There's no question that carbs can make you fat. But are bunless burgers the best alternative? Here's a healthier, and tastier, way to cut carbs.

BY WALTER C. WILLET, M.D.,
AND PATRICK J. SKERRETT

A middle-aged man, tired of being fat and having trouble losing weight, happens on a low-carbohydrate diet. He tries it for a few months and watches happily as the pounds slip away without the gnawing hunger and cravings that other diets have caused him. He writes a book that is a huge hit with the public, even though the medical establishment scorns it. The book is William Banting’s “Letter on Corpulence, Addressed to the Public.” It was published in London in 1863.

Imagine Banting’s delight if he could listen in on a 21st-century cocktail party. We’re still duly obsessed with our corpulence. And thanks to Dr. Robert Atkins, the cantankerous cardiologist who revived Banting’s theories in the 1970s, most people now assume that carbohydrates are part of the problem. We don’t “diet” anymore. We “go on Atkins,” trusting that bunless burgers will do for us what fat-free doughnuts never did. Our faith is not entirely misguided. It’s now clear that carb-rich foods can inflate appetite and foster type 2 diabetes, and that low-carb diets
promote short-term weight loss. But healthy eating is not quite as simple, or as boring, as living on fat and protein. The truth is, you can have your carbs and eat them, too. You just have to know how to choose them.

When Atkins came out against bread, potatoes and pasta 30 years ago, mainstream nutritionists dismissed him as a crank. Fat was the demon of the day, and carbohydrates were seen as their exorcist. That's still true today, at least according to the poorly built USDA Food Guide Pyramid. But many experts now believe that Atkins was at least half right in condemning carbohydrates. Last year five well-designed clinical trials indicated that low-carbohydrate diets were as good as low-fat diets—and in most cases better—for helping very overweight people shed pounds quickly. Study participants stuck better with low-carb diets than with low-fat diets. And though low-carb dieters increased their fat intake, they didn't suffer harmful changes in blood cholesterol. They enjoyed reductions in LDL (bad) cholesterol and triglycerides (fat-carrying particles associated with heart disease), and increases in HDL (good) cholesterol.

 Granted, short-term weight loss is not the best measure of a diet's ultimate value. There is still no clear evidence that Atkins-style diets are better than any others for helping people stay slim, and their broader health effects are still unknown. Will moderately overweight people enjoy the same improvements in triglyceride and HDL levels as the obese study participants? Could the abundant protein in an Atkins-style diet cause kidney damage or bone loss over time? These important questions deserve answers. But the case against carbs doesn't rest entirely on weight-loss trials. Other recent research shows that certain carb-rich foods can cause extreme surges in blood sugar and insulin surges that contribute to weight gain and increase your risk of developing diabetes and heart disease.

The Atkins diet, in its cruder variants, assumes that any food rich in carbohydrates will trigger this toxic cascade. But carbs differ greatly in their potential to do this. The key variable is the glycemic index, a ranking of foods according to how rapidly their sugars are released into the bloodstream. The body converts all digestible carbohydrates into glucose, the sugar that our cells use as fuel. When glucose molecules pass from the gut into the bloodstream, the pancreas releases insulin, a hormone that activates cells to absorb it. Muscle, fat and other cells then sponge the excess glucose from the blood, and insulin levels return to normal. The concept of a glycemic index emerged in the 1990s, when researchers at the University of Toronto showed that some foods (cornflakes or potatoes, for example) raised blood sugar faster and higher than others (oatmeal or brown rice), placing greater demands on the insulin system. That discovery led to an even more useful measurement called glycemic load, developed by a team from the Harvard School of Public Health. It takes into consideration both a food's glycemic index and how much carbohydrate the food delivers in a single serving. Most fruits, vegetables, beans and whole grains have low glycemic loads; their sugars enter the bloodstream gradually, triggering only a moderate rise in insulin. But when fruits are squeezed into juices, or grains are pulverized into fine flour, they become the equivalent of sugar water.

After a snack or meal with a high glycemic load, blood-sugar levels rise higher and faster than after a meal with a low load. The insulin needed to stuff all that sugar into muscle and fat cells also blunts the activity of glucagon, a hormone that signals the body to burn stored fuel when blood-sugar levels fall below a certain point. Glucose levels plummet as a result, leaving the brain and other tissues starved for energy. Concentration flags, muscles

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**LUNCHTIME:**

You don't have to skip the bread to stay slim. Try whole grains.
Separating the Good Carbs From the Bad

Processed carbohydrates tend to have a higher ‘glycemic load’ than unprocessed ones. They deliver a quick jolt of sugar to the body that leaves you only more hungry when it fades. Some suggestions:

<table>
<thead>
<tr>
<th>OLD FAVORITES</th>
<th>Glycemic load</th>
<th>BETTER BETS</th>
<th>Glycemic load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bagel, white, frozen, 70g</td>
<td>26</td>
<td>100% whole-grain bread, 30g</td>
<td>7</td>
</tr>
<tr>
<td>Instant Cream of Wheat, 250g</td>
<td>22</td>
<td>Oatmeal, 250g</td>
<td>13</td>
</tr>
<tr>
<td>Corn flakes, 30g</td>
<td>21</td>
<td>All-Bran cereal, 30g</td>
<td>4</td>
</tr>
<tr>
<td>Grapefruit juice, 250g</td>
<td>11</td>
<td>Grapefruit, 120g</td>
<td>5</td>
</tr>
<tr>
<td>Macaroni and cheese, 160g</td>
<td>32</td>
<td>Fettuccine, 180g</td>
<td>16</td>
</tr>
<tr>
<td>Cranberry-juice cocktail, 250g</td>
<td>24</td>
<td>Club soda, 250g</td>
<td>0</td>
</tr>
<tr>
<td>White rice, 150g</td>
<td>23</td>
<td>Brown rice, 150g</td>
<td>18</td>
</tr>
<tr>
<td>Corn chips, 50g</td>
<td>17</td>
<td>Popcorn, 20g</td>
<td>6</td>
</tr>
<tr>
<td>White spaghetti, 180g</td>
<td>27</td>
<td>Whole-meal spaghetti, 180g</td>
<td>16</td>
</tr>
<tr>
<td>Baked russet potato, 150g</td>
<td>26</td>
<td>Baked beans, 150g</td>
<td>7</td>
</tr>
<tr>
<td>Vanilla cake, frosting, 111g</td>
<td>24</td>
<td>Banana cake, no sugar, 60g</td>
<td>16</td>
</tr>
<tr>
<td>Fanta orange soft drink, 250g</td>
<td>23</td>
<td>Unsweetened apple juice, 250g</td>
<td>12</td>
</tr>
</tbody>
</table>

HOW CARBS AFFECT THE BODY

Foods with high glycemic loads spur insulin production, affecting long-term health. Foods with low glycemic loads reduce insulin levels and elevated insulin levels lead to excessive snacking—and calories.

Foods with a high glycemic load pose another problem for a growing number of Americans. The tissues of people who are overweight or physically inactive resist insulin’s signal to pull in glucose from the blood—a condition known as insulin resistance. This keeps blood sugar at high levels for longer periods. It also forces the pancreas to produce extra insulin in order to jam glucose into cells. Overworked insulin-making cells can wear out and cease production, leading ultimately to diabetes.

The good news is that you needn’t swear off carbohydrates to avoid these problems. The trick is to choose foods with low glycemic loads. As you can see from the table at health.harvard.edu/newsweek, a serving of orange juice has nearly three times the glycemic load (13) of an orange (5), and a serving of corn flakes carries five times the load (21) of a serving of All-Bran (4). Whether you’re shopping, cooking or ordering out, it’s wise to focus on foods that fall into the low teens and below, and to save those at the high end for the occasional snack or meal. But you don’t have to carry a food chart to eat wisely. Here are some rules of thumb for choosing the best carbs:

1. **Eat Plants.** Eat whole, most fruits and vegetables have a modest effect on blood sugar and insulin. They also deliver fiber and other healthful nutrients. Starchy vegetables such as potatoes and corn have high glycemic loads, so use them sparingly. And don’t count fruit juices as fruit servings. Most fruit juices contain too little fruit, too much sugar and too many empty calories.

2. **Bank on Beans.** They’re an excellent source of protein. They’re rich in fiber, vitamins, minerals and other micronutrients. And they generally have a small effect on blood sugar and insulin.

3. **Go Nuts.** Almonds, hazelnuts, peanuts, pecans, pistachios and walnuts are great low-carbohydrate alternatives to crackers, chips or pretzels made with refined flour. Walnuts also have heart-healthy omega-3 fats. Keep in mind that at 185 calories an ounce, eating a handful of walnuts a day without cutting back on anything else could make you gain 10 pounds or more during the course of a year.

4. **Choose the Best Fats.** Fats tend to slow the passage of food from the stomach to the intestine. So eating good fats with a carbohydrate—olive oil with bread, for example—can curb increases in blood sugar. Good fats are unsaturated fats, such as those found in vegetable oils (olive, canola, peanut, corn, soybean), fatty fish, nuts and avocados.

5. **Switch to Whole Grains.** Until the 19th century, humans ate grains either whole or roughly ground. In this form, grains offer a carbohydrate package rich in fiber, healthy fats, vitamins, minerals, plant enzymes and hundreds of other nutrients. Today’s refined grains—white bread, white rice and many breakfast cereals—have a higher glycemic load. Fortunately, whole grains are making a comeback. There are at least a dozen options, from brown rice and cracked wheat to quinoa and spelt. Make a habit of starting the day with a bowl of whole-grain cereal. If you’re partial to hot cereals, try old-fashioned or steel-cut oats or Kashi. Quick and instant oatmeal is also fine, but they have higher glycemic loads. If you’d rather have cold cereal, the less glycemic ones include Wheaties, Great Grains, Wheat Chex and Grape-Nuts. And don’t give up on pasta. Whole-wheat pasta is now more widely available. If you don’t like the texture, try one that is half whole-wheat flour and half white flour.

Can you eat all these carbs and still lose...
medium rare—and hold the prions!

should atkins fans worry about the recent discovery of mad-cow disease in a u.s. herd? they shouldn’t ignore it completely. the prions (infectious proteins) responsible for mad cow can cause a fatal brain disease in people who eat infected animals. the odds of contracting it from any given hamburger are infinitesimal. but if you’re concerned, there are steps you can take to lower the risk even further. some tips:

skip the head and bones
muscle meat is generally safe, but cuts containing nerve tissue are more likely to harbor infectious material. so steer clear of brain—chefs and cuts that are sold on the bone.

think twice about sausage
the machine scrapings used in packaged hot dogs, bologna, salami and meatballs are drawn from numerous animals and may contain spinal tissue.

consider buying organic
beef bearing the usda organic label is raised and processed under conditions that minimize the risk of infection.

willett and skerrett are the authors of “eat, drink and be healthy,” published by simon & schuster. for more information, go to health.harvard.edu/newsweek.

exercise
insights from harvard medical school

fueling for performance

by nancy ferrari

for all the bad press they receive, carbohydrates do serve a purpose: they provide ready energy in the form of blood glucose. when you’re parked in front of a tv screen, it’s easy to consume more energy than you burn. for athletes, the challenge is to keep enough fuel in the furnace. the body can store small amounts of carbohydrates in the liver and muscle tissue in the form of glycogen, but an hour of intense exercise can wipe out glycogen stores. when that happens, stamina flags, speed and intensity waver and enthusiasm plummets—a syndrome marathoners call “bonking.” even if you’re not training for the ironman, eating the right carbs at the right times can improve your workouts and boost your physical performance.

before your workout: if you are heading out on a short run, just grab a light snack a few minutes before you start. if you’ve got a longer workout on tap (an hour or longer), you should eat an hour or two before you get start—
ed. and if you’re planning a high-intensity workout (interval training or sprints), it’s best to wait three hours. the delay gives your muscles more time to store glycogen. to max out their glycogen stores, endurance athletes may load up on carbs for a week before a big event, while exercising less.

a good preworkout guideline is to eat a half gram of carbohydrate for each pound of body weight (for example, a 120-pound woman would choose a snack containing 60 grams of carbs). foods with a lower glycemic load

willett and skerrett are the authors of “eat, drink and be healthy,” published by simon & schuster. for more information, go to health.harvard.edu/newsweek.

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