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## Twelve Simple Ways to Eat the Anti-Inflammatory Way

Now that you've learned what to eat, it's equally healthful to know how to eat. The anti-inflammatory way of eating means not only keeping sticky stuff out of your mouth as much as possible, but also keeping the level of sticky foods that do get into your gut from getting too high in your blood. In putting together my healthiest list of inflammatory-balancing foods and ways to eat, I first selected criteria for putting together the anti-inflammatory way of eating:

**Show me the science.** I don't put any food into my mouth, or recommend it to my hurting patients, if it isn't backed up by solid science. The field of nutrition is rife with fads and junk science making faulty conclusions motivated more by money and marketing than by solid science. This is why I've included over 100 scientific references beginning on page 268.

**Consider the source.** Can you trust government guidelines? Sometimes. The government is still suffering indigestion from

approving trans fats and its original food pyramid, known in medical circles as the Titanic Food Pyramid, which will go down in history as the most unhealthy dietary advice ever given. It was prompted by politics and special interest lobbying rather than the best interests of the health of American people. Most nutritionists have a fix for the original U.S. Department of Agriculture (USDA) food pyramid: “Just turn it upside down so refined carbs are sparsely at the top and healthy fats are prominent at the base.” Although the revamping of the food pyramid ([www.MyPlate.gov](http://www.MyPlate.gov)) is certainly an improvement, there is a major flaw that, until corrected, will always make government guidelines hard to digest: food guidelines are made by the USDA, which is infected with special interest Big Food and Big Farm groups, instead of by the National Institutes of Health (NIH), the most trusted scientific health department of the U.S. government. I had the privilege of spending two years in research at the NIH and had a dream that if I could be surgeon general for an hour, the first change I would make would be to shift responsibility for all food guidelines from the USDA to the NIH. Still dreaming!

Here are time-tested and science-based eating tips to balance your immune system:

## 1. GRAZE

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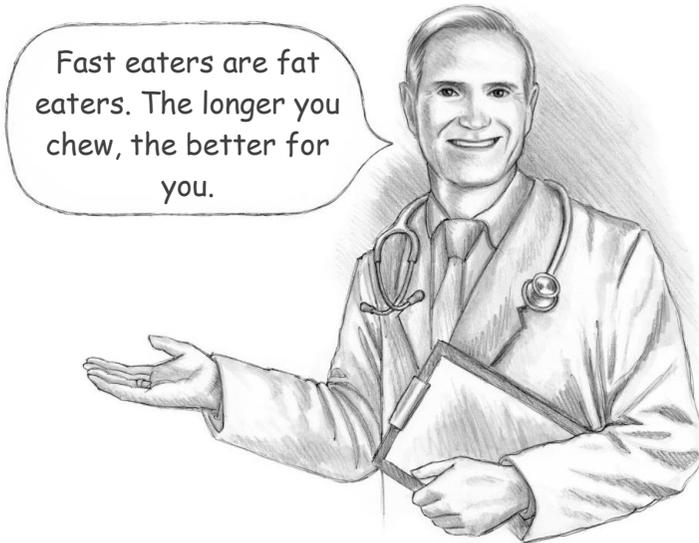
Keep your body in inflammation balance. *Graze* on frequent mini meals of healthy food throughout the day instead of gorging on fewer large meals. Why? Simply put, grazers get less sticky stuff in their blood and tissues than do gorgers.

**Enjoy Dr. Bill’s anti-inflammatory rule of twos.** During an average day in my medical office, I “recommend” this memorable anti-

inflammatory tool, especially for my patients with the “shuns” – inflammation, indigestion, and constipation.

- Eat *twice* as often
- Eat *half* as much
- Chew *twice* as long
- Take *twice* the time to dine

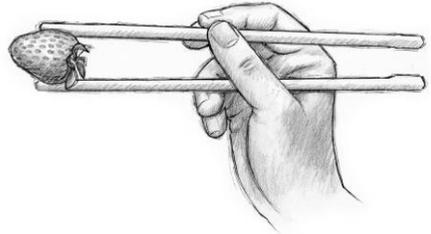
**You can do that!**



**Use chopsticks.** Forget the fork and use chopsticks. Chopsticks force you to take smaller bites, eat more slowly and better enjoy each bite. You'll feel fuller sooner and are less likely to overeat. We tried this experiment in our family and medical practice and it's one of the most useful weight-management strategies, in addition to helping you enjoy the after-meal good gut feelings. And as an added cerebral perk, the new fine motor movements help you grow new brain pathways.

**My Japanese good-gut feeling experience.** While writing this book, I had the privilege of lecturing at a scientific meeting in Japan. During my trip, I ate more but felt more comfortable after the meals. Why? I wondered. I concluded that there were three reasons:

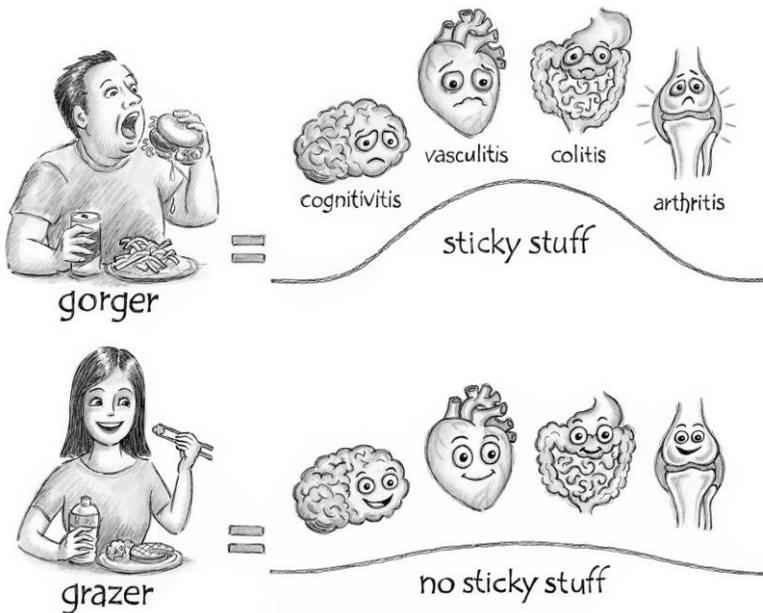
1. Using chopsticks prompted me to take smaller bites and take a longer time to dine.
2. The food was real, not processed, such as seafood, tofu, vegetables, and lots of spices like ginger. All these foods give you less of a spike in blood fats and less uncomfortable full feelings after a meal.
3. Sipping green tea with the meal helped blunt the spikes.



The Japanese have fewer inflammatory diseases, probably because they put less sticky stuff in their mouths in the first place.

### THE HORMONAL HARMONY OF GRAZING

Think of your body as a giant biochemical orchestra and each hormone as a player. When all the hormones, especially the inflammation hormones, are in balance, beautiful music, or wellness, results. When the hormones are out of balance – meaning one plays too loud, another plays too soft, or one plays too strong for too long – your body is in inflammation imbalance, or illness. Grazing gives you *stable insulin levels* – the three magic words of hormonal harmony. Think of insulin as the master conductor of your hormonal symphony. When your insulin is stable (“on key”), the rest of the inflammation players in your orchestra are in hormonal harmony and your body plays beautiful music. Your body is in balance!



## A Tale of Two Eaters

### George the Gorging vs. Gracie the Grazer

To understand why Gracie's body enjoys inflammation balance and George's does not, let's follow both of these eaters from mouth to joints to understand why grazers hurt less and gorgers hurt more. Another way to look at the difference between grazers and gorgers is that gorgers have more "sticky-stuff spikes" in their blood and grazers have fewer. Sticky-stuff spikes are the root cause of many inflammatory flare-ups. To get your body back into inflammation balance, try to remember each time you eat, "no spikes." If your immune system could talk, it would prompt you, "No sticky-stuff spikes, please."

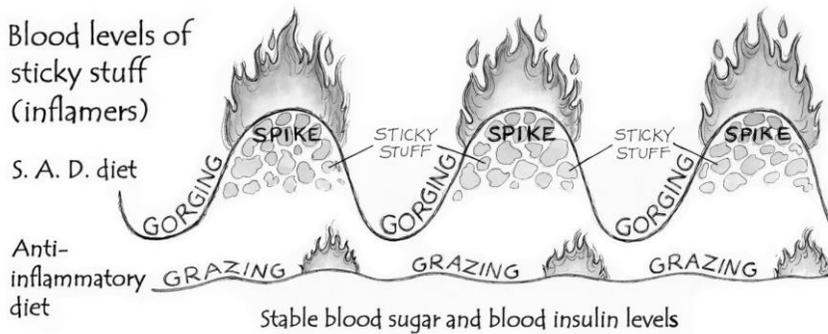
**George the Gorger.** George's nickname is "Spikey" because he gets a lot of high-fat and sugar spikes in his blood. He eats SAD – the Standard American Diet. George feasts on all-you-can-eat buffets. As he gazes longingly at the array of food, his brain is already in inflammatory trouble. He may not know it, but digestion begins in the brain – called the *cephalic phase of digestion*. Just the anticipation of all that tasty food gets the digestion juices – and the inflammatory biochemicals – turned on. George is in inflammatory trouble even before he takes his first bite. George grabs a giant plate and proceeds to the steak section where he prompts the griller, "Bud, burn a big one for me!" Next to the sticky sirloin he puts a big scoop of buttery mashed potatoes slathered with creamy gravy. Then he scarfs down a big bowl of pasta with Alfredo sauce and fries and chases these sticky fats with a cola. The level of unhealthful saturated fats are so high in his bloodstream that they saturate the endothelium with sticky stuff. During this sticky meal, the blood vessels get so upset they actually start quivering – called vasospasm, or narrowing. The blood level of sticky fats (called postprandial lipemia) and sticky sugars (called postprandial glycemia) goes sky high. Blood flow goes into a hyper sticky state, called sludging, causing the blood vessels to get narrower and blood flow to slow. The sticky stuff, in effect, causes a traffic jam, which can result in a blood clot, coronary thrombosis, or stroke.

Within a couple hours after this high-fat meal, sticky fats, or triglycerides, go up. Another sticky chemical called fibrinogen also goes up. Fibrinogen is like a fishnet of chemicals that help your blood clot. A certain level of fibrinogen is necessary to help your blood clot in case you cut your finger. However, too much causes the blood to clot too fast. (See related subject, "The Steakhouse Effect," page 110.)

A little known nutrifact is that when you combine junk carbs with burnt meats this combo causes sticky blood sugar levels to remain higher for longer, doing double damage.

Meanwhile, down in the joints: If George's blood vessels survive the gorging, the inflammatory chemicals have been turned so high that

the “-itis” dial gets turned up, resulting in a total body inflammatory effect. Fewer organs work and more organs hurt. The blood cells can’t flow as quickly because there’s a lot of sticky stuff floating around to slow them down. The SAD diet sets George up for a SAD life (*sick all day*).



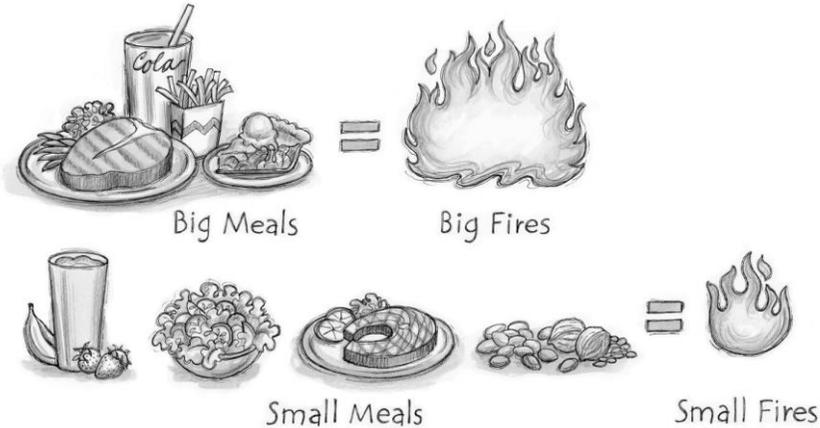
**Gracie the Grazer.** Gracie’s nickname is “Steady” because her blood levels of fats and carbs are steadier than those of “Spikey” George. Gracie frequents a restaurant that specializes in Asian cuisine and also has a delectable salad bar. Her eyes zero in on the salad bar first because her brain tells her – as her mother always did – that beginning a meal with a salad gets her blood level of anti-sticky-stuff biochemicals (antioxidants) high to protect her blood vessels and tissues from too much sticky stuff getting into them too fast. Gracie sits down with a small plate of salad in one hand and chopsticks in the other. She slowly grazes on the salad, chewing each small bite 20-30 times, and enjoying a humorous conversation between bites. She goes back for seconds, again with a small plate, and enjoys a salmon fillet, grilled asparagus, and some wild rice. Gracie’s tummy feels full and satisfied because she chews each bite carefully, stimulating more saliva, her body’s natural intestinal-health juice to pre-digest the food even before it reaches her stomach. If her blood vessels could talk they

<b>GRAZERS VS. GORGERS</b>	
<p style="text-align: center;"><b>Grazers are...</b></p> <ul style="list-style-type: none"> <li>• Likely to be more lean</li> <li>• More satisfied, less hungry</li> <li>• Clearer thinkers</li> <li>• Less moody</li> <li>• More alert</li> <li>• More energetic</li> <li>• Have comfortable gut feelings</li> <li>• Have fewer “-itis” illnesses</li> </ul>	<p style="text-align: center;"><b>Gorgers are...</b></p> <ul style="list-style-type: none"> <li>• More likely to be fat</li> <li>• More hungry, less satisfied</li> <li>• Foggier thinkers</li> <li>• Likely to have mood swings</li> <li>• Sleepier</li> <li>• Less energetic</li> <li>• Have pains in the gut</li> <li>• Have more “-itis” illnesses</li> </ul>

would say, “Thank you, Gracie, our traffic is flowing smoothly during the after-meal rush hour.” Her choice of salmon vs. sirloin is also good for her gut and blood vessels. The omega-3s in the salmon increase the enzyme lipoprotein lipase (LPL), which helps clear these sticky fats, triglycerides, from her bloodstream. (After a salmon meal, you don’t get the postprandial lipemia response that happens after scarfing down a steak. Unlike the steak fats that stick to the blood cells and slow them down, the smooth fats in the salmon ride along on the surface of the blood cells and make them less sticky so the traffic doesn’t slow after the meal.)

When Gracie bypasses the meat counter and goes directly to the seafood and salad section, unlike George, she likely avoids a coronary bypass. Studies show that the steak effect and the seafood effect are very different regarding postprandial lipemia, which doesn’t occur after a seafood meal as opposed to a dangerously fatty meat meal. Think sticky steak versus smooth seafood. As another postprandial

perk, a seafood-rich meal causes more postprandial satiety, also called “after-meal fullness,” enabling the eater to feel more comfortably full sooner. Gracie’s diet of eating real food real often helps her feel real good.



## 2. SMALLER BITES GIVE SMALLER SPIKES

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Not only does eating less sticky food give you smaller sticky-blood spikes, eating slower and eating a smaller volume helps reduce the usual after-eating spikes. You’ve heard the admonitions “mindless eating” and “your eyes are bigger than your stomach.” That’s true – and inflammatory! Here’s what science says about some practical food-serving tips to help you be satisfied with smaller amounts:

**Serve food in smaller containers.** Serving food in smaller bowls, smaller plates, smaller forks and spoons, and taller, skinnier glasses prompts people of all ages to eat less.

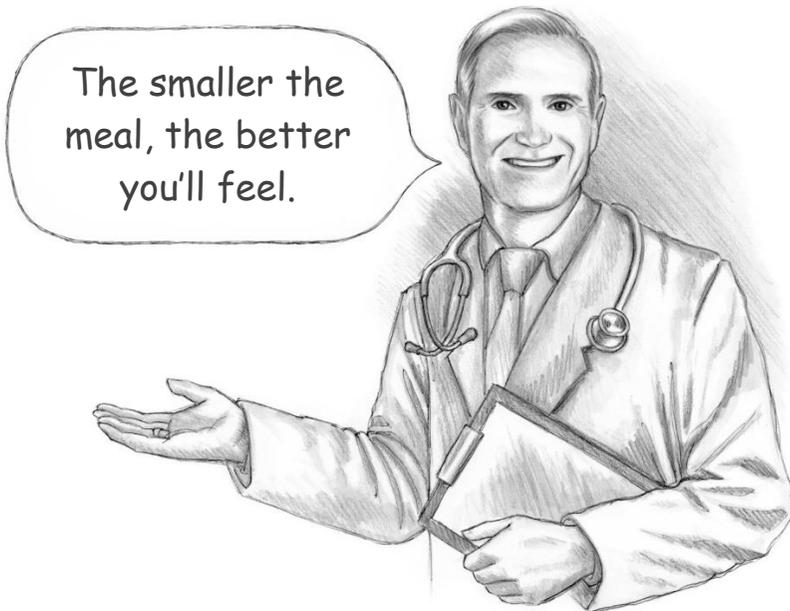
**Out of sight, out of stomach.** After you serve yourself, remove the large serving bowls from the dinner table. If you stare at the full bowl

of pasta in front of you, you'll impulsively grab more. If you have to get up and find the bowl, even a few feet away, you're likely to eat more slowly and less. When you have to get up and walk to your next serving, you tend to eat less.

**Do an experiment.** Try this anti-inflammatory eating experiment: Prepare the same dinner for two evenings. One night eat it in a quiet and romantic place in your home with candlelight, soft music, and next to a window. The next night eat dinner at a well-lit, cluttered, noisier kitchen table. Because our gut brain and head brain are more in tune with each other, you are more likely to eat less and dine longer in the more relaxed setting.

## Think Before You Eat

You may have heard this behavioral advice: think before you act. Here's a piece of similar nutritional advice: think before you *eat*. Before



you give in to a craving that is likely to harm your health, say sitting in front of a TV and downing a donut, imagine the “donut effect” on your body. Imagine what the food is going to do to you before you eat it: sticky stuff sticking on the tissues of your brain, blood vessels, gut, and joints. Every time you see a donut, or even think of eating one, let the sticky thoughts trigger sickly images. This *negative conditioning* eventually programs your brain to reject donuts instead of crave them.

### SPIKE-LESS SUPERFOODS

#### Spike-less foods

- Seafood
- Legumes
- Vegetables
- Greens
- Plain yogurt
- Nuts (especially walnuts)

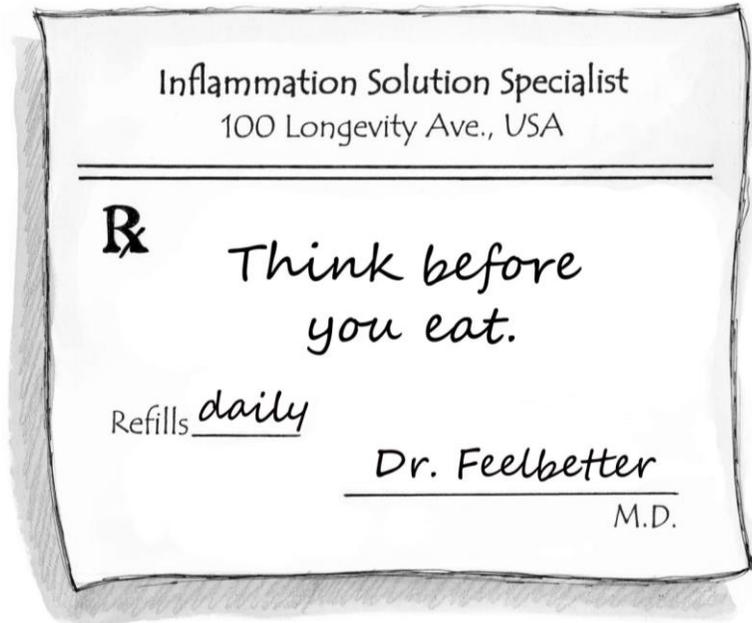
#### Spike-more foods

- Sweetened beverages (especially on an empty stomach)
- White bread
- Overcooked pasta (see page 132)
- Big burgers
- Fries
- High-fructose corn syrup
- Artificial sweeteners

**My “salmon effect” story.** I wasn’t always fond of seafood but I was even less fond of getting inflamed with “-itis” illnesses. So when I saw a fillet of salmon I would imagine the omega-3 oils being good for my brain, eyes, heart, and joints, the vitamin D strengthening my bones and immune system, the astaxanthin being an anti-rust antioxidant,

and so on. Eventually this *positive conditioning* clicked in and my brain convinced my body to crave salmon.

Remember, the head brain and gut brain are partners in inflammation health. Get them talking to each other. You can do that!



### 3. EAT SALADS FIRST

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Salads are a healthy start to any full meal. When you eat a big green salad, two inflammation-balancing effects happen. The first is that you tend to eat less of the more “sticky” foods in the rest of the meal. The second is that by slowing the absorption of sugars and fats, the fiber in salads lower sticky spikes of inflamers during the entire meal. (See more about how salads blunt spikes, page 66.)

## 4. EAT MORE SEAFOOD AND LESS MEAT

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As you learned from George’s steak saga and Gracie’s salmon tale, eating the same amount of seafood versus meat not only causes less postprandial lipemia (sticky stuff in the blood and slowing of blood flow), but seafood is a high-satiety food, helping you feel comfortably fuller while eating less. This is why successful weight-control programs add high levels of omega-3 fats to the diet. The healthy fat profile in seafood, especially wild salmon, enjoys a perk called *postprandial satiety*, meaning you get comfortably fuller sooner, so that fish-eaters are better able to curb overeating. (See more about the anti-sticky stuff effects of seafood, page 46, and the sticky effects of meat, page 132.)

Next time you’re supermarket shopping, stare at a steak. Notice the meat is marbled and coated with white “sticky stuff”. That’s the result of all those sticky-carb grains used to fatten up the beef to weigh more and be worth more at market. Do you want your tissues to be streaked with sticky stuff, like the poor animal that sat around and ate junk food all day, or do you want them to be smooth and flexible like the swimming, real-food-eating salmon?



**Salmon vs. Sirloin**

## 5. ADD VEGETABLES TO YOUR MAIN COURSE

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Instead of “fries,” request a bunch of lightly steamed broccoli. Pairing other foods, especially meats, with vegetables somewhat reduces the postprandial lipemia (lowers sticky-stuff spikes).

## 6. DRINK UP TO LOWER STICKY STUFF

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Here are drinks that are not only good to your gut, but good for your inflammation balance.

### MY MEDICINE MEAL

I’ve enjoyed five trips to Japan to speak at scientific meetings on health and nutrition. During one of the trips, our Japanese host announced, “We’re going to take you and Martha out for a medicine meal before your lecture.” While I seldom eat a large meal before giving a talk, it would have been rude to refuse. The “medicine meal” was eight small courses of seafood, sea plants, and vegetables. After the meal I felt comfortably satisfied, neither too full nor hungry, but just right. Both my “gut brain” and my head brain were feeling good. Best talk I ever gave. Another good gut experience I noticed after dining on a “traditional Japanese dinner” (a 3-hour gastric delight of grazing on 15 courses of small portions interspersed with laughter and camaraderie) was that even though I ate a lot, I felt good, just the opposite of those bloated, blah, bad gut feelings that I would experience after gorging on an American buffet. It’s amazing how the internal language of your gut says, “You feed me right, and you’ll feel right.”

## Green Tea is a Good Anti-Inflammatory

I enjoy the anti-inflammatory effect of my daily cup of green tea. Why is green tea so great? The anti-inflammatory ingredient in green tea is EGCG. Cardiologists particularly like green tea because it naturally lowers lipids. Green tea seems to reduce the absorption of cholesterol, and it reduces the mischief that happens to dietary cholesterol by making the oxidized molecules less sticky. Among its many other health benefits, green tea reduces the blood levels of excess sticky blood fats, especially oxidized LDL. Neurologists call green tea a “neuroprotectant” because it helps remove amyloid (sticky stuff) deposits in the brain and, at least in experimental animals, helps grow new brain tissue. A healthful benefit of green tea is it diminishes the sticky-stuff spikes in the blood after eating a high-fat meal. Some of these effects occurred in drinking as little as two cups of green tea a day.

## Why Wine Might Help Inflammation Balance

What would a health book be without wine, or an anti-inflammatory diet without this ancient remedy that has been perceived for centuries

### DON'T DRINK SWEETENED BEVERAGES ON AN EMPTY STOMACH

To avoid sudden sticky-sugar spikes, if you absolutely must have that cola, sip it *slowly with your meal*. Think: real food tames the inflaming effects of fake food. Also, don't do diet drinks, as the artificial sweeteners can prompt the brain to crave carbs for hours after you've downed that “low calorie” drink containing neurotoxins.

as a health drink? Much to wine-lovers' delight, a glass of wine a day may help keep the "-itis" doctor away. Here are some wine-tasting tips to get the most healthful benefits from that Cabernet:

- **Respect your resveratrol.** The fermenting of red grapes produces a potent antioxidant in the polyphenol class called resveratrol. Wine researchers believe that this natural antioxidant may help reduce the effects of those sticky fats when sipped with a sticky meal, such as a grilled steak. While there are many other health claims to resveratrol, such as "the longevity factor in red wine" (including boosting immunity, lessening the stickiness of blood, and acting as a natural anti-coagulant), most of these studies were done in animals and test tubes, and with such high doses that you would have to drink a barrel of wine to get the same resveratrol effect as the studies showed.
- **Sip slowly.** Sip one glass (females) or two glasses (males) *slowly* and always with a full meal, never on an empty stomach.
- **Search the label for sulfites.** While sulfites may seem harmless to most people, some are highly allergic to them. They are used as chemical preservatives and are thought to act like an antioxidant within the wine. Also, the tannins, a natural biochemical byproduct of the fermentation process, may sometimes provoke a histamine-allergic response or migraine headaches.

The science of the anti-inflammatory effects of red wine is not solid enough to recommend that you start drinking wine if you don't already drink it.

## 7. DON'T OVERCOOK YOUR FOOD AND YOURSELF

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In my pre-colon cancer days, I ordered a steak or burger with a nice crispy char. Overcooking your food overcooks – inflames – your body. Aging and inflammation have similar effects as when you overcook food. Meat and fish are the biggest examples. While people who eat the most fish have the fewest heart attacks, the more fried fish a person eats, the higher their risk of heart attacks. Aging of the tissues, especially the skin, depends on how you care for it. People who age too fast have subjected themselves to the same biochemical aging that happens to overcooked food – they overcooked their tissues with too much sticky stuff. The sticky food chemicals that stick to your tissues are called AGEs (see page 45) and are also known by the unappetizing term *glycotoxins*.

Glycation is a chemical process that makes otherwise healthful biochemicals in food sticky and unhealthy in your body. One of these is LDL cholesterol. Persons who eat the most overcooked or fried foods tend to have the highest level of glycated or sticky LDL. The reason animal-based foods, especially red meats, form the most AGEs, or very sticky stuff, is that these meats contain more of the type of fats that form sticky chemicals when they are overheated.

**Careful cooking protects your body.** Cooking with dry heat seems to be the worst. Cooking with moist heat, especially when the meat or fish is marinated or steamed, seems to be the healthiest because it produces less sticky stuff. Careful cooking yields a healthier meal. For example, cooking pasta *al dente* yields a tasty, chewy pasta with a lower glycemic index (the sugars are slower to release into the bloodstream and less sticky) than the sugar-rush, overcooked, mushy stuff typical in most American homes and restaurants. Overheating good oils, another example, causes a good fat to go bad.

One day I was explaining the “shuns” to a chef friend who got it right, “So over-inflamed means your body is overcooked.”

**Marinate meats.** Stewing, poaching, or steaming is the healthiest way to cook meats and fish. Marinating in olive oil, apple cider vinegar, lemon juice, wines, and mustard garlic allows fewer AGEs to form. Try wet-sautéing (in half water, half oil). In plain chef talk, the more you grill your food, the more you're likely to grill your body. Next time you're grilling chicken or steak, imagine a similar process happening in the tissues of your body. When your body proteins are "cooked" with sugars, it's actually called "a browning effect," as happens when you grill your steak or chicken. Browning occurs when heated sugars and proteins react chemically with each other. The food turns brown and stiffens – it ages. The same stiffening happens in your body, especially in vulnerable tissues like arteries, eyes, and skin. Think stiff steak causing stiff arteries. If you must grill your food, at least marinate it, don't char it, and begin the meal with a big salad. (See how salads help tame inflammation, page 66.)

To motivate you to have burned your last burger, consider these cancer-causing facts: Over-grilling and charring forms carcinogenic compounds that even sound toxic: heterocyclicamines, glyoxals, and acrylamides. Shocking studies reveal that those who eat the most charred meats suffer the most breast, colon, and prostate cancers.

## 8. CARE ABOUT YOUR CARBS

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Not only do fat spikes (hyperlipidemia) trigger sticky-stuff deposits in blood and tissues, sugar spikes (hyperglycemia) can be equally as sticky. Remember how you licked that brown, crusty stuff off the sugar-coated sticky bun you baked? Blood-sugar spikes bake the bake-able proteins in your blood and tissues, forming those sticky AGEs again. Chronic high blood sugar also glycate, or sticks to the normal

## AVOID STICKY CHIPS

Americans consume the most chips and are the most inflamed. When starchy potatoes are fried at high temperatures, a sticky chemical, *acrylamide*, is formed.

Chips polluted with MSG are double trouble. MSG and its aliases (see list of anti-medicines, page 99) increase your cravings for more chips. Remember the ad, “Bet you can’t eat just one!” Neurologists add another MSG caveat: You can actually develop an addiction to this neurotoxic chemical.

enzymes, such as superoxide dismutase, which are the body’s natural clean-up antioxidants.

Besides just plain wearing out the overactive insulin-producing cells in the pancreas, another way chronically high blood sugar leads to type II diabetes is by damaging the cells due to the accumulation of sticky stuff, or inflammation. Yes, the epidemic of type II diabetes is just another in the long list of “-itis” illnesses caused by the simple saying: “You put sticky stuff in your mouth, you get sticky stuff in your tissues.”

There are two camps when it comes to saying which foods cause the greatest sticky stuff effect: fats or carbs. Because it’s most supported by science, I belong to the carb camp. Once American eaters started believing in the low-fat diet fad, they got more inflamed. In fact, many doctors have concluded that the biggest cause of the fattening – and inflaming – of Americans is when fats in foods were replaced with carbs. When you take fat out of food, you lessen the taste appeal. To make fat-less food more tasty, the scientists add more carbs. This has economic advantages: junk carbs are cheaper than



healthy fats. And because junk carbs are less filling than healthy fats, you tend to eat more and buy more because junk carbs cause you to crave more junk carbs. Junk carbs mess up your healthy-craving centers that prompt you to “slow down and stop eating, you’ve had enough.”

**Good carbs and bad carbs.** Here’s how I explain good carbs and junk carbs to kids. A good carb plays with one, two, or three friends: protein, fat, and fiber. The more friends it plays with, the healthier the carb. When you eat these carbs, the three friends hold hands with the carbs to slow their rush into the bloodstream, preventing the spikes of sticky stuff. These friends tell the carb to slow down the rush to get into the bloodstream. This allows the gut to digest it more slowly and the body’s blood delivery channels to deliver it more slowly and completely.

These good carbs also go by other biochemical names such as “low glycemic index” or “low glycemic load” carbs. These glycemic (sugary) terms simply mean how fast and how high what you put into your mouth elevates the level of sticky stuff in your blood. The lower the glycemic index (GI), the lower the level of sticky stuff in your blood.

**Spike-less eating.** Instead of the confusing terms “high and low glycemic,” let’s call them “rush carbs” and “slow carbs.” “Rush carbs” spike more and tend to make you hungry, so you eat more. After eating “slow carbs,” which spike less, you’re satisfied longer and tend to eat less. Another label for carbs is “combo carbs,” which are the carbs that are partnered with other nutrients such as fat, protein, and fiber, which slow down the rush into the bloodstream. “Solo” carbs are the worst, meaning they have no friends or partners. Try this experiment. Take a tablespoon of jelly (a solo carb) and spread it on a piece of white bread (a rush carb) and eat it. Notice an hour later you’re hungry again because it has little protein, fat, or fiber. Spread the same jelly on top of a tablespoon of peanut butter on a slice of whole wheat bread.

The jelly becomes a combo carb because it is now combined with protein, fat, and fiber, and you feel fuller longer.

Low glycemic index, or low sticky-stuff carbs, are the ones found in nature, especially vegetables, whole grains, and fruits – in that order. Vegetables tend to have the lowest glycemic index because they enjoy two perks: they are high in fiber, which blunts the sticky-stuff effect, and they require longer chewing, which uses up a few more calories and gives you a more steady release of sugar into your bloodstream, allowing the body to use it almost as fast as you eat it. Whole grains also have this fiber effect, especially when partnered with protein. Fruits have the fiber effect, yet they don't have the sugar-blunting effect of protein and fat, which is why fruits are best consumed with meals that are partnered with protein and fiber, such as in a smoothie, a salad, or as a sweet accompaniment to the meal.

“Low-fat” often means added chemical carbs. One of the worst chemical carbs is high fructose corn syrup, which spikes blood insulin levels higher than cane sugar does. Sodas are seriously solo carbs. Sweetened drinks contain only sugar or high fructose corn syrup – no protein, fiber, or fat. So sugar rushes into the bloodstream, causing high levels of sticky stuff in the walls of the blood vessels and throughout the tissues of your body. I believe that the overconsumption of junk carbs, especially sweetened drinks, has been the number one contributor to the epidemic of inflammatory diseases. The consumption of too many junk carbs plus too much sitting are the two main contributors to making Americans the most inflamed people on earth.

**Seductive sweet drinks.** Sweetened drinks, especially those loaded with high fructose corn syrup, not only give you a rush of sticky stuff, they also prompt you to “eat or drink more.” Perhaps that's why fast-food joints offer a cola with the sticky-stuff meal – so you want to buy and eat more sticky stuff.

## DR. BILL ADVISES:

**The Sticky Meaning of Fast Foods**

The term “fast foods” signals various unhealthful effects on the body. It usually means foods that quickly increase the level of sticky stuff in your blood. In the long run it predicts a faster trip to the hospital or heart surgery center, and a faster path to the Ds: disabilities, disease, and doctors. The opposite of fast and sticky is slow and stable. Especially when eating out, ask yourself how this food and way of eating will affect your sticky-stuff blood level. This *cognitive connection*, also known as the cephalic stage of eating, or “mind before mouth,” helps you be mindful of the healthful or unhealthful effects on your body before you get a stomach full of them. “Think before you eat” is a valuable disease-sparing health tip. (For more “Think before you eat” tips, see page 117.)

## 9. PARTNER YOUR INDULGENCES WITH ANTI-STICKY STUFF FOODS

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Suppose you’re about to indulge in sticky foods at an all-you-can-eat buffet. Here’s how to ease the sticky-stuff effect on your blood and tissues. Shortly before you dine, do some vigorous exercise, such as walk around the restaurant parking lot, and do some isometrics (see why and how, page 217). Begin the meal with a hunk of fish, or down 3-4 grams (3,000 – 4,000 mg) of an omega-3 supplement. Even better, if you can pre-plan your pig-out a few days before, take this high dose of omega supplements daily. Research has shown that exercise and high doses of omega-3 supplements reduce the postprandial lipemia following a high-fat meal. (See related sections: Add Vegetables to Your Main Course 129, and Eat Salads First, page 127.)

## CHASE YOUR MEAL WITH CHOCOLATE

Can a few squares of chocolate a day chase the sticky stuff away? Possibly so. Several years into my anti-inflammatory way of eating, I started noticing the goal of all dietary changes: my tastes were changing – in a healthy direction. I had re-conditioned my cravings. I did this by first learning what nutrients are best for keeping the sticky stuff under control, and then convincing myself to eat food containing those nutrients whether I liked them or not. This mindset helped me go from “don’t like” to “like” to “crave.” This is the sequence I preach in my medical practice. I started craving nutrients that were good for my body and shunning nutrients that were bad. One of those cravings was dark chocolate. There are many health benefits in chocolate, especially the antioxidants in cocoa called flavenols, a nitric oxide producer which is a powerful antioxidant. Yet it made no sense to swallow a powerful antioxidant – cocoa – mixed with junk sugars, which were pro-oxidants. So I had a little taste conditioning to do, starting with 60 percent cocoa, and gradually over three months increasing to 80 percent. It’s amazing how you can re-shape your tastes. If I had started immediately with the healthy 80 percent, I would have perceived it as too bitter and not sweet enough, and it would have dampened my cravings. Now I consider 60 percent too sweet and 80 percent just right.

Then, I noticed I started craving two squares of 80 percent dark cocoa chocolate after my biggest meal of the day, the evening (a problem I’m still trying to solve). I thought it was more psychological than physical to end my meal on a sweet note. Then I realized that basically the inner wisdom of my body was telling me to eat a hefty dose of antioxidants to lower the sticky-stuff effect of the meal.

Unhealthy cravings are part of a body being out of inflammation balance; healthy cravings are a sign that your body is achieving inflammation balance.

### **Inflammation tips for chocolate lovers:**

- The higher the cocoa percentage the healthier the chocolate.
- Dark chocolate is healthier than milk or white chocolate.

### CHASE YOUR MEAL WITH CHOCOLATE (CONT'D)

- Pure *cocoa powder* usually contains more flavonoids (antioxidants). Once the cocoa gets processed into other forms (like chocolate), the antioxidant value decreases.

“Dutch” chocolate, or “dutched,” is a chemical process that removes many of the antioxidants. Pure, dark chocolate is better.

## 10. GIVE YOURSELF AN OIL CHANGE

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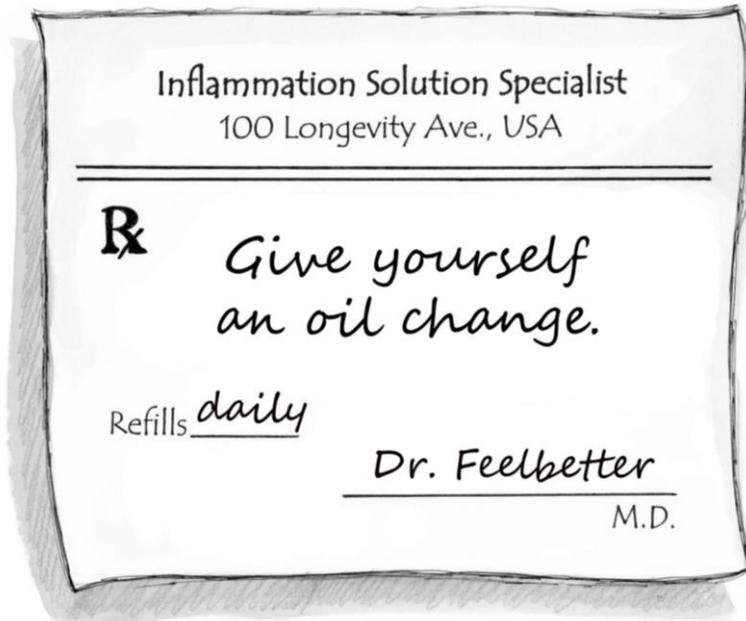
Ever since my health crisis, I’ve been developing my personal health plan: “everything works and nothing hurts.” For one of my books I consulted the world’s experts in preventing illness and inflammation. These scientists combined had personally published over 1,800 scientific articles, so I knew I was getting great advice. I asked them what would be one of the top pieces of advice to give patients who are suffering from various “-itis” illnesses.

Their anti-inflammatory prescription: eat more omega-3 oils and less omega-6 oils.

**Oil eating made simple.** Remember what you learned on page 13. To have a body in balance, especially inflammation balance, your two immune system armies, the “fighters” and the “healers,” need to be in balance. When the fighters (also known as pro-inflammatories) outnumber the healers (also known as anti-inflammatories), your body does not enjoy inflammation balance and you hurt. Omega-3 oils (especially fish oil) and olive oil feed the anti-inflammatory armies, or healers. Omega-6 oils (vegetable oils such as soy, corn, and safflower) feed the pro-inflammatory armies, or fighters. When you enjoy omega balance in your body, you’re more likely to enjoy inflammation

balance. The general feeling among inflammation scientists is that the optimal omega balance is around 2:1 omega-6/omega-3 oils. Yet, the SAD is too high in omega-6s and too low in omega-3s, often at a 10:1 to 20:1 ratio.

Over the past several decades, the gradual increase in the omega-6/omega-3 ratio of oil-eating has paralleled the increase in “-itis” illnesses, and many scientists believe there is a cause-and-effect relationship. It’s important to remember that most omega-6 oils are healthy oils. It’s the *excess consumption* of them that contributes to inflammation imbalance. Here’s why the omega-6 / omega-3 imbalance causes inflammation imbalance. Your tissues thrive on both of these oils, using them as part of the structural component of the cell membranes. Within the cell membrane there are enzymes that take inflammation imbalance. Here’s why the omega-6 / omega-3 imbalance causes inflammation imbalance. Your tissues thrive on both of these oils, using them as part of the structural component of the cell membranes. Within the cell membrane there are enzymes that take



YOUR OIL CHANGE GUIDE

**Eat more**

- Fish oil
- Olive oil
- Flax oil
- Nut oils\*
- Coconut oil, virgin\*\*

**Eat less**

- Corn oil
- Soy oil
- Sunflower oil\*\*\*
- Safflower oil\*\*\*

**Eat none**

- Partially-hydrogenated oils
- Cottonseed oil\*\*\*\*
- Canola oil\*\*\*\*\*

\*Nut oils, such as peanut, are excellent for cooking.

\*\*Coconut oil has gotten an unscientific bad rap as a “saturated fat,” but because of its healthy biochemical quirks, it doesn’t behave like a saturated fat in the body and doesn’t increase the sticky stuff in the blood vessels like the saturated fats in meats. Besides, new nutritional insights reveal that “saturated fat” isn’t so unhealthful after all. Also, the MCT (medium-chain triglycerides) in coconut oil may improve cognitive function in patients with dementia, and are healthy fats for intestinal health.

\*\*\* The high oleic sunflower and safflower oils not only have a longer shelf life, but help lower the sticky blood fats.

\*\*\*\*A cheap oil most likely to be contaminated with pesticides and contains one of the highest pro-inflammatory omega-6 / omega-3 ratios, greater than 200:1.

\*\*\*\*\* Too highly processed and chemicalized.

both omega-3 and omega-6 fats and, like bricklayers, assemble them into healthy cell membranes. When you eat an excess of omega-6s, the body uses up the available enzymes so there are not enough left over to utilize the omega-3s.

(For those who want a science-made-simple biochemical explanation of omega-6 and omega-3 oils, see my book *The Omega-3 Effect*, Little Brown 2012).

Remember, omega balance promotes inflammation balance.

## 11. EAT RAW VEGGIES — AGE SLOWER

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Poor dental health can prompt us to chew our food less – just the opposite of what the rest of our gut would like us to do. Some older people tend to overcook vegetables to make them easier to chew, which tends to lessen the nutritional quality. Also, as we age, our digestive enzymes, which are natural chemical digesters, lessen, leading to indigestion. Let's start at the top end of our digestive tract, the mouth, to alleviate this downward spiral through the digestive tract. Besides keeping your teeth healthy, eating raw vegetables and fruits, which contain their own enzymes, helps with digestion. Raw foods release sugar in the gut more slowly than cooked foods since cooking breaks down some of the fibrous tissue that slows the absorption of the sugars. This is one reason why “instant” foods, such as oatmeal, have a higher sugar rush (higher glycemic index) than slow-cooked regular oatmeal. Also, the particle size of the food influences the glycemic load, or how fast the sugar gets into the bloodstream. The smaller the particle, the faster the sugar rush. “Instant” foods have smaller particle sizes, which is one of the reasons they cook faster and the reason they “cook” your body faster. Avoid “instant” foods. “Instant” means that the carbs go instantly into the bloodstream. Also, low-glycemic carbs, such as beans, keep you satisfied longer than high-glycemic carbs, such as potatoes.

## 12. EAT LESS, GET LESS INFLAMED

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As we age, our natural fire-extinguishing system, or inflammation-balancing system, lessens a bit. The good news is that we have a built-in healing mechanism: as we age our resting metabolic rate (RMR), the normal level of metabolism from those millions of mini-fires that burn each minute throughout our body, naturally lessens because the natural burning of fuel from metabolism and repair lessens. We are programmed to eat less as we age because it seems our bodies need less fuel. Our bodies also may become more fuel-efficient as we age.

One way that our bodies become more efficient in using calories is that as we start to eat less, insulin sensitivity improves, so that our bodies have a better ability to regulate the right amount of insulin. Again, high insulin blood level is a sticky-stuff marker. Since insulin sensitivity often declines with increasing age, eating less helps slow this natural decline. Studies have also shown that eating less naturally lowers the level of one type of sticky stuff, the pro-inflammatory cytokine interleukin-6.

Here's what science says about the anti-inflammatory effects of eating less:

- Decreases levels of pro-inflammatory cytokines – sticky stuff.
- Increases brain-growth natural neurochemicals to improve cognitive function.
- Lessens neurodegenerative diseases.

Eating less is another diet-changing tool to lessen your chances of getting one of those neurodegenerative illnesses, such as Alzheimer's. Eating less is a prescription for neuroprotection.