>> SPECIAL REPORT WHY YOU SHOULD TRUST CREATINE—NOT YOUR TV

HIGH ENERGY SPORTS NUTRITION

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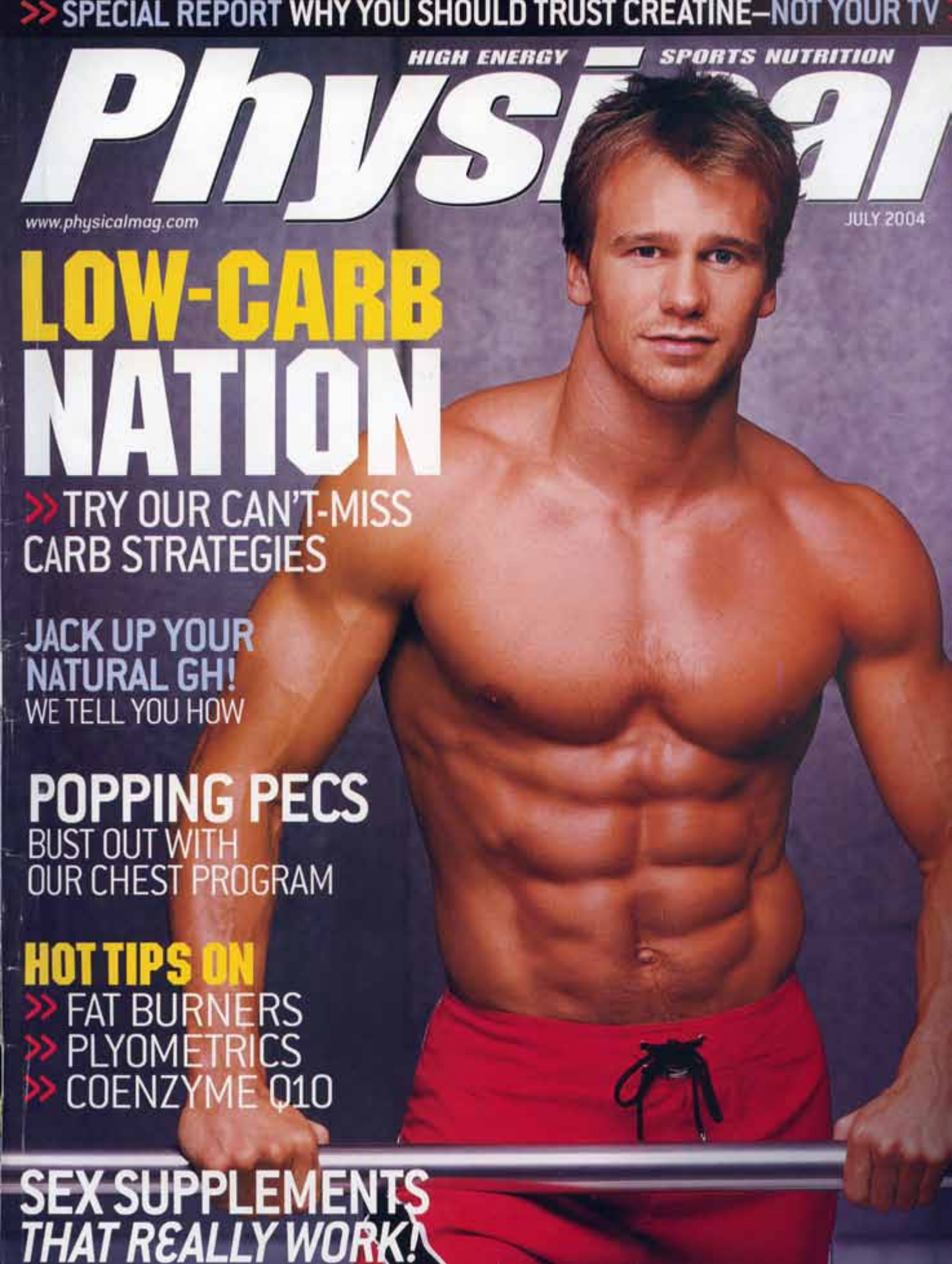

LOW-CARB NATION

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POPPING PECS

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LOW-CARB

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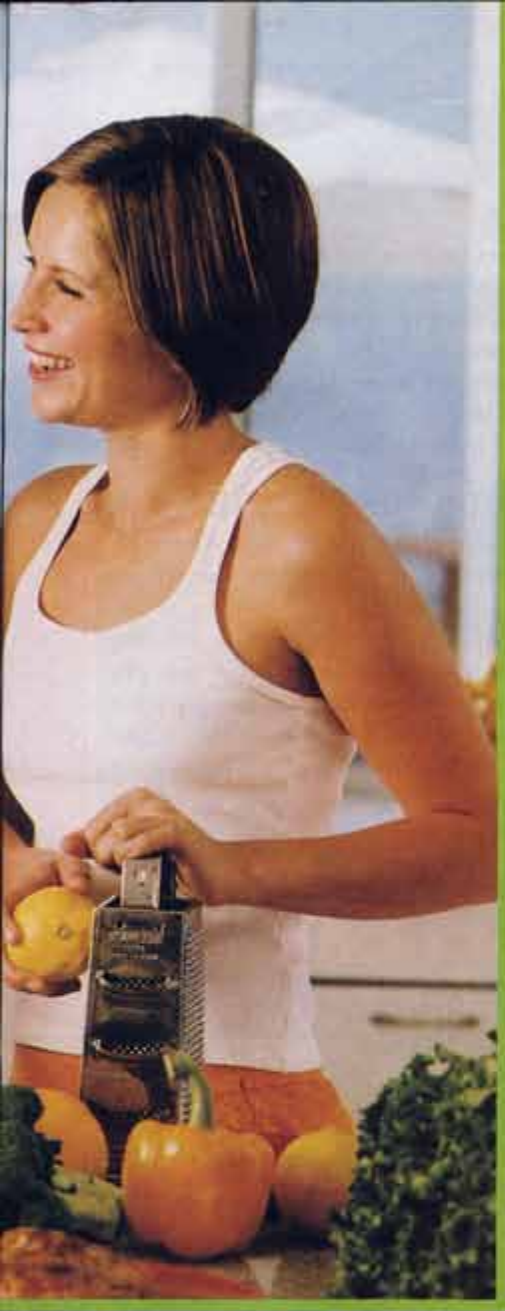

IF YOU HAVEN'T HEARD OF THE LOW-CARB TREND, we dare say you've been living under a rock — or a pile of rock candy. It has been hard to miss the constant media salvos fired between the traditional pro-carbers and the ever-growing militia of low-carb commandos. Each side has both its advantages and its drawbacks, and like any conflict, the truth lies somewhere in the middle.

The idea of eating fewer carbs is intriguing, especially since increasing numbers of studies are lauding its merit. The fact is, even intense athletes who need carbs to fuel their hard training can reap the benefits of moderating their carb consumption. Whether you're a powerlifter, bodybuilder or triathlete, manipulating your carb intake can lead to better performance, higher energy levels and a more chiseled physique. Read on to find out how.

BY LINDA FORMICHELLI

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Before you kick your carbs to the curb, take a look at some important nutritional tips.

UPPER AND LOWER GI

For years, we've been urged by experts to follow a low-fat, high-carb diet, and yet obesity in this country is increasing faster than your server can say, "Would you like a refill?" "A low-fat, high-carbohydrate approach has failed in helping people lose weight and keep it off," observes Stuart Trager, MD, a consultant for Atkins Nutritionals.

To understand, first you need to know about the glycemic index (GI). The GI calculates how quickly and how high your blood-sugar level rises after eating enough of a carbohydrate to equal 50 gm. Researchers give the food to test subjects and compare the rise in blood sugar to what occurs after eating 50 gm of white bread or glucose (which have a GI score of 100).

HIGH GI = MORE FAT

Foods that are high on the glycemic index cause blood sugar to rise rapidly, and insulin is released to help use the sugar as energy or store the excess as fat. Emerging research demonstrates that the rapid rise of insulin caused by high-GI foods, such as refined carbs, increases the storage of fat. "When you have high levels of insulin, your body's not using fat as a source of fuel," explains Molly Kimball, RD, a sports nutritionist for Ochsner Clinic's Elmwood Fitness Center in New Orleans. In addition, these foods cause blood sugar to spike and then crash, leaving you ravenous and ready to overeat. Protein and fat, on the other hand, keep you fuller for a much longer period of time.

LOW GI = BIGGER MUSCLES

Not only do high-GI foods contribute to making you fat, they also conspire to steal your muscle. According to Trager, controlling carbohydrates may increase the bioavailability of certain anabolic hormones (such as testosterone) by limiting the amount of circulating cortisol. "A controlled-carbohydrate lifestyle lowers levels of cortisol, which is antagonistic to testosterone," he explains. Since the storage of glycogen results in excess water retention, reducing the amount of carbohydrate consumed will help decrease water weight as well as body fat, while preserving lean body mass.

CONTROLLED-CARBS FOR ATHLETES

This is all great for the average couch-mushroom American. But what about serious lifters and other athletes who rely on carbs for energy?

With some modifications to address your athletic lifestyle, you can still benefit from regulating your carbs. For example, you can switch from high-glycemic carbs to low-glycemic carbs, such as whole grains, which do not cause blood-sugar levels to rise as rapidly. "In the Atkins plan, it's possible for athletes to skip the first [very low-carb] phase and go right to the maintenance phase, which emphasizes nutrient-dense

THE PERPLEXITY OF COMPLEXITY

What happened to good old-fashioned "complex carbs?" This was the thinking-man's choice of carbs. Generations of legendary Olympic and professional runners, swimmers and tennis players lived on the stuff. Unfortunately, the phrase "complex carbs" has gone the way of Bjorn Borg's wooden racquet.

Complex carbohydrates get their name due to the length of their sugar molecules, which are strung together to form longer, more involved chains than those found in simple carbs, otherwise known as sugars. Natural fibrous foods, such as vegetables, grains and legumes, are complex carbs, and such foods also tend to have a low GI. But that doesn't mean that all complex carbs are low-GI. For example, a baked potato has a GI of 94, rice cakes rank 84, Total cereal is 75 and even some wheat bread is 69. Take a look at our list of foods on Page 56 to make sure you don't confuse complex carbs with low-GI carbs. —Mike Carlson

whole foods," says Trager. "We've changed the thinking dramatically and offer people of all nutritional needs significant benefits."

BEFORE A WORKOUT

Many athletes rely on simple carbs before exercising for a quick burst of energy, but this can be a mistake, according to Susan Kleiner, PhD, RD, author of *Power Eating* (Human Kinetics). "In short order, your insulin goes up, it takes the glucose out of your bloodstream, and then your blood sugar drops while you're trying to exercise," she explains. This can lead to fatigue just when you need energy. Kleiner suggests having low-glycemic carbs (whole-grain breads or crackers, oatmeal, nonfat dairy products) before exercising to give you energy while keeping blood-sugar levels relatively stable. For more staying power, add peanut butter to those crackers, or turkey to the bread for a protein boost.

AFTER A WORKOUT

During the recovery period, on the other hand, you need quick-acting carbs. "In that window right after you exercise, the body tends not to store excess calories as fat, but uses it to build muscle glycogen and to help muscles grow," says Trager. So if you want to eat a food high on the glycemic index, such as a smoothie or a candy bar, the first 15 to 20 minutes after your workout is the time to do it. Because of hormonal levels present at this time, excess calories are less likely to be stored as fat, and instead will fuel muscles and help encourage faster recovery.

WHAT YOU SHOULD EAT

OK, so now you know that high-glycemic carbs should be restricted to certain periods. But what foods should you be piling on your plate the rest of the time?

FRUITS AND VEGETABLES: Even though vegetables contain a modicum of carbohydrate, the treasure trove of antioxidants, phytochemicals, fiber and vitamins make them too valuable to pass up. In fact, Trager suggests eating lots of them. "One of the benefits of exercising is that carbohydrate intake can likely be greater than for those who don't exercise," he says. Trager advises choosing nutrient-dense foods that are high in fiber, and vegetables fill the bill. "I'm a believer in having an unlimited amount of vegetables," he says.

You should also focus on nutrient-dense fruits that are packed with fiber. "It's about making smart fruit choices," explains Trager. "You should choose lower-glycemic-index fruits." Some good choices for low-GI fruits are plums, cherries, grapefruit and apples.

"GOOD" FATS: Your body needs essential fatty acids (EFAs) for almost every bodily process, from brain cell function and nervous system operation to digestion and hormonal activity. But many Americans eat a diet high in hydrogenated and partially hydrogenated oils, which contain trans fats and have been linked to cardiovascular disease and diabetes. Partially hydrogenated oils are found in most snack foods (chips, crackers, cookies) and fried foods. Replacing snack foods with natural low-glycemic carbs will eliminate many of these "bad" fats from your diet. To increase "good" fats, use flaxseed, olive and canola oils for cooking instead of the hydrogenated or partially hydrogenated oils, include cold-water fish (salmon and mackerel) in your diet, and supplement with EFAs, such as flaxseed or fish oil capsules.

LEAN MEATS AND FISH: Since meat is key in most low-carb lifestyles, be sure that the ones you eat are lean. Chicken breast, of course, is a good choice, with 3 gm of fat per 3 oz. Oven-roasted turkey breast can be even leaner. But if you can't face one more piece of poultry, you should know that some cuts of beef rival chicken on the low-fat front. For example, 3 oz of top round and eye of round beef has 4.2 gm of fat. Lean ground beef (95%) has 5 gm of fat per 3 oz. And deli-sliced roast beef has just 3 gm of fat per 3 oz.

For protein plus healthy EFAs, fish works out swimmingly. Canned tuna, salmon or crab are easy options if you don't feel like breaking out a pan. If you're not wild about these choices, get wild with exotic meats, such as buffalo or ostrich. Ostrich tenderloin has about 3 gm of fat per 3 oz, while 3 oz of water buffalo meat has just over 1 gm of fat.

Manipulating your carb intake can lead to better performance, more energy and a chiseled physique.

THE GHOST CARB

Low-carb bars, shakes, sports drinks and powders can be a big help when you're counting carbs. However, you may be baffled when you look at the nutrition labels on low-carb supplements: You have "carbs," "sugar," "sugar alcohols" and "net carbs." So what's the deal?

Many low-carb supplements, especially bars, contain sugar alcohols, such as maltitol, sorbitol or glycerine (also called glycerol). These are thick, odorless, sweet-tasting syrups that help keep bars moist and palatable. (It would take a lot of fat and sugar to accomplish the same trick.) For a long time, researchers weren't sure how to categorize glycerine. It's not a fat because it lacks key fatty acids; it's not a protein because it doesn't contain an amino group. Glycerine is structured differently from carbohydrate, but the only choice left is rewriting nutrition labels or calling it a carb. While a gram of glycerine has approximately the same caloric value as a gram of carbs (four calories), glycerine has negligible effects on blood-sugar and insulin levels, the true priority behind a low-carb plan.

Protein powders are a big help when counting carbs.

Even so, the U.S. Food and Drug Administration recently required food manufacturers to count glycerine as a carb on food labels. "The bar may previously have said it had 3 grams of carbs, but now it says it has 20 grams," says Kimball. "So I usually tell my clients to look at the sugars and keep them below 5 grams." If it's provided on the label, you can also look at the "Net Carbs" amount to see its potential effect on your blood-sugar and insulin levels.

CARB-O-RATER

Carbohydrates are burned for energy, and athletes need energy. So how do active individuals reduce carbs without losing steam? Throughout the day, they choose nutrient-dense carbs that are low (0 to 39) on the glycemic index (GI); immediately after training, they need high-GI (60 to 100) carbs.

FOOD	GLYCEMIC INDEX
BREADS AND GRAINS	
Bread, white	72
Bread, wheat	69
Rice, white	72
Rice, brown	66
Spaghetti, white	50
Spaghetti, wheat	42
FRUITS	
Apples	39
Bananas	62
Oranges	40
Raisins	64
VEGETABLES	
Beets	64
Carrots	92
Corn on cob	59
Potatoes	70
MISCELLANEOUS	
Candy bar	68
Honey	87
Peanuts	13
Potato chips	51
BREAKFAST CEREALS	
All-bran	51
Corn flakes	80
Oatmeal	54
Shredded Wheat	67
LEGUMES	
Baked beans	40
Lentils	29
Soybeans	15
DAIRY	
Milk, skim	32
Milk, whole	34
BEVERAGES	
Apple juice	41
Soft drinks	68
SUGARS	
Fructose	20
Glucose	100
Maltodextrin	105
Sucrose (table sugar)	59

Source: Tuttle D *50 Ways to Build Muscle Fast* (Avery)

WHAT THE FRUC?

If you've never heard of high fructose corn syrup, you need to wake up and smell the chemicals. After all, as an average American, you ate 55.3 lb of the stuff last year.

Since the early 1970s, high fructose corn syrup (HFCS) has slowly overtaken natural sweeteners, such as sugar and honey, and can now be found in everything from soda and beer to bacon and beef jerky. It is produced by a complicated three-step process that uses different enzymes to turn corn starch into glucose, and then processing the glucose to produce fructose. The advantages for manufacturers is that HFCS is cheap, has a long shelf life and is easily transportable, since it can be pumped into tanker trucks like so much petrol. Unfortunately, the disadvantages lie with you, the consumer.

Researchers from the University of Beltsville, Md., found that a high-fructose, high-carb diet combined with low levels of dietary copper led to heart-related abnormalities and shockingly high mortality rates in tests performed on rats. Additionally, a high-HFCS diet was also linked to adult-onset (type 2) diabetes, since HFCS reduces stores of chromium, a mineral that helps balance insulin levels.

While it's nearly impossible to avoid HFCS altogether, its dangers seem negligible in small amounts. To limit your intake, and its negative effects, try the following nutritional tweaks.

SUPPLEMENT: Experts recommend up to 200 mcg of chromium a day for an active man or woman, regardless of HFCS consumption. A daily multivitamin/mineral is also a smart nutritional insurance policy that, along with a healthy and varied diet, will cover your daily copper requirement of 1 to 2 mg.

SLASH SWEETS: Sodas and processed fruit juices (those labeled "cocktail," "-ade", "drink," etc.) are loaded with HFCS. Combining HFCS with junk foods that contain other sugars, such as sucrose, can exacerbate the damage.

EAT WHOLE FOODS: Natural foods not only contain zero HFCS, they are also good sources of the minerals you may need. Legumes, peanuts, mushrooms and soybeans are good sources of copper, while broccoli, spinach and wheat germ are rich in chromium.

—Mike Carlson

THE FRIENDLY CARB

When you're checking food labels for carb content, be sure to subtract fiber from the carb count to arrive at the net carb content if it's not listed. For example, if a food has 20 gm of carbs and 5 gm of fiber, then you should count that food as having 15 gm of carbs per serving. That's because fiber passes through the body undigested and therefore has no effect on blood-sugar levels. Fiber also helps lower the overall GI (collectively known as the glycemic load) of a meal. If you must eat a high-GI food, combining it with fiber (as well as fat and protein) can blunt its negative effect. Both forms of fiber (soluble and insoluble) possess valuable health benefits, but soluble fiber also helps regulate blood-sugar levels. White rice and white bread are almost devoid of fiber, while whole wheat tortillas and breads, fruits, vegetables, oat bran, legumes, flaxseed and fiber-rific grains, such as quinoa, are more acceptable. (If the label shows "Net Carbs," the manufacturer has already made the subtraction.)

UNDER THE CARB WIRE

Use these tips as a guideline and adjust them to fit your own lifestyle. Says Trager, "The key is personalization. That's what makes the controlled-carb approach so valuable — it's customizable to fit a variety of needs and lifestyles." By moderating your carb intake and making some smart food choices, you can use this strategy to reduce your body fat and preserve lean muscle mass — while eating foods that taste good, are filling and provide the calories you need to live an active lifestyle. ◆

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