



LOWER YOUR GRAINS & LOWER YOUR INSULIN LEVELS! A NOVEL WAY TO TREAT HYPOGLYCEMIA

Hypoglycemia is a common problem. Over the past fifteen years, our dietary establishment has made a virtual industry of extolling the virtues of carbohydrates.

We're constantly told that carbohydrates are the good guys of nutrition, and that, if we eat large amounts of them, the world should be a better place. In such a world, the experts tell us, there will be no heart disease and no obesity.

Under such guidance, Americans are gobbling breads, cereals, and pastas as if there were no tomorrow, trying desperately to reach that 80 to 85 percent of total calories advocated by the high-carb extremists.

This creates a terrible paradox: people are eating less fat and getting fatter! No medical authority will tell you that excess body fat makes you healthier. There is but one alarming conclusion to reach: a high-carbohydrate, low-fat diet may be dangerous to your health.

Overeating carbohydrate foods can prevent a higher percentage of fats from being used for energy, and lead to a decrease in endurance and an increase in fat storage.

Eating fat does not make you fat. It's your body's response to excess carbohydrates in your diet that makes you fat. Your body has a limited capacity to store excess carbohydrates, but it can easily convert those excess carbohydrates into excess body fat.

It's hard to lose weight by simply restricting calories. Eating less and losing excess body fat do not automatically go hand in hand.

Low-calorie, high-carbohydrate diets generate a series of biochemical signals in your body that will take you out of the balance, making it more difficult to access stored body fat for energy. Result: you'll reach a weight-loss plateau, beyond which you simply can't lose any more weight.

Diets based on choice restriction and calorie limits usually fail. People on restrictive diets get tired of feeling hungry and deprived. They go off their diets, put the weight back on (primarily as increased body fat), and then feel bad about themselves for not having enough will power, discipline, or motivation.

Weight loss has little to do with willpower. You need information, not will power. If you change what you eat, you don't have to be overly concerned about how much you eat. Adhering to a diet of low carbohydrate meals, you can eat enough to feel satisfied and still wind up losing fat-without obsessively counting calories or fat grams.

Food Can Be Good or Bad

The ratio of macronutrients protein, carbohydrate, and fat-in the meals you eat is the key to permanent weight loss and optimal health. Unless you understand the rules that control the powerful biochemical responses generated by food, you will never achieve optimal wellness.



Unfortunately, many people don't really know what a carbohydrate is. Most people will say carbohydrates are sweets and pasta. Ask them what a vegetable or fruit is, and they'll probably reply that it's a vegetable or fruit—as if that were a food type all its own, a food type that they can eat in unlimited amounts without gaining weight.

Well, this may come as a surprise, but all of the above—sweets and pasta, vegetables and fruits—are carbohydrates. Carbohydrates are merely different forms of simple sugars linked together in polymers—something like edible plastic.

Of course, we all need a certain amount of carbohydrates in our diet. The body requires a continual intake of carbohydrates to feed the brain, which uses glucose (a form of sugar) as its primary energy source.

In fact, the brain is a virtual glucose hog, gobbling more than two thirds of the circulating carbohydrates in the bloodstream while you are at rest. To feed this glucose hog, the body continually takes carbohydrates and converts them to glucose.

It's actually a bit more complicated than that. Any carbohydrates not immediately used by the body will be stored in the form of glycogen (a long string of glucose molecules linked together).

The body has two storage sites for glycogen: the liver and the muscles. The glycogen stored in the muscles is inaccessible to the brain. Only the glycogen stored in the liver can be broken down and sent back to the bloodstream so as to maintain adequate blood sugar levels for proper brain function. The liver's capacity to store carbohydrates in the form of glycogen is very limited and can be easily depleted within ten to twelve hours. So the liver's glycogen reserves must be maintained on a continual basis. That's why we eat carbohydrates.

The question no one has bothered to ask until now is this: what happens when you eat too much carbohydrate? Here's the answer: whether it's being stored in the liver or the muscles, the total storage capacity of the body for carbohydrate is really quite limited.

If you're an average person, you can store about three hundred to four hundred grams of carbohydrate in your muscles, but you can't get at that carbohydrate. In the liver, where carbohydrates are accessible for glucose conversion, you can store only about sixty to ninety grams.

This is equivalent to about two cups of cooked pasta or three typical candy bars, and it represents your total reserve capacity to keep the brain working properly.

Once the glycogen levels are filled in both the liver and the muscles, excess carbohydrates have just one fate: to be converted into fat and stored in the adipose, that is, fatty, tissue.

In a nutshell, even though carbohydrates themselves are fat-free, excess carbohydrates ends up as excess fat. That's not the worst of it. Any meal or snack high in carbohydrates will generate a rapid rise in blood glucose. To adjust for this rapid rise, the pancreas secretes the hormone insulin into the bloodstream. Insulin then lowers the levels of blood glucose.

The problem is that insulin is essentially a storage hormone, evolved to put aside excess carbohydrate calories in the form of fat in case of future famine. So the insulin that's stimulated by excess



carbohydrates aggressively promotes the accumulation of body fat.

In other words, when we eat too much carbohydrate, we're essentially sending a hormonal message, via insulin, to the body (actually, to the adipose cells). The message: "Store fat."

Hold on; it gets even worse. Not only do increased insulin levels tell the body to store carbohydrates as fat, they also tell it not to release any stored fat. This makes it impossible for you to use your own stored body fat for energy.

So the excess carbohydrates in your diet not only make you fat, they make sure you stay fat. It's a double whammy, and it can be lethal.

Insulin is released by the pancreas after you eat carbohydrates. This causes a rise in blood sugar. Insulin assures your cells receive some blood sugar necessary for life, and increases glycogen storage. However, it also drives your body to use more carbohydrate, and less fat, as fuel. And, insulin converts almost half of your dietary carbohydrate to fat for storage. If you want to use more fats for energy, the insulin response must be moderated.

Diets high in refined sugars release more insulin thereby allowing less stored fat to be burned. High insulin levels also suppress two important hormones: glucagon and growth hormone. Glucagon promotes the burning of fat and sugar. Growth hormone is used for muscle development and building new muscle mass.

Insulin also causes hunger. As blood sugar increases following a carbohydrate meal, insulin rises with the eventual result of lower blood sugar. This results in hunger, often only a couple of hours (or less) after the meal.

Cravings, usually for sweets, are frequently part of this cycle, leading you to resort to snacking, often on more carbohydrates. Not eating makes you feel ravenous shaky, moody and ready to "crash." If the problem is chronic, you never get rid of that extra stored fat, and your energy is adversely affected. Does this sound like you? The best suggestion for anyone wanting to utilize more fats is to moderate the insulin response by limiting (ideally, eliminating) the intake of refined sugars, and keeping all other carbohydrate intake to about 40% of the diet. Generally, non-carbohydrate foods—proteins and fats—don't produce much insulin.

Insulin responses can vary greatly from person to person. But generally, more refined foods evoke a stronger and/or more rapid insulin reaction. One reason for this is refined carbohydrates lack the natural fiber which helps minimize the carbohydrate/insulin response.

Consumption of natural fiber with carbohydrates can reduce the extreme blood sugar reactions described above. Low-fat diets cause quicker digestion and absorption of carbohydrates in the form of sugar. By adding some fats to the diet, digestion and absorption is slower, and the insulin reaction is moderated.

Recommendations for them include long-term restriction of carbohydrates and an increase in dietary fats. For some of these people, it means lowering carbohydrate intake to below 40%, sometimes even as low as 20%. By moderating carbohydrate intake you can increase your fat burning as an optimal and efficient source of almost unlimited energy.



Perhaps a third to a half or more of our population is unable to process carbohydrates-sugars and starches efficiently. In many people it's due to genetics, with lifestyle contributing to the condition.

This can be termed insulin resistance or IR. Like many problems, IR is an individual one, affecting different people different ways. You must determine if you are carbohydrate intolerant, and if so, to what degree. Blood tests will only diagnose the problem in the later stages, but the symptoms may have begun years earlier.

As we now know, insulin has many functions. While it can't get glucose into the cells efficiently when they're in a state of insulin resistance, insulin still performs its other tasks, including converting carbohydrates to fat and inhibiting stored fat from being burned.

In a normal person, 40% of the carbohydrates eaten is converted to fat. In the IR person, that number may be much higher. Many people with IR have a family history of diabetes.

Don't think of IR itself as a disease, although left unchecked, it can create problems that lead to disease. It may be quite normal for some humans to be unable to eat large or even moderate amounts of carbohydrates.

As a matter of fact, we evolved for hundreds of thousands of years from the so-called cave man's diet," which consisted solely of meat and vegetables.

With the onset of modern civilization about 5,000 years ago, our physiology suddenly was asked to digest and metabolize larger amounts of sugar and starch especially refined sugars. But if we are unable to utilize the amount of carbohydrates we eat, certain symptoms will develop.

Below is a list of some of the most common complaints of people with IR. Many symptoms occur immediately following a meal of carbohydrates, and others are constant. Keep in mind that these symptoms may also be related to other problems.

1. **Fatigue.** Whether you call it fatigue or exhaustion, the most common feature of IR is that it wears people out. Some are tired just in the morning or afternoon; others are exhausted all day.
2. **Brain foginess.** Sometimes the fatigue of IR is physical, but often it's mental (as opposed to psychological); the inability to concentrate is the most evident symptom. Loss of creativity, poor memory, failing or poor grades in school often accompany IR, as do various forms of "learning disabilities."
3. **Low blood sugar.** Brief, mild periods of low blood sugar are normal during the day, especially if meals are not eaten on a regular schedule. But prolonged periods of this "hypoglycemia," accompanied by many of the symptoms listed here, especially mental and physical fatigue, are not normal. Feeling jittery agitated and moody is common in IR, with an almost immediate relief once food is eaten. Dizziness is also common, as is the craving for sweets, chocolate or caffeine.

These bouts occur more frequently before meals or first thing in the morning. The old hypoglycemic diet, still in use today, recommends frequent snacks, and individuals with IR usually know to eat often. However, the hypoglycemic diet contains too much carbohydrate for most IR people.

4. **Intestinal bloating.** Most intestinal gas is produced from dietary carbohydrates. IR sufferers who eat carbohydrates suffer from gas, lots of it.



Antacids or other remedies for symptomatic relief, are not very successful in dealing with the problem.

Sometimes the intestinal distress becomes quite severe, resulting in a diagnosis of "colitis" or "ileitis," although this is usually not a true disease state. However, IR is often associated with true gastrointestinal disease, which must be differentiated from simple intestinal bloating.

- 5. Sleepiness.** Many people with IR get sleepy immediately after meals containing more than 20% or 30% carbohydrates. This is typically a pasta meal, or even a meat meal which includes bread or potatoes and a sweet dessert.
- 6. Increased fat storage and weight.** For most people, too much weight is too much fat. In males, a large abdomen is the more evident and earliest sign of IR. In females, it's prominent buttocks, frequently accompanied by "chipmunk cheeks."
- 7. Increased triglycerides.** High triglycerides in the blood are often seen in overweight persons. But even those who are not too fat may have stores of fat in their arteries as a result of IR. These triglycerides are the direct result of carbohydrates from the diet being converted by insulin. In my experience, fasting triglyceride levels over 100 may be an indication of a carbohydrate problem, even though 100 is in the so-called "normal" range.
- 8. Increased blood pressure.** It is well known that most people with hypertension have too much insulin and are IR. It is often possible to show a direct relationship between the level of insulin and the level of blood pressure: as insulin levels elevate, so does blood pressure.
- 9. Depression.** Because carbohydrates are a natural "downer," depressing the brain, it is not uncommon to see many depressed persons also having IR. Carbohydrates do this by changing the brain chemistry. Carbohydrates increase serotonin, which produces a depressing or sleepy feeling. This is the reason nice hotels place candy on your pillow in the evening; it literally helps you sleep. (Protein, on the other hand, is a brain stimulant, picking you up mental Here's another example of how trends distort the real picture: many people have been taught that sugar is stimulating. This is a significant consideration for those trying to learn, whether at school, home or work.)
- 10. Insulin Resistance** is also prevalent in persons addicted to alcohol, caffeine, cigarettes or other drugs. Often, the drug is the secondary problem, with IR being the primary one. Treating this primary problem should obviously be a major focus of any therapy.

IR sufferers may have other symptoms as well. However, when a person with this problem finally lowers carbohydrate intake to tolerable levels, many if not most of the other symptoms may disappear.

With the stress of IR eliminated, the body is finally able to correct many of its own problems. It is possible, although unlikely, that so many of these symptoms can be found in someone who tolerates carbohydrates quite well.

RULES OF THE ROAD TO REACH BALANCE

- 1. Protein.** Know how much protein your body needs. Never consume more protein than your body requires. And never consume less. For precise measurements our nurse can determine that for you. You can also perform the calculations reviewed in The Zone. Generally adult protein requirements range from a low of 35 grams per day or a sedentary 250 pound obese individual to as much as 200 grams per day for a lean heavily exercising 100 pound athlete.



You should have protein at EVERY meal and the total per day should equal your daily requirement. For every three grams of protein at a meal you need to have four grams of carbohydrate and 1.5 grams of fat.

You can multiply protein by 1.25 to obtain the amount of carbohydrate and by 0.5 to obtain the amount of fat. This is a rough estimate and you should not become overwhelmed trying to get this absolutely precise. It is important though to be in the general area.

Corrinne Netzer wrote a book *The Complete Book of Food Counts* that can help you make this calculation. You might also want to make an appointment with our diet counselor Anne to help you with this process.

Choose your protein based on those recommended for your blood type. This can be found in Dr. D'Adamo's book *Eat Right For Your Type*. If you are seriously ill you should have your blood subtyped so we can provide an even more accurate recommendation for you.

2. Carbohydrate. You should also choose your carbohydrates from Dr. D'Adamo's book. If you are insulin resistant, (have high blood pressure, high cholesterol, high blood pressure or are overweight) then you need to specifically restrict your carbohydrates based on the Heller's book *The Carbohydrate Addict's Lifespan Program*.

Combining all three authors is the most powerful method we know to lower your insulin levels and produce optimum health.

If you find yourself hungry and craving sugar or sweets two to three hours after a meal, you probably consumed too many carbohydrates that last meal. Whenever you have a problem with hunger or carbohydrate cravings, look to your last meal for a clue to the reason why.

No matter how consistently you follow this dietary strategy, you are bound to make mistakes. This is especially true at parties or when traveling. Remember, if you're only unbalanced for a short period of time, you're only one meal away from rebalancing. It's like falling off a bike—you just get back up and continue your journey.

3. Fat. Choose your fats based on Dr. D'Adamo's recommendations. Most people can tolerate olive oil and it is the oil of choice. It is best purchased in small glass bottles. Fish is a good source of EPA which is beneficial fat that will help balance out your hormone levels and decrease inflammation.

4. Water. Try to drink at least 64 ounces of pure water per day. If you are a heavy caffeine user, gradually reduce caffeine intake to zero whenever possible as the breakdown products of caffeine will tend to increase insulin levels.

5. Exercise. Try to get 30 to 60 minutes of walking in four to five days a week if the weather permits. If you are seriously debilitated you will have to wait until your health improves. As you are healthier and if you are blood type O or B you can shift to more aggressive exercises.