

## **Carbohydrate Intolerance and the Two-Week Test**

*Dr. Phil Maffetone*

With generations of people over-consuming sugar and other refined carbohydrates, many now have carbohydrate intolerance—or CI—the most well-hidden epidemic.

The full spectrum of CI begins as a hidden problem; it can progress to a functional disorder producing symptoms like fatigue that negatively affects quality of life, and can gradually result in serious illness such as diabetes or heart disease. An individual may find himself or herself at any point along this spectrum. To check how your body handles carbohydrates, the following survey will be useful. Perhaps you are carbohydrate intolerant and don't even realize it. These are some of the signs and symptoms of carbohydrate intolerance--how many do you have?

### Carbohydrate Intolerance Health Survey—Some Common Signs and Symptoms

1. Poor concentration or sleepiness after meals
2. Increased intestinal gas or bloating after meals
3. Frequently hungry
4. Increasing abdominal fat or facial fat (especially cheeks)
5. Frequently fatigued or low energy
6. Insomnia or sleep apnea
7. Waist size increasing with age
8. Fingers swollen/feeling "tight" after exercise
9. Personal or family history: diabetes, kidney or gall stones, gout, high blood pressure, high cholesterol/low HDL, high triglycerides, heart disease, stroke breast cancer
10. Low meat, fish or egg intake
11. Frequent cravings for sweets or caffeine
12. Polycystic ovary (ovarian cysts) for women.

While best viewed as a series of a single, escalating progression of the same problem, carbohydrate intolerance (CI) has distinct stages:

- In the early stages, the symptoms can be elusive, often associated with difficult to diagnose blood-sugar problems, fatigue, intestinal bloating and loss of concentration.
- In the middle stages, the worsening condition may be referred to as carbohydrate-lipid metabolism disturbance or hyperinsulinism, and cause more serious conditions such as hypertension, elevations of LDL and lowering of HDL cholesterol, elevated triglycerides, and increases in body fat.
- In the long term, carbohydrate intolerance manifests itself as more serious problems, including obesity, and various diseases such as diabetes, cancer and heart disease. These end-stage conditions are part of a set of diseases now well recognized and referred to as Syndrome X, or the Metabolic Syndrome.

Taking the Carbohydrate Intolerance survey above is only the first step in reclaiming your optimal health. The next step is taking the Two-Week Test, which will help you determine just how sensitive your body is to carbohydrates.

### **The Two-Week Test**

This evaluation will tell you if you are carbohydrate intolerant, and if so, how to remedy it. Yet I must emphasize that this is only a test and not a permanent diet, and it will only last two weeks—you will not be eating like this forever. And most importantly, this is not a diet, or should be

pursued beyond this 14-day period. Nor should you experience hunger during the Two Week Test—you can eat as much of the non-carbohydrate foods as you want, and as often as you need.

Many thousands of people have used my Two-Week Test to get healthy, fit, and significantly improve their energy levels. Others have found it to be the best way to start burning body fat. Still others have reduced or eliminated medications they once required. Of all the clinical tools I developed and used for assessment and therapy through my career, the consistent results from the Two-Week Test surprised me the most—at how a person can go from one extreme of poor health to vibrant health in such a short time. It's simply a matter of removing a major stress factor—refined carbohydrates and excess insulin—in a person's life and allowing the body to function the way it was originally meant.

#### How I Developed the Two-Week Test

I developed the Two-Week Test in the mid-1980s. After spending almost seven years trying to wean carbohydrate-intolerant patients off white flour and sugar, it was exhausting work—almost like dealing with drug addicts. My goal was to lower carbohydrate intake to find the level that would eliminate signs and symptoms of excess insulin. The process went too slowly. One evening I was reading the Merck Manual, the most popular medical reference book used by health-care professionals to look up basic facts about assessment and treatment procedures. There was a single sentence, almost an aside, about elevations of insulin and how reducing carbohydrates might be necessary in some patients with hyperinsulinemia. Then I recalled a 1971 study from the New England Journal of Medicine. It was tucked away with copies of other studies in a folder called "Blood Sugar and Insulin" in my filing cabinet. As I paged through the study called "Effect of Diet Composition on the Hyperinsulinemia of Obesity" the proverbial pieces to the puzzle starting falling into place. Then I recalled another study. I searched the file hoping to find it. There it was, from Columbia University's Department of Medicine and published in the Journal of Clinical Investigation in 1976 ("Composition of Weight Lost during Short-term Weight Reduction")—it showed that 10 days of restricted carbohydrate foods resulted in not only the loss of weight, but significant reduction of body fat.

This information was not really new to me, it was the reason I was weaning patients' off insulin-provoking foods. But for some reason, the short excerpt, and the other two studies brought everything into clearer focus. I asked myself, "If weaning patients off their unhealthy carbohydrate addiction was so difficult, why not go 'cold turkey' so they could experience the immediate benefits? They would actually feel better quickly because insulin levels would drop right away, and within the first few days they would begin to experience life without harmful levels of this hormone rather than by slowly reducing those foods, which could take weeks or months to attain the same effect.

At first, this new test period I devised lasted 10 days—the same period of time used in one of the studies I had reviewed. But the first few patients I used this new approach on needed more time off carbohydrates to fully appreciate the positive effects, especially with regards to burning body fats. I added four more days to the trial or testing period. Two weeks worked much better.

To be sure patients understood this was not a diet, I referred to it as a test. It became known in my office as the Two-Week Test.

The new Two Week Test was unique. Not because it helped me better understand the patient's sensitivity to carbohydrate foods. But more importantly, rather than conducting a blood or urine test that provided numbers that most patients could not easily understand or translate to real-life changes, this new approach required individuals to take an active role the process of self-evaluation. During the testing period, he or she would actually feel what it was like to have normal insulin levels, optimal blood sugar and, in many cases, be finally free of signs and

symptoms associated with CI—all within a short time frame. This was a far superior method of educating the patient.

For those individuals who were not carbohydrate intolerant and didn't feel any different during the test, it ruled out CI as a common health problem. But patients who were overweight, had blood-sugar problems, and simply could not escape the damage of eating refined carbohydrates, they now knew what it would take to quickly change their health.

It is not the purpose of the Two-Week Test to restrict calories or fat. It merely restricts many carbohydrate foods. And, there's no need to weigh food. Just eat what you're allowed, and avoid what's restricted for a period of two weeks. Nor is its purpose to avoid all dietary carbohydrates, or go into ketosis (an extreme metabolic state of fat burning when little or no glucose is available for energy) like with some diet programs whose long-term success is questionable; in fact, once someone goes off one of these diets, weight gain is typical.

#### Before the Test

Before you start the Two-Week Test, jot down any health problems that you might have, such as insomnia or fatigue. This may take a few days since you might not recall them all at once. This aspect is important because after the test, you will review these complaints to see which ones have improved and which have not.

Next, weigh yourself before starting the test. This is about the only instance I recommend using the scale for body weight—it's not a measure of body fat, but in this case it's a good pre and post evaluation. During the test you may lose some excess water your body is holding, which will show on the scale, but you'll also go into a high fat-burning state and start losing body fat (which won't show on the scale). I've seen some people lose only a few pounds during the test, and some 20 or more pounds. This is not a weight-loss regime, and the main purpose of weighing yourself is to have another sign of how your body is working, especially after the test.

Before you start the test, make sure you have enough of the foods you'll be eating during the test — these are listed below. Go shopping and stock up on these items. This requires a little planning, so make a list of the foods you want to eat and the meals and snacks you want to make available. In addition, go through your cabinets and refrigerator and get rid of any sweets, foods containing them, and all breads and products made from refined flour. Otherwise, you'll be tempted. Many people are addicted to sugar and other carbohydrates, and for the first few days without them you may crave these foods.

Planning what to eat and how often is important. Schedule the test during a two-week period that you are relatively unlikely to have distractions — the holidays or times when social engagements are planned can make it too easy to stray from the plan. Don't worry about cholesterol, fat or calories, or the amount of food you're eating. This is only a test, not the way you'll be eating all the time.

Most importantly, eat breakfast within an hour of waking.

Following the test for less than two weeks probably will not give you a valid result. So, if after five days, for example, you eat a bowl of pasta or a box of cookies, you will need to start the test over.

Foods to Eat During the Test You may eat as much of these foods as you like during the Two-Week Test:

- Eggs (whites and yolk), unprocessed (real) cheeses, heavy (whipping) cream, sour cream.
- Unprocessed meats including beef, turkey, chicken, lamb, fish, and shellfish

- Tomato, V-8 or other vegetable juices
- Water—drink it throughout the day in between meals
- Cooked or raw vegetables such as squash, leaf lettuce and spinach, carrots, broccoli and kale, but no potatoes or corn.
- Nuts, seeds, nut butters
- Oils, vinegar, mayonnaise, salsa, mustard and spices
- Sea salt, unless you are sodium sensitive
- All coffee and tea (if you normally drink it)

Be sure to read the ingredients for all foods, as some form of sugar or carbohydrate may be added. These include peanut butter, mayonnaise, sour cream and even sliced meats.

Foods to Avoid During the Test You may not eat any of the following foods during the Two-Week Test:

- Bread, rolls, pasta, pancakes, cereal, muffins, chips, crackers, rice cakes and similar carbohydrate foods
- Sweets such as cake, cookies, ice-cream, candy, gum, breath mints
- Products that contain hidden sugars, common in ketchup and other prepared foods (read the labels)
- Fruits and fruit juice
- Processed meats and fish such cold cuts and smoked products which often contain sugar
- All types of potatoes, corn, rice and beans
- Milk, half-and-half, and yogurt
- So-called healthy snacks, including all energy bars and sports drinks
- All soda; this includes “enhanced” mineral water, and diet drinks

A Note on Alcohol If you normally drink small to moderate amounts of alcohol, some forms are allowed during the test.

Alcohol allowed: dry wines, and pure distilled spirits (gin, vodka, whiskey, etc.), and those mixed with plain carbonated water, including seltzer, tomato juice or V-8.

Alcohol not allowed: Sweet wines, all beer, Champaign, alcohol containing sugar (rum, liqueurs, etc.), and those mixed with sweet ingredients such as tonic, soda or other sugary liquids. If in doubt, avoid it.

For some meal ideas during the Two Week Test, [click here](#).

**After Taking the Test** Re-evaluate your original list of complaints after the Two-Week Test. Is your energy better? Are you sleeping better? Feeling less depressed? If you feel better now than you did two weeks ago, or if you lost weight, you probably have some degree of CI, and you’re unable to eat as much carbohydrate as you did before the test. Some people who have a high degree of CI will feel dramatically better than they did before the test, especially if there was a large weight loss. Some people say they feel like a new person after taking this test. Others say after a few days of the test, they feel young again.

Any weight loss during the test is not due to reduced calories, as many people eat more calories than usual during this two-week period. It’s due to the increased fat-burning resulting from reduced insulin. While there may be some water loss, especially if you are sodium sensitive, there is real fat loss.

If your blood pressure has been high, and especially if you are on medication, ask your health-care professional to check it several times during the test, and especially right after the test.

Sometimes blood pressure drops significantly and your medication may need to be adjusted, or eliminated, which should only be done by your health-care professional. For many people, as insulin levels are reduced to normal, high blood pressure lowers too.

If nothing improved during the test—and it was done exactly as described above—then you may not be carbohydrate intolerant. But if the Two-Week Test improved your signs and symptoms, the next step is to determine how many carbohydrates your body can tolerate, without a return of these problems. This is done by adding a single-serving size of natural unprocessed carbohydrates to every other meal or snack. The purpose is to determine if any of these carbohydrates cause the return of any of the original signs or symptoms, including weight gain. At this stage, having just completed the test, your body and brain will be more aware of even slight reactions to carbohydrate foods — basically, you'll be more intuitive to how your body responds to food. This is done in the following manner over the next one to two weeks:

- Begin adding single-serving amounts of natural, unprocessed carbohydrates at every other meal or snack. This may be plain yogurt sweetened with a little honey for breakfast, or an apple after lunch or dinner
- For a snack, try tea with honey
- Avoid all refined carbohydrates such as sugar and refined-flour products (like white bread, cereals, rolls or pasta)
- Other suggestions include brown rice, sweet potatoes, yams, lentils and beans

Most bread, crackers, cereals and other grains are processed and should be avoided — even those stating “whole grain” or “100 percent whole wheat.” Read the ingredients carefully. If you can find real-food whole grain products, they can be used. These include sprouted breads, whole oats (they take 30 to 45 minutes to cook) and other dense products made with just ground wheat, rye or other grains. If in doubt, avoid them during this one- to two-week period.

I want to emphasize again not to add carbohydrates in back-to-back meals or snacks because insulin production is partly influenced by your previous meal. With the addition of carbohydrates, be aware of any symptoms you had previously that were eliminated by the test, especially for symptoms that develop immediately after eating, such as intestinal bloating, sleepiness or feelings of depression.

Most importantly, if any signs or symptoms that disappeared during or following the Two-Week Test have now returned, you've probably exceeded your carbohydrate limit. For example, if your hunger or cravings were greatly improved at the end of the test, and now they've returned, you probably added too many carbohydrates. If you lost eight pounds during the test, and gained back five pounds after adding some carbohydrates for a week or two, you've probably eaten too many of them. Likewise, if blood pressure rises significantly after it was reduced, it may be due to excess carbohydrate intake. If any of these situations occur, reduce the carbohydrates by half, or otherwise, experiment to see which particular foods cause symptoms and which don't. Some people return to the Two Week Test and begin the process again.

In some cases, people can tolerate simple carbohydrates, such as fresh fruits, plain yogurt and honey, but not complex carbohydrates such as sweet potato, whole grains, beans or other starches. This may be due to the difficulty in digesting starches in some people with CI. In other situations, some individuals can't tolerate any wheat products due to a sensitivity or even allergy to gluten (discussed in the next chapter. During this post-test period, these dietary factors are often easy to determine.

After a one- to two-week period following the Two-Week Test, by experimenting with natural carbohydrates you'll have an excellent idea about your body's level of tolerance. You'll better

know which foods to avoid, which ones you can eat and those that must be limited. You'll become acutely aware of how your body feels when you eat too many carbohydrates.

From time to time, you may feel the need to go through a Two-Week Test period again to check yourself, or to quickly get back on track after careless eating such as during the holidays, vacations or periods of stress.

Many people find the loss of grains in the diet leaves the digestive tract sluggish and a little constipated. After years of eating lots of carbohydrates, your intestine gets used to that type of bulk. If you become constipated during the Two-Week Test, or afterwards when a lower amount of carbohydrate in the diet is maintained, it could be due to a number of reasons:

- First, you may not be eating enough fiber. Psyllium is a high-fiber herb that is an effective promoter of intestinal function. Adding plain unsweetened psyllium to a glass of water, tomato juice or healthy smoothie can keep your system running smoothly — start with one teaspoon a day for a few days to make sure it's tolerated, then use up to about one tablespoon a day. If you require a fiber supplement, be sure to use the ones that do not contain sugar, so read the labels.
- Dehydration may be another reason for constipation at this time. If you don't drink enough water, you could be predisposed to constipation. During the Two-Week Test, you'll need more water—up to two to three quarts or more per day—which is really a normal amount for a person of average weight.
- After the test, vegetables, legumes, such as lentils, and fruits are also great sources of fiber. So if you become constipated, it may simply be that you need to eat more vegetables and fruits as tolerated.
- In addition, adequate intake of natural fats, discussed later in this book, can also be helpful in preventing constipation.

Occasionally, some people get tired during or after the Two-Week Test. Most commonly it's from not eating enough food, and/or not eating often enough. The most common problem is not eating breakfast. And many people should not go more than three to four hours without eating something healthy.

### **Maintaining Your Food Balance**

Once you successfully finish the Two-Week Test, and add back the right amount of tolerable carbohydrate foods, you should have an excellent idea of your carbohydrate limits—the amount of carbohydrate you can eat without producing abnormal signs or symptoms. This is best accomplished by asking yourself about mental and physical energy, sleepiness and bloating after meals, or any of the problems you had previous to taking the Two-Week Test. You may want to keep a diary so you can be more objective in your self-assessment. In time, you won't need to focus as much on this issue as your intuition will take over and you'll automatically know your limits.

Once you find your level of carbohydrate tolerance, you're on your way to balancing your whole diet. Yet another important aspect of carbohydrate foods to be more aware of is which of the many choices available in supermarkets, farmer's markets, and elsewhere are truly healthy, and which to avoid. While there's nothing radical about the notion that refined carbohydrates are unhealthy, there are many radical diet plans that make it seem like all carbohydrates are deadly. They're not. Finding your level of tolerance is what's most important, then eat only healthy carbohydrates—lentils, fresh fruit, unrefined grains if tolerated, honey as a sweetener.

### **How is the Two-Week Test Different?**

I'm often asked how the Two-Week Test is different than being on a low-glycemic index diet. Today, there are a number of cookbooks and diet plans all based on a low glycemic index approach.

The Two-Week Test is neither a diet that one blindly follows, nor is it a fad diet. Instead, it's an evaluation that helps you individualize your own optimal eating plan for better health, not just for weight loss and reduced body fat. On the other hand, many low-glycemic diets offer gimmicks that teach you how to manipulate meals so you can eat refined carbohydrates and sugar by adding fat or fiber to unhealthy foods—this is not healthy eating, it's an elaborate scheme of cheating your body. But the Two-Week Test teaches you which foods are best for optimal health—everyone is different and responds differently to carbohydrates.

Low-glycemic diets just provide lists of foods with associated numbers to eat or avoid. However, many nutritional scientists question the validity of these numbers, previously determined by often testing just two or three subjects in a lab; this may not sufficiently consider individuality. The test subject's previous meals, variations in quality of the test food (where it was grown, how it was processed and prepared), and the effects of taste on blood sugar, could also result in erroneous numbers for a given food. These are among the reasons many people don't respond well to low glycemic diets—many of the foods don't match their particular needs.

While consuming a low-glycemic diet can result in weight loss for many people, understanding how to eat for overall optimal health rather following food lists is an ultimate goal for long-term success. This includes getting off the diet merry-go-round and finally being freed of sugar addiction.

**To summarize, here are the basics of the Two-Week Test:** - Write a list of all your signs and symptoms

- Weigh yourself
- Plan your meals and snacks — buy sufficient foods allowed on the test, and get rid of those not allowed so you're not tempted
- Eat as much as you need, and as often to never get hungry
- Always eat breakfast
- After the test, re-evaluate your signs and symptoms, including weight
- Begin adding natural, unprocessed carbohydrates to every other meal or snack, and evaluate whether this causes any of your previous signs or symptoms (or weight) to return.