

OVERCOMING INSULIN RESISTANCE

A RETURN TO SENSIBLE EATING

KNOWING A FEW BASICS ABOUT FOODS AND PHYSIOLOGY, AND HAVING SOME MENU IDEAS AT YOUR FINGERTIPS, CAN THWART INSULIN RESISTANCE.

Remember the low-carb craze? Unfortunately it's not yet a distant memory like the grapefruit or vanilla ice cream diets. Each decade brings a new diet rage that sells billions in books, packaged foods, and supplements. But each time, consumers eventually realize that the heart of the matter was the same as it has always been: that balance and moderation in dietary habits are healthier and easier to maintain than sticking to counting carbohydrates, eating cardboard-tasting protein bars, and weathering yo-yoing weight gains and losses.

Our culture has given us vast access to processed, refined, and ready-made foods, plus an increasingly sedentary lifestyle. Gone for most of us are the days of milking cows, tending crops, chasing the chickens, baling hay—activities that simultaneously gave us nutritious whole foods and physical exercise. Instead, our current habits of inactivity and calorie over-consumption have led to an epidemic of plump Americans: nearly two-thirds of adults and 15 percent of children were overweight in the 1999-2000 National Health and Nutrition Examination Survey; the number of overweight people has only increased since then, and many of them have insulin resistance.

Insulin resistance, also called Syndrome X or Metabolic Syndrome, is a condition of chronically high blood sugar (glucose), elevated bloodstream triglycerides, and associated health problems such as high blood pressure and heart disease. If not reversed, insulin resistance often progresses to diabetes mellitus type 2, the form of diabetes that accounts for 90 percent of cases (the other 10 percent are type 1, caused by autoimmune destruction of insulin-producing cells). According to the American Diabetes Association, seven percent of Americans have diabetes, and twice that many—about 41 million people—are in the pre-diabetic stage of insulin resistance. (In addition, about half of women with Polycystic Ovarian Syndrome are insulin resistant.)

Fortunately, most people with insulin resistance (and diabetes type 2) can improve or reverse their condition with *fad*-free, sensible eating and moderate physical activity. This article offers some background about insulin, plus some food basics we may have forgotten in the land of fad diets, that will help to prevent or reverse insulin resistance.

INSULIN AND SUGAR BASICS

Our bodies are well designed to deal with the flood of food molecules that a modest meal delivers to the bloodstream, thanks to insulin, a hormone released by the pancreas in response to eating. Glucose especially stimulates insulin release. Carbohydrates are made of glucose (or similar sugars that are converted to glucose in the body), so a high carbohydrate meal stimulates a surge of insulin release. Once in the blood, insulin stimulates cells such as muscle, liver, and fat to take in the glucose (and amino acids) from the meal for immediate use as an energy source to run the cells' activities, or to store it for later use.

In insulin resistance, cells don't internalize glucose effectively, so it lingers in the bloodstream long after a meal has been digested. The cause for the resistance, though complex (with a genetic component and a greater prevalence among people with an "apple"-shaped body, who store fat in the abdomen), stems from chronic over-eating. Cells become resistant to insulin's effects because they are exposed to it so often. The excess circulating sugar has substantial health repercussions over time. Many of the body's proteins become glycosylated (bound with sugar) and function poorly. They form free radicals that harm blood vessels, tissues, organs, and muscles, and accelerate the aging process. Recurrent insulin resistance may become full-blown diabetes with

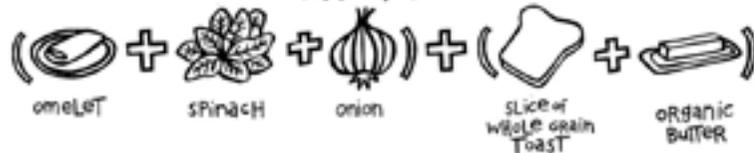
BY ILYSE SIMON ILLUSTRATIONS BY ANNIE INTERNICOLA

FOODS AND PHYSIOLOGY

THWART INSULIN RESISTANCE.

the very vegetarian

BREAKFAST



10 a.m. snack



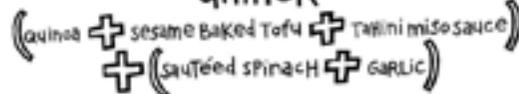
LUNCH

BIG SALAD WITH CHICK PEAS, AVOCADO, WALNUTS, SUNFLOWER SEEDS, ANNIES SHITAKE DRESSING & WHOLE WHEAT PITA

3 p.m. snack



dinner



9 p.m. snack



the no red meat eater

BREAKFAST



10 a.m. snack



LUNCH

SALAD niçoise OR CHICKEN fajita + TORTILLA + CHIPS + guacamole

3 p.m. snack



dinner



9 p.m. snack

organic whipped cream + berries

typical no time to eat "I eat out often" version

BREAKFAST



10 a.m. snack



LUNCH

(organic turkey sandwich + whole grain bread + lots of veggies) + black bean soup

3 p.m. snack

organic peanuts at desk + some green & black dark chocolate

dinner

organic turkey burger from the back of the freezer + sauerkraut + can of lentil soup

9 p.m. snack



Mr. Meat & potatoes plan

BREAKFAST



10 a.m. snack



LUNCH

grass-fed hamburger + 1/2 whole grain bun + mixed greens salad

3 p.m. snack

salmon jerky

dinner

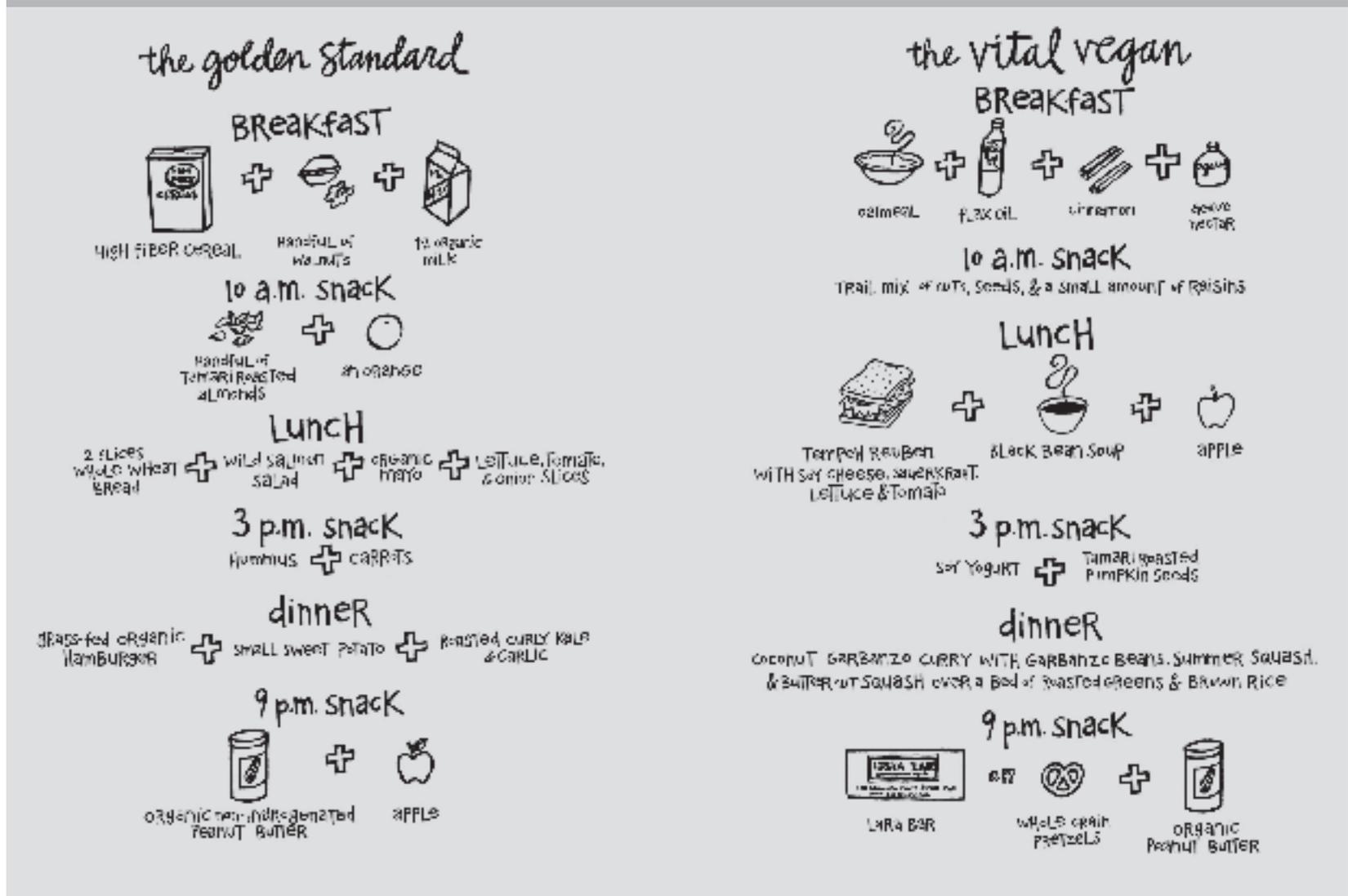


9 p.m. snack

dark chocolate + organic peanuts

FOODS AND PHYSIOLOGY

THWART INSULIN RESISTANCE.



its long-term correlates of high blood pressure, heart disease, arteriosclerosis, kidney failure, limb amputation due to poor circulation, blindness, and death.

GOOD FOODS WITHOUT FADS

Why is insulin resistance so prevalent? It's the SAD diet many have followed for years. That's Standard American Diet, a very sad diet indeed. When most of the food intake is white, refined, or processed, it's going to be high in carbohydrates, which means high in glucose. The SAD diet looks like sugar-sweetened cereal for breakfast, a sandwich of baloney and cheese on white bread with a soda for lunch, a quick candy bar snack, and turkey pot pie for dinner, with some Oreos on the sly. Or it might be a bagel with cream cheese and juice for breakfast, burger on a bun with fries for lunch, and pasta primavera for dinner. The white flour and sugar in these foods translate into glucose overload and high blood sugar. Over time, the SAD diet causes weight gain and then wreaks havoc with the body's glucose control mechanisms, causing insulin resistance.

One thing the low-carb fad gave us besides high meat consumption and remarkable vegetable restriction is to teach people to recognize carbohydrates. Unfortunately, they were taught to run from them. But what our bodies really need for proper control of blood sugar is a balance of carbs, protein, and fats. Many of us raised on the SAD diet have to learn this balance anew. Fortunately, doing so is not that hard!

The bottom line is that food comes in three categories: carbohydrate, protein, and fat. Our bodies need all three to be healthy. One is not better than the other, though the *quality* of each is vitally important.

Carbohydrates are an important source of fuel needed to run our bodies. Composed of glucose and related sugars, carbohydrates include sweeteners like table sugar and corn and maple syrups, as well as starches like potatoes, corn, legumes (beans), flours, and grains. Anything made from those ingredients is also a carbohydrate: every bread,

noodle, chip, cracker, or cereal. Fruits and juices are also carbohydrates because they contain fructose, a sugar similar to glucose.

There are non-starchy vegetables like leafy greens, broccoli, cabbage, summer squash, and onions that are not high in carbohydrates. They typically are rich in vitamins, minerals, and fiber (which helps keep food moving nicely through the intestine), so it's good to eat a lot of them. Also, fiber helps to slow down digestion, which in turn helps to slow the rate at which sugar, from the carbohydrates in a meal, enters your blood.

Proteins are part of every cell, and make up enzymes, antibodies, muscle, connective tissue, many hormones, and much more. As a food, proteins are more slowly digested than carbohydrates. A protein meal is digested into amino acids. As they gradually enter the bloodstream, they keep us from being hungry every hour. In relation to blood sugar, amino acids signal to the pancreas that food is on its way, initiating modest insulin release. No roller coasters here: eating protein helps our blood sugar stay in the healthy range.

Proteins come from many sources. We know that meats, poultry, and fish are high in protein, as are cheese and eggs. Certain plant foods also are rich sources of protein. Nuts, beans, and soy foods like tempeh are good protein sources and also contain fiber, which animal foods do not.

What about fat? Fat means butter, whole milk dairy foods, and oils. There is also a fair bit of fat in avocados, nuts, seeds, meats, and fish. Every cell in the body uses fats (also called lipids) in many different ways. Each cell's outer membrane, and many of its internal structures, are made of lipids, and lipids surround brain and nerve cells like insulation, making rapid signal transmission possible. We need fats for healthy skin and the production of steroid hormones. Essential fatty acids help cells be more responsive to insulin, and hence, better able to escort glucose out of the blood and into cells. Good quality fats include olive, fish, and flax oils; organic butter and dairy products; coconut oil; walnuts and almonds.

As with all foods, the key to eating fats is quality and moderate quantity. Fats to avoid are manmade “trans” fats like margarine. These are modifications of plant oils that are forced to accept more hydrogen atoms than they usually carry—in essence, they are morphed into a solid form. These hydrogenated fats have been correlated with increases in LDL cholesterol (the “bad” cholesterol associated with cardiovascular disease) and decreased HDL (“good”) cholesterol. Further, the higher the trans fats there are in the diet, the greater the likelihood of insulin resistance.

GETTING OFF THE BLOOD SUGAR ROLLERCOASTER

Why is it important to know about carbohydrate, protein, and fat? It can get you off the blood sugar rollercoaster and lessen your risk of insulin resistance and diabetes. If you can identify carb/protein/fat categories in the foods you eat, you can create a balanced menu as easy as cake (a carbohydrate!).

As you make plans for dinner or go down a buffet line, think about what each item contains. Some examples: roasted turkey is protein; the gravy is likely to be fat (since it’s typically made from the “drippings”); rice pilaf is carbohydrate; broccoli is a low-carb bundle of fiber and vitamins; cheese sauce for the broccoli is a little protein and some fat. And the lasagna? It’s one of those foods that has several components: the noodles are carbohydrate; the cheese and meat both have protein and fat.

Fats and proteins do not abnormally raise blood sugar, nor do carbohydrates in reasonable amounts in healthy people. But in high amounts, or in someone who is insulin resistant, carbohydrates make blood sugar go up and up and up. Remember, carbs are not bad. They give us energy. And the addition of fats and proteins helps to keep blood sugar steady.

The big picture is that we need carbohydrates in balance with other foods. Creating balance is simple if you follow these food guidelines:

Rule #1: Pair every carbohydrate you eat with some form of protein in similar serving sizes. That means every piece of whole grain toast (primarily carb) gets matched with a high protein source such as nut butter, an egg, or a piece of cheese. To balance cereal, add a handful of almonds.

Rule #2: Choose carbohydrates with fiber: whole wheat pasta over white, oatmeal instead of cream of wheat, sweet potatoes over Idaho spuds. Try an apple with your peanut butter instead of crackers: both apples and crackers are carbohydrates, yet fruits tend to have much more fiber than grains.

Rule #3: Have a protein snack between meals if they are more than four hours apart. That will help keep blood sugar and energy levels steady. This doesn’t mean eating a lot: it’s a handful of almonds, a thin slice or two of turkey, or a few slices of cheese. (Meals might become smaller,

as frequent snacking may make you less hungry.) Including some carbohydrate is fine, as long as you follow the above rules. So if you want popcorn, eat some peanuts or a piece of cheese as well. If you want crackers, choose a whole grain variety and spread them with hummus or nut butter

A pattern of meals and snacks might be: breakfast at 8am, lunch at noon, snack at 3pm, dinner at 6:30pm, and possibly a bedtime snack at 9:30pm if you are hungry. If you were to skip that 3pm snack you might be pretty famished and cranky by the time dinner rolls around, and moderation and balance will be the last thing on your mind. For times when you are really busy, keep a bag of nuts or a few energy bars with you, making snacking easy.

MAKING REAL MEALS

Now to put those rules into practice! Here are some examples of what to actually put on your plate at mealtime to maintain good blood sugar control. Portion-wise, your plate should look like this:



Half is low-starch veggies: stir-fried broccoli and snow peas, steamed kale, sautéed onions and peppers, etc. A quarter is protein and another quarter is carbohydrate: say, chicken and an equivalent amount of sweet potato, or three slices baked tofu and half a cup of brown rice.

The hardest part about eating for insulin resistance is remembering that *you can do it*. Given the fast food chains and prepackaged products that we’ve grown up with, eating a good balance of carbs, proteins, and fats doesn’t come naturally anymore. Cut out the page of menu suggestions that accompanies this article and put it on your refrigerator for inspiration. Eating nutritious foods in balanced proportions can eliminate the need for worrying about weight gain, help you to lose body fat and gain lean muscle, reduce sugar cravings and stave off insulin resistance, and help you feel great.

For motivational bedside reading, pick up a copy of *The Schwarzbein Principle* by Dr. Diana Schwarzbein, which further outlines steps to control blood sugar and, subsequently, your health.

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