels with administration of naloxone.
- In other words, block the euphoric reward of wheat and calorie intake goes down, since wheat no longer generates the favorable feelings that encourage repetitive consumption. (Predictably, this strategy is being pursued by the pharmaceutical industry to commercialize a weight loss drug that contains naltrexone, an oral equivalent to naloxone.
- Wheat, in fact, nearly stands alone as a food with potent central nervous system effects. Outside of intoxicants such as ethanol (like that in your favorite merlot or chardonnay), wheat is one of the few foods that can alter behavior, induce pleasurable effects, and generate a withdrawal syndrome upon its removal. And it required observations in schizophrenic patients to teach us about these effects.

Chapter 5: your wheat belly is showing, the wheat/obesity connection.

- As we've discussed, the glycemic index, or GI, is the nutritionist's measure of how much blood sugar levels increase in the 90 to 120 minutes after a food is consumed. By this measure, whole wheat bread has a GI of 72, while plain table sugar has a GI of 59 (though some labs have gotten results as high as 65). In contrast, kidney beans have a GI of 51, grapefruit comes in at 25, while non-carbohydrate foods such as salmon and walnuts have GIs of essentially zero: Eating these foods has no effect on blood sugar. In fact, with few exceptions, few foods have as high a GI as foods made from wheat. Outside of dried sugar-rich fruits such as dates and figs, the only other foods that have GIs as high as wheat products are dried, pulverized Starches such as cornstarch, rice starch, potato starch, and tapioca Starch. (It is worth noting that these are the very same carbohydrates often used to make "gluten-free" food. More on this later.) Because wheat carbohydrate, the uniquely digestible amylopectin A, causes a greater spike in blood sugar than virtually any other food—more than a candy bar, table sugar, or ice cream—it also triggers greater insulin release. More amylopectin 'A' means higher blood sugar, higher insulin, and more visceral fat deposition ... bigger wheat belly.
- Males, having only a tiny fraction of the estrogen of females, are sensitive to anything that increases estrogen. The bigger the wheat belly in males, the more estrogen that is produced by visceral fat tissue. Since estrogen stimulates growth of breast tissue. Elevated estrogen levels can cause men to develop larger breasts— those dreaded "man boobs," "man cans," or, for you professional types, gynecomastia.
- Increased estrogen, breast cancer, man boobs ... all from the bag of bagels shared at the office.
- Dramatic and immediate weight loss similar to that seen in the obese celiac population.
- Be gluten-free but don't eat "gluten-free".
- Gluten is the main protein of wheat, and as I have explained, it is responsible for some, though not all, of the adverse effects of wheat consumption. Gluten is the culprit underlying inflammatory damage to the intestinal tract in celiac disease. People with celiac disease must meticulously avoid food containing gluten. This means the elimination of wheat, as well as gluten-containing grains such as barley, rye, spelt, triticale, kamut, and perhaps oats. People with celiac disease often seek out "gluten-free" foods that mimic wheat-containing products. An entire industry has developed to meet their gluten-free desires, from gluten-free bread to gluten-free cakes and desserts.
- However, many gluten-free foods are made by replacing wheat flour with cornstarch, rice starch, potato starch, or tapioca starch (starch extracted from the root of the cassava plant). This is especially hazardous for anybody looking to drop twenty, thirty, or more pounds, since gluten-free foods, though they do not trigger the immune or neurological response of wheat gluten, still trigger the glucose-insulin response that causes you to gain weight. Wheat products increase blood sugar and insulin more than most other foods. But remember: Foods made with cornstarch, rice starch. Potato starch and tapioca starch are among the few foods that increase blood sugar even more than wheat products. So gluten-free foods are not problem-free. Gluten-free foods are the likely explanation for the overweight celiac sufferers who eliminate wheat and fail to lose weight. In my view, there is no role for gluten-free foods beyond the occasional indulgence, since the metabolic effect of these foods is little different from eating a bowl of jelly beans.

Chapter 6: hello, intestine. It's me, wheat. Wheat and celiac disease.

- Identifying more than 4,700 people with celiac disease, and comparing them to five control subjects for every celiac participant. All participants were then observed for three and a half years for the appearance of various cancers. Over the observation period, participants with celiac disease showed 30 percent greater likelihood of developing some form of cancer, with an incredible one of every thirty-three celiac participants developing cancer despite the relatively short period of observation. Most of the cancers were gastrointestinal malignancies.

Chapter 7: diabetes nation, wheat and insulin resistance.

Chapter 8: dropping acid, wheat as the great pH disruptor.

- Ever notice how people with a wheat belly almost invariably also have arthritis of one or more joints? If you haven't, take notice of how many times someone who carts around the characteristic front loader also limps or winces with hip, knee, or back pain.
- Losing weight, and thereby visceral fat, improves arthritis more than can be expected from just the decreased weight load. In one study of obese participants with osteoarthritis, there was 10 percent improvement in symptoms and joint function with each 1 percent reduction in body fat.

Chapter 9: cataracts, wrinkles, and dowager's pumps, wheat and the aging process.

- If such repetitive high blood sugars lead to health problems. We should see such problems expressed in an exaggerated way in diabetics... and indeed we do. Diabetics, for instance, are two to five times more likely to have coronary artery disease and heart attacks, 44 percent will develop atherosclerosis of the carotid arteries or other arteries outside of the heart, and 20 to 25 percent will develop impaired kidney function or kidney failure an average of eleven years following diagnosis.' In fact, high blood sugars sustained over several years virtually guarantee development of complications.
- While AGEs can be assessed via biopsy of the skin or internal organs, most people are understandably less than enthusiastic about a pair of forceps being inserted into some body cavity to snip a piece of tissue. Thankfully, a simple blood test can be used to gauge the ongoing rate of AGE formation: hemoglobin A1c, or HbA1c. HbA1c is a common blood test that, while usually used for the purpose of diabetes control, can also serve as a simple index of glycation.
- A slender person with a normal insulin response who consumes a limited amount of carbohydrates will have approximately 4.0 to 4.8 percent of all hemoglobin glycated (i.e., an HbA1c of 4.0 to 4.8 percent), reflecting the unavoidable low-grade, normal rate of glycation. Diabetics commonly have 8, 9, even 12 percent or more glycated hemoglobin—twice or more the normal rate. The majority of nondiabetic Americans are somewhere in between, most living in the range of 5.0 to 6.4 percent, above the perfect range but still below the "official" diabetes threshold of 6.5 percent.
- So HbA1c is much more than just a feedback tool for blood glucose control in diabetics. It also reflects the rate at which you are glyating other proteins of the body, the rate at which you are aging. Stay at 5 percent or less, and you are aging at the normal rate; over 5 percent, and time for you is moving faster than it should, taking you closer to the great nursing home in the sky.

Chapter 10: my particles are bigger than yours, wheat and heart disease.

Chapter 11: it's all in your head, wheat and the brain.

Chapter 12: bagel face, wheat's destructive effect on the skin.

- Ironically, it was “common knowledge” in the early twentieth century that acne was caused or worsened by eating starchy foods such as pancakes and biscuits
- More recently, studies have once again pointed at carbohydrates as the trigger of acne formation, working their acne-promoting effects via increased levels of insulin.
- It should come as no surprise that wheat, especially in the form of sugary donuts and cookies—i.e., high glycemic index wheat with high-glycemic index sucrose—causes acne. But it's also true of your multigrain bread cleverly disguised as healthy.

Part three: say goodbye to wheat.

Chapter 13: goodbye wheat, create a healthy delicious, wheat free life.

- If the gap left by wheat is filled with vegetables, nuts, meats, eggs, avocados, olives, cheese—i.e., real food—then not only won't you develop a dietary deficiency, you will enjoy better health, more energy, better sleep, weight loss, and reversal of all the abnormal phenomena we've discussed.
- If you fill the gap left by excising wheat products with corn chips, energy bars, and fruit drinks. Then, yes, you will simply have replaced one undesirable group of foods with another undesirable group; you've achieved little.'
- **In my experience, the most** effective and, ultimately, the easiest way to eliminate wheat is to do it abruptly and completely. The insulin-glucose roller coaster caused by wheat, along- with brain—addictive exorphin effects, makes it difficult for some people to gradually reduce wheat, so abrupt cessation may be preferable. Abrupt and complete elimination of wheat will, in the susceptible. Trigger the withdrawal phenomenon. But getting through the withdrawal that accompanies abrupt cessation may be easier than the gnawing fluctuations of cravings that usually accompany just cutting back—not much different from an alcoholic trying to go dry. Nonetheless, some people are more comfortable with gradual reduction rather than abrupt elimination. Either way, the end result is the same.
- Food manufacturers, wheat is like nicotine in cigarettes: the best insurance they have to encourage continued consumption.
- People who habitually consume wheat products become crabby, foggy, and tired after just a couple of hours of not having I wheat product, often desperately searching for any crumb or morsel to relieve the pain, a phenomenon I've watched with dry amusement from my comfortable wheat-free vantage point.
- After a 7:00 a.m. breakfast of two scrambled eggs with vegetables, peppers, and olive oil, for instance, you likely won't be hungry until noon or 1 p.m. Compare this to the 90- to 120-minute cycle of insatiable hunger most people experience after a 7:00 a.m.
- Many people are, in effect, enslaved by wheat and the schedules and habits dictated to them by its availability.

- Unlike opiate or alcohol withdrawal, wheat withdrawal does not result in seizures or hallucinations, blackouts, or other dangerous phenomena. The closest parallel to wheat withdrawal is the nicotine withdrawal that results from quitting cigarettes; for some people, the experience is nearly as intense. Like nicotine withdrawal, wheat withdrawal can cause fatigue, mental fogging, and irritability. It can also be accompanied by a vague dysphasia, a feeling of low mood and sadness. Wheat withdrawal often has the unique effect of diminished capacity to exercise that usually lasts from two to five days. Wheat withdrawal tends to be short-lived; while ex-smokers are usually still climbing the walls after three to four weeks, most ex-wheat eaters feel better after one week. (The longest I've ever seen wheat withdrawal symptoms persist is for weeks, but that is unusual.)
- Removing sugar sources forces the body to adapt to mobilizing and burning fatty acids instead of more readily accessed sugars, a process that requires several days to kick in. However, this step is a necessary part of converting from fat deposition to fat mobilization and shrinking the visceral fat of the wheat belly.
- In the world of grains, one grain stands apart, since it consists entirely of protein, fiber, and oils: flaxseed. Because it is essentially free of carbohydrates that increase blood sugar, ground flaxseed is the one grain that fits nicely into this approach (the unground grain is indigestible). Use ground flaxseed as a hot cereal (heated, for instance, with milk, unsweetened almond milk).
- The only common diet variable in this approach is carbohydrate content. Because of the excessive carbohydrate sensitivity most adults have acquired through years of excessive carbohydrate consumption, I find that most do best maintaining daily carbohydrate intake to approximately 50 to 100 grams per day. An even stricter carbohydrate restriction is occasionally necessary if you are trying to undo pre-diabetes or diabetes (e.g., less than 30 grams per day). While people who exercise for prolonged periods (e.g., marathon runners, triathletes, long-distance bikers) will need increase carbohydrate intake during exercise.
- On the Wheat Belly diet plan, you will quickly break yourself the habit of “grazing,” i.e., eating many smaller meals or frequent between-meal snacks. This absurd notion will soon become remnant of your previous wheat-consumed lifestyle since your appetite will no longer be dictated by the 90- to 120-minute-long glucose insulin roller coaster of hunger.
- In a wheat-free regimen, healthy snack choices include:
 - Raw nuts—again, choose raw over dry roasted, smokehouse honey roasted, or glazed varieties. (Recall that peanuts, a legume and not a nut, should be dry roasted, not raw.)
 - Cheese—Cheese doesn't end at Cheddar. A plate of cheeses. Raw nuts, and olives can serve as a more substantial snack
 - Dark chocolates—You want cacao with just enough sugar to make chocolate-flavored sugar. The best choices contain 85 percent or more cacao.
 - Low-carb crackers—As a general rule, I believe we are best sticking to “real” foods, not imitations or synthetic modifications.