

All carbohydrates are sugars

Whether a carbohydrate is sweet (like table sugar or in fruit) or not (such as in bread or vegetables), all carbs are made from sugar. Sugar chains more than 2 sugar molecules long are not sweet on the tongue, whereas single sugars and pairs of sugars are sweet. Fruit is not sweet before being ripe because the sugars have not broken down into the individual sugars yet. Usually the single sugars and pairs of sugars are simply referred to as “sugar” whereas longer chains are referred to as “complex carbs.”

Complex carbs are not healthier than simple carbs or “sugars.” Without fiber, complex carbohydrates, such as pasta, white bread and rice, digest so fast that the resultant sugars enter your bloodstream nearly as fast as if you had eaten sugar. Eating a bowl of plain white pasta is like eating table sugar but without the benefit of enjoying the sugar. Neither is advisable.

Fiber slows down digestion, so when you eat carbs (whether complex or not), the sugar enters the bloodstream slower, reducing body fat and increasing health.

Do not let people fool you into thinking that “complex carbs” are healthy. The US population has become dramatically over-weight using the mind-set that complex carbs are ok, and even healthy, to eat.

Fiber is what is healthy. Vegetables and to a lesser extend fruit and whole grains.

Fiber is also made from sugar, but the chemical structure is slightly different so it does not bind to digestion enzymes in our intestines. As a result, we can't break it down and it slows down the digestion process, which is good! Fiber also comes with the majority of the vitamins and antioxidants (phytonutrients) so eating foods low in fiber not only increases obesity but they increase the chances of other disease states such as cancer.

Do NOT juice your food, whether that be fruit or vegetables or anything else. BLEND IT. Keep all the fiber and consume it. The pulp left behind in the juicer contains most of the health value. And using the pulp to make bread just breaks down the nutrients with heat in the oven. You need the original fruit and vegetables, not just the sugary watery part.

If you cook (a few minutes microwave or steaming) vegetables this helps break down the cell walls of the plant so that the nutrients inside become more bioavailable, increasing the health value of the vegetables. If you cook vegetables any more than this, you are just breaking down the nutrients with no more benefit from cell wall break down because the cell walls have already broken down as much as they are going to. Boiling vegetables leaches more nutrients out than microwaving or steaming. Microwaving food does not mutate it; it simply vibrates the water molecules inside to heat up the food.

You must put an emphasis on vegetables

If you do not eat at least $\frac{1}{4}$ the volume of your lunch and dinner as vegetables you are either over-eating or you are hungry, or both. It is not possible to optimize health and recovery without the full spectrum of nutrients and antioxidants contained in vegetables. Whole grains (bread, etc) and fruit have twice as many calories and half the nutrient density per gram compared to vegetables. In order to achieve the nutrient intake you need without vegetables you therefore must eat many more calories of whole grains and fruits than you would need to eat in vegetables, increasing your total caloric load and the number of calories going to fat cells. In addition, the fiber content of vegetables dramatically increases satiety so without them in your meal you eat more calories, and spike your blood sugar and insulin levels (which drives down blood sugar) so that you eat even more in the hours after your meal or at your next meal. Regardless of whether your goals are body-fat loss, recovering from injury, preventing disease, running a marathon or lifting 500 lb, you will not succeed in a sustainable way unless vegetables are included in at least two meals per day in a relatively large amount ($\frac{1}{4}$ the total volume of your meals). Do whatever it takes. There is no excuse for not eating salad when the cost of a salad is less than buying better gas for your car (do you value your health and performance less than the that of your car?) and when the time you take to make and eat the salad may increase your life span by several years (do you REALLY not have the time to eat salad when excluding it may significantly shortening your life?).

How to achieve your required vegetable intake

- If ordering a sandwich always ask for extra vegetables
- If eating in a restaurant always order a salad
- If you don't have time for salad then blend vegetables in your blender drink it

Making simple salads that will make you a powerhouse of health and performance

- Buy 1 bag pre-washed spinach and 1 bag pre-washed mixed greens
- Put 1 hand full of each into a bowl and 1 hand full of each into a Tupperware
- Pull your "salad box" (see next line) and put several types of vegetables into each salad
- Contents of the salad box: Your choice of tomato or red pepper, red cabbage or beets, broccoli or kale, zucchini or cucumber, carrot, and any other dark colorful vegetables. Having several different things in the salad (not just greens) is important.
- The Tupperware salad is for your next meal; cover it and put into the fridge
- The salad in the bowl is for eating right away with the current meal
- Add a healthy fat source to the salad being eaten right away; $\frac{1}{3}$ to $\frac{1}{2}$ medium avocado, 1.5-2 Tablespoon vegetable-based dressing or about 8 olives. Adding tofu or fish to salad adds both healthy fat and protein, making the salad a complete meal if you have a slice of bread on the side.
- Do not add fats to the salad for the next meal (which might not be until the next day) because avocado gets brown and dressing makes lettuce wilt i.e. put on the fat in the few hours before eating it. This might mean putting the fat source on the salad in the morning before taking it to work to be eaten before going out to lunch.

How to choose a breakfast cereal

The BEST cereals contain NO artificial sweeteners, NO high fructose corn syrup and have EITHER

- (1) At least 20% (1/5) of their carbohydrate grams as fiber with less sugar than fiber OR
- (2) At least 15% of carbohydrate as fiber with NO added sugar (pure grains, oats).

In either case, glycemic load (rate of sugar entry into the bloodstream) is low because fiber is high, and when sugar is present the fiber content is even higher. These guidelines eliminate nearly all cereals on the shelf. For example, to meet the guidelines of (1), a cereal with 20 grams of carbohydrate per serving would have at least 4 grams of fiber, LESS THAN 4 grams of sugar, and contain no aspartame or other artificial sweeteners. Read the labels; you will be shocked at the ingredients of cereals that seem healthy at first glance. Cereals I have found that meet these requirements include Uncle Sam Cereal (with added flax; unfortunately it tastes like cardboard), one of the cereals made by Kashi ('GoLean,' which tastes the most like sweetened cereal in this list so choose this one if you have a hard time with foods that taste "healthier"), one by Trader Joe's ('Hi Fiber Cereal') and three by Nature's Path ('Heritage Flakes,' 'FlaxPlus Multigrain' and '8 Grain Flakes'). My personal favorite of all dry cereals in terms of health value and taste is Heritage Flakes. I eat this when traveling for breakfast and in a zip lock bag with dried fruit and nuts as a snack. At home I eat oatmeal with almonds, fresh fruit and milk for my first breakfast.

To meet the guidelines of (2) above, eat oatmeal, which contains 27 grams of carbohydrate with 4 grams fiber and zero sugar and no artificial sweeteners. There are several other good whole-grain hot cereals such as Hodgson Mill's Multi Grain with flax and soy.

Add almonds or walnuts to any cereal (hot or cold) for a healthy fat source. The amount of healthy fats in cereals is too low even when almonds or other nuts are in the ingredients (you want around 25% of your total calories per meal to be healthy fats). Also add milk or soy milk as a protein source and fruit such as berries, apple, or a SMALL banana (small for reasons described below). Do not use sweetened soy milk.

Eating a breakfast consisting entirely of cereal and milk, even when the cereal is made from whole grains (such as Cheerios and Shredded Wheat) still puts a lot of carbohydrate into your body relatively quickly and can therefore result in lower energy and greater hunger 1-2 hours after breakfast as well as higher body fat levels. Slow the digestion process down with healthy fats, some protein (the milk) and high-fiber fruit. Bananas are a high-glycemic index fruit so you should buy small bananas so your intake per meal is limited. That is not to say that you should not eat bananas. I eat a banana almost every day, but I do so with high-fiber foods, healthy fats and some protein. I do not eat bananas by themselves and I do not buy large bananas.

How to choose bread & other baked goods

Most baked goods are made predominantly from refined carbohydrate (white flour). Some contain just a bit of whole grain and make sure to let you know by advertising the words “whole grain” in large letters even if there is very little in them. Others, such as tortilla chips made from corn, are made from the entire corn kernel and are therefore technically “100% whole grain” but actually digest very quickly and are low in fiber so that their health value is little more than white flour. Health comes from the majority of the grain being whole and the grains being used having a high fiber content. Such products will have 10-15% of their carbohydrates as fiber, meaning that if you look at the label you will have 1-1.5 grams of fiber for every 10 grams of carbohydrate. Besides corn, whole grains are typically high in fiber, so buying products that are “100% whole grain” will almost always provide you with the benefits you are looking for. Other terms in the ingredients of baked goods that you should be familiar with are:

- **Wheat flour:** The flour is made from wheat, which includes white refined flour. It is misleading because some people believe “wheat flour” means “whole wheat flour” but it does not. Occasionally a bread will be made from whole wheat and just list it as “wheat flour” but this is not generally the rule. If a bread is made from whole grains around 15% of the carbohydrate content will be fiber, and if bran is added the fiber content will be even higher.
- **Unbleached flour:** After the grain was stripped of its fiber and nutrients it was not whitened with benzoyl peroxide, chlorine gas, chlorine dioxide or potassium bromate. These bleaching agents in general do not remain in the flour because of volatility, but there are potential health issues with their use. Potassium bromate, for example, is a suspected carcinogen and has been banned in Europe, Canada and Japan, but in the US it can be added to foods and only in California is it required to be listed in the ingredients. It is known that the bleaching agents reduce the nutrient content of flour from low to lower (an example of dumb to dumber) by destroying what few vitamins remain. Pastry and other bright white baked goods are in general made from bleached flour, sugar, saturated fat and very often trans fat. I myself occasionally eat pastries, particularly when I am traveling somewhere and there are regional specialties I can not get anywhere else, but is interesting to think how much the body suffers from such food so that the brain can get a “happiness signal” from the sugar and fat being on the tongue for a minute or two.
- **Enriched flour:** The grain has been stripped of its fiber and nutrients, and then vitamins and minerals have been added back in. This is required by the government because stripping the nutrients out of grain leaves bread so deficient in health value that neural tube birth defects become more prevalent. Thus, folic acid and other nutrients, must be added back into the flour. It is nice that birth defects are reduced, but there is little benefit to health beyond this. Using the whole grain avoids the entire problem, promotes health and actually tastes better given the chance.

My recommendation is to only buy breads that are made entirely of whole grains. These breads will have the word “whole” in front of every grain in the ingredients. Note that brown breads that have a spongy consistency like white breads are often made to be brown by adding molasses. Baked goods other than bread made entirely from whole grains that are available in stores include pita bread and tortillas. If you are interested in eating baked goods that are not available as 100% whole grain (such as bagels, muffins, etc.), do the best you can and buy the product with the highest fiber content (i.e. with the most whole grain possible or with added bran).

Of the baked goods made from whole grains, the ones with the COURSEST grains (coarsely ground, not finely ground) digest slower and are therefore significantly healthier than finely ground whole grain products. Finely-ground whole-grain products include whole grain breads that feel spongy and cereals like Grape Nuts and those made from flakes. I am not saying to avoid such products. I am saying that if you want to maximize health you will eat **not only whole grains, but coarsely-ground whole grains.**

Cake, pastries and cookies are high in sugar and low in fiber, but even when eating these you can minimize the negative health impact by eating them in moderation and not consuming any that contain trans fats.