

CARBOHYDRATE IS NOT A DIRTY WORD

Carbohydrate has always gotten a “bum rap”. We have all heard that carbohydrate is high in calories and make us fat. Carbohydrate, in fact, has the same calorie value as protein since both provide 4 calories per gram of food. However the type of carbohydrate we eat may make us eat more calories in total.

There are two types of “Carbohydrate”. These are **simple** carbohydrate, usually called **sugar**, and **complex** carbohydrate, usually called **starch**. Simple carbohydrate is found in healthy foods such as fruit and vegetables as well as in unhealthy foods like soda, candy, donuts and cookies. Complex carbohydrate is contained in healthy foods such as vegetables, beans, legumes, and grains (there is a bit in fruit also) and of course when it is processed it can be made into junk food like potato chips or french fries.

Simple carbohydrate/sugars are digested and absorbed quickly. The only thing slowing them down is the water and fiber in foods like fresh fruits or veg. These give us quick energy as well as vitamins and minerals. In food ingredient lists you may see names like glucose, fructose, sucrose, lactose, maltose and others but remember the healthiest simple carbohydrate foods do not have a label, like oranges, apples, broccoli and squash.

Complex carbohydrate isn’t really complicated! Complex carbohydrate is starch. Starch is **Digestible Carbohydrate** which means that it can be broken down or digested and our bodies can use the energy it produces. However it takes longer to digest and absorb complex carbohydrates. These are found in foods like breads, crackers, bagels, pasta, rice, cereals, ‘starchy’ vegetables like beans, corn, yams, potatoes, beets and winter squash as well as beans and legumes. Complex carbohydrate takes longer to digest and absorb slowed down further since these foods contain a lot of fiber.

There is another form of complex carbohydrate which CANNOT be digested or broken down. It is **Indigestible Carbohydrate** also known as **Dietary Fiber**. Our bodies cannot breakdown this carbohydrate and therefore do not get calories from them.

There are two kinds of Dietary Fiber: **Soluble and Insoluble**. While these do not act as a nutrient in the strictest sense they have strong health benefits. It is recommended that adult men should get between 30-38 grams of dietary fiber per day and adults women 21-25 grams per day. It is important to drink plenty of water when eating a high fiber intake.

Soluble Dietary Fiber		Insoluble Dietary Fiber	
Health Benefits	Major Food Sources	Health Benefits	Major Food Sources
Delays stomach emptying, feel full longer, aid weight control	Apples, bananas, berries, barley, some vegetables, oat, legumes, soybeans, dried peas and beans, psyllium seeds	Promotes intestinal health – prevents diverticulosis & -litis and hemorrhoids	Whole Grain, Bran, Flax Seeds, Nuts, Seeds, most Fruits and Vegetables
Slows glucose absorption – helps control blood sugar		Prevent constipation	
Helps decrease blood cholesterol			

Most natural foods, meaning those closest to the farm grown food, are a **combination** of **simple and complex** carbohydrate, both digestible starch and indigestible fiber. Processed foods may contain only simple carbs or sugars since they are manufactured to do so. This processing means that the food is stripped of many of its nutrients, fiber and natural health promoting substances. Therefore it is less beneficial to your health.



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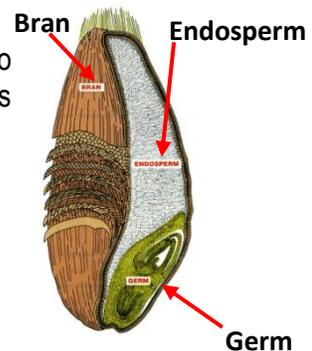
Carbohydrate foods include:

- Fruits and vegetables including fresh, frozen, canned, dried, and juices
- Grains or grasses which include:

amaranth	white rice	triticale	durum wheat
barley	wild rice	wheat	bulgur
buckwheat	brown rice	spelt	cracked
corn	colored rice	emmer	wheat
millet	rye	farro	wheatberries
oats	sorghum	einkorn	
quinoa	teff	kamut®	

Of course, these ingredients and the parts extracted from them can be made into all kinds of foods.

Some are healthy. For grains these are those left in their **WHOLE** state, called Whole Grains. They are not processed. You must see the word “Whole” in the ingredient list on the package to ensure optimal nutrient value. This means that the grain from which the food was made includes all its parts: bran, endosperm and germ. More importantly it contains all the original nutrients of the grain which is much healthier than milled or processed grains which are missing the bran which is high in fiber and the germ which is rich in vitamins and minerals. **Enriched** grains are those that have had some of the nutrients lost in processing added back including thiamin, riboflavin, niacin, folic acid, and iron. However, some of those nutrients lost are not added back such as dietary fiber, magnesium and selenium.



Fruits and vegetables are also healthier in their whole state. Once processing begins the original amount of fiber and nutrients may be decreased. For instance, a fresh whole orange has far more fiber, vitamin C, and even calcium than orange juice. Since it takes longer to eat a whole orange than drink the juice, you will feel full longer and the simple, though natural, sugars will be absorbed more slowly from the orange. Of course, once you extract the flavor and add refined sugar to make orange drink or soda, the nutrient value drops while the calorie and sugar load increase.

Processed foods, like sweets or junk foods, such as cakes, cookies, pies, candy, soda, drinks, even juice cocktails have high calories, lots of refined simple sugars and low nutrient value.

So, to get the most health benefit and nutrient value from carbohydrate foods:

- Choose a variety of grain foods, not always wheat
- Choose more “Whole” grains rather than refined or enriched grains, look for “Whole” on the label
- Choose a variety of fruits and vegetables
- Eat whole fruits and vegetables that have little added to them even if they are canned or frozen
- Limit or eliminate sweets or junk foods
- Maximize fiber by adding beans and legumes as well as whole grains and whole fruits and vegetables

If you have questions email me at: ckomline@bernards.org



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