



Fit To Eat™ CARBOHYDRATES

CARBOHYDRATES

The main function of carbohydrates is to provide energy for the body and provides 4 calories per gram. For example, let's say a medium apple with skin has 20g of carbohydrates. Mathematically speaking, this means that 20g of carbohydrates x 4 calories per gram = 80 calories in total! A low-calorie snack indeed!

Carbohydrates are the body's first and preferred energy source not only for daily activity but also for your brain and red blood cells, so yes, they are very important so make sure you consume enough of the right kind which you will learn to do throughout the Fit To Eat™ Program.

Sources of carbohydrates come from fruits, vegetables, grains, legumes. No matter the type of carbohydrate, they are all converted to glucose (a unit of energy) used by the body. This is done through digestion of the carbohydrate which occurs in the mouth with the help of saliva (and amylase, an enzyme found in the saliva) to breakdown the carbohydrate into glucose before it leaves your mouth and enters your stomach.

This glucose circulates in the blood (quickly in the case of simple carbohydrates) and slowly (in the case of complex carbohydrates). The glucose that is not needed by the tissues is stored in the liver and in muscles in the form of glycogen however the body can only store so much glycogen. Let's compare your body to your car's gas tank. Your car has a gas tank that can only hold so much gas before it overflows and your glycogen stores are no different. Excess glucose will be stored in your body as body fat when the liver and muscles are at capacity so beware of loading up on those carbohydrates in one sitting, especially the simple carbohydrates!

SIMPLE CARBOHYDRATES (Disaccharides)

Simple carbohydrates as a whole increase blood sugar levels and are known as high glycemic index (GI) foods. Although they are a quick energy source and are great for a quick boost, they also come with a quick crash and your body then craves more to get its boost back. When they are consumed, the hormone insulin is released from the pancreas to decrease your blood sugar levels but as a result, an over secretion of insulin often occurs causing the body to hold on to body fat – a vicious cycle when simple carbohydrates are responsible for the majority of your diet.



Simple carbohydrates are 2 sugar molecules linked together that are easily absorbed into the bloodstream which as a result quickly raise blood sugar levels. So what is the issue then? Diets high in simple carbohydrates have been linked to diabetes, obesity and even death!

The refined sugars (found in most simple carbohydrates except fruit) have very little, if any, nutritional value other than the calories they contain. Yes, I am aware that they taste sweet and delicious but not without serious repercussion on your waist line, your health, body and your life so why consume them?

Consuming excess sugar throws the entire body's chemistry off balance and can cause fatigue, headaches, irritability, cravings, adrenal fatigue, Candida and dependence to name a few. In addition, it dramatically weakens the immune system allowing for your body to shut down and be prone to more colds, more flues and illness in general. Sugars decrease the absorbability of the vitamins and minerals you consume causing you to burn fewer calories.

2 categories:

1. Monosaccharides (mono = one)

Glucose (from fruit, honey, corn syrup, starches, etc)

Fructose (from fruits and vegetables)

Galactose (from milk products)

2. Disaccharides (Di = combination of two monosaccharides)

Sucrose = glucose + fructose

(can be found in common table sugar, molasses, maple syrup, brown sugar, etc.)

Lactose = glucose + galactose

(can be found in milk sugar)

Maltose = glucose + glucose

(one of the sweetest forms of sugar and can be found in malt sugar and products)



Simple Carbohydrates can be found in:

- White sugar
- Brown sugar
- Confectioner's Sugar
- Rice Syrup
- Caramel
- Maple syrup
- Corn syrup
- Honey
- Molasses
- Cakes
- Pastries
- Candies
- Doughnuts
- Chocolate
- Juices
- High sugar cereals
- Breads
- Pastries
- Cookies

FOOD FOR THOUGHT:

One 12-ounce cola drink contains almost 40 grams of sugar (that's approximately 8 teaspoons)!

Fit To Eat™ Important Lesson Overview

Simple (monosaccharide and disaccharide) carbohydrates = sugar = non-beneficial calories*

** With the exception of whole fruit which are monosaccharides and have added benefits of vitamins, minerals, water and fiber (which slows down the release) but they too should be consumed in moderation so as to not increase blood sugar levels causing over release of insulin (and stored body fat).*

COMPLEX CARBOHYDRATES (Polysaccharides)

This is the type of carbohydrate that will be consumed in the Fit To Eat™ program because like protein and healthy fats, they are considered low glycemic index (GI) foods. They do not raise blood sugar levels significantly; rather they release glucose into the bloodstream slowly (opposite from what we discovered earlier on with simple carbohydrates). By consuming low GI complex carbohydrates (and combining them with a protein or fat), insulin levels remain stable and your will body respond in beneficial ways but the important factors are that it will metabolize and burn fat more efficiently, and it will also reduce cravings and hunger.



Complex Carbohydrates are also known as Polysaccharides and they contain many glucose units (up to 3000) and the majority are either starch or complex carbohydrates as they are known in nutrition science.

Complex carbohydrates can be found in starchy foods such as:

- Sweet potatoes
- Rice and grains
- Whole grain breads, cereals and pasta
- Legumes, beans and lentils
- Corn and peas
- Fruits
- Vegetables
- And anything that comes from a plant source

THE IMPORTANCE OF FIBER (a COMPLEX CARBOHYDRATE)

Fiber is best known as the indigestible part of the plant which cannot be broken down by enzymes or digestive juices. It is what many people know as “roughage” or “bulk” and is what gives your stools (feces) part of its consistency. Fiber can be divided into two main categories: soluble (dissolves in water) and insoluble (does not dissolve in water) fiber. Soluble fibers consist of pectin’s, gums and mucilage’s and insoluble fibers consist of cellulose, hemicellulose and lignin’s. But for simplicity sake, and as seen on nutrition labels, we will focus on soluble and insoluble fiber.

Since soluble fiber dissolves in water, it forms a gel and adds bulk and softens your stools. As a result, it expands in your stomach and it helps to delay the emptying time of the stomach after a meal keeping you full longer. It is important however to ensure you are consuming water with fiber for it to do its job efficiently. Insoluble fiber on the other hand is exactly as it states, insoluble, and for this reason it does not dissolve in water however it does make up the bulk of your stool helping it along it’s trajectory through the intestinal track to then be excreted.

Some common food sources of soluble fiber are: oatmeal and oat bran, barley, bean, legumes, peas, flax seeds (ground is best), apples and oranges, carrots, psyllium (often found in over the counter anti-constipation powders and mixes) and even some nuts and seeds.

Some common food sources of insoluble fiber are whole wheat products (cereals, pastas, breads), corn bran, some nuts and seeds, fruit and vegetables skins (yes the skins have beneficial fibers), dark leafy vegetables, etc.

The health benefits of fiber as a whole are numerous and necessary for your digestion, detoxification and colon health. Fiber (both soluble and insoluble) will help:



- Decrease constipation
- Promotes regular bowel movements
- Decrease the occurrence of intestinal disorders
- Lowers blood fats
- Boosts one's energy levels
- Improve one's immunity
- Control diabetes
- Control cravings
- Helps to reduce the absorption of glucose into the bloodstream
- Decrease the risk of cancer of the colon
- Decrease the risk of heart disease
- Decrease cholesterol in the blood
- Decrease the occurrence of gallstones
- Helps control obesity

It is amazing that even with all of the above mentioned health conditions, the majority of North Americans are still not getting even half of their daily recommended dosage of fiber in a day (25-30 grams)!

CARBOHYDRATES AND EXERCISE

Whether you are training for a cardiovascular activity (such as running, jogging, cycling, swimming or preparing for a Triathlon), or if you are working out for strength (lifting weights or plyometrics), your food requirements are different in terms of which macronutrients (protein, fat or carbohydrate) should dominate your plate and your meals for the day but timing is also important. The lesson to learn is that pre and post workout nutrition, especially carbohydrates, are equally as important!

First thing is first, if your goal is to have a productive workout, you must eat and not starve yourself. Muscle doesn't build itself so if you are looking to get stronger (and leaner) and have a lean muscle instead of flabby fat, be sure to feed your body what it needs and when it needs it for optimal performance! As you read earlier on, Carbohydrates are the body's main and preferred fuel source so ensuring that you have a meal before a workout will enable you to have your best workout as your energy levels will be high, you will have better concentration, endurance and burn more calories as a result!

Carbohydrates are your best choice if you are eating close to your workout time as they are quickly digested (starting the breakdown process in your mouth with your saliva and the enzyme amylase). Protein and fats on the other hand are slower to digest (in your stomach) and as a result sit in your stomach for longer periods of time than do carbohydrates. It's not to say that you shouldn't consume any protein before a workout but ideally a light meal made with a quick release protein like natural whey protein powder is optimal. Try making a smoothie with the whey protein, some of your favourite low-glycemic fruits (strawberries,



blueberries, raspberries), and water and you'll have yourself a great light pre-workout meal that has enough energy to get you through your workout.

FOOD FOR THOUGHT:

Someone who is lifting weights needs the energy to do so and requires carbohydrates (the body's primary fuel source) both before and after their workout. You need to remember that the higher the intensity of the exercise, the more your body requires carbohydrates. On the contrary, the lower the intensity, less carbohydrates are needed throughout the day. So a couch potato does not require the same amount of carbohydrates throughout the day as the Marathon runner or weight lifter!

But it is important to understand that when we lift heavy weights, our glycogen store become depleted and need to be replenished (via complex carbohydrates) so don't neglect the importance of making sure you get enough carbohydrates both before and after a workout!

Something to consider is that when there are not enough carbohydrates in your body and you are performing a high intensity activity, the secondary fuel source in this case is protein. Not only is protein not a clean fuel source (due to nitrogen) but it is talking away from your muscles and hence will have a more difficult time repairing and restoring those muscles after your workout. The only time your body will use fat as a secondary fuel source is at a low-intensity level of exercise. Thus, if you eat too few carbohydrates when performing high intensity exercises, protein is used instead of fat so in order to use fat as your energy source; you must reduce the intensity of your activity.

Fit To Eat™ Important Lesson Overview

Remember that the higher the intensity of the exercise, the more your body requires carbohydrates, and the lower the intensity, less carbohydrates are needed throughout the day.



Fit To Eat™ FOOD LIST

All foods are sourced from the USDA and CNF unless noted. If you cannot find the suggested brand, please substitute with the closest alternative. The difference will not be significant and will not affect your overall results. Note the gram weight of each food item has been rounded to the closest 0 or 5.

I partnered with Laura Discepola of Fit to Eat – www.fittoeat.ca to bring you a list of Carbohydrates you should be eating to maximize your fat loss. Laura is the Nutritionist for the **Spartan Training System 10 Week Fitness Program** launching in January 2013.

CARBOHYDRATES (C)



FRUIT CARBOHYDRATE (FC)

All weights and measurements are based on the equivalent of 1C= 15g of FC. Items listed with an * should be limited to 2x pr week as they are higher in sugars

- Apple (6cm diameter)
- Applesauce, unsweetened (1/2 cup)
- Apricots, dried, organic only (3)
- Apricots, fresh (3)
- Banana* (1/2 a medium)
- Blackberries (1 cup)
- Blueberries (3/4 cup)
- Cherries, fresh (15)
- Cantaloupe (1 cup cubed)
- Clementine (1.5)
- Cranberries, dried organic only (1 ½ tbsp)
- Dates, dried organic only (2 large or 3 small)
- Figs, dried, organic only (2 medium or 3 small)
- Figs, fresh (1 ½)
- Grapefruit, pink or white (½)
- Grapes, red, green or black, small (15)*
- Honeydew (1cup cubed)
- Kiwifruit (1 ½)
- Lemon (3 x small lemons)* also a FBE

- Lime (2 x whole fruit) * Also a FBE
- Lychee (10)
- Mango* (1/2 small)
- Nectarine (1 small)
- Orange (1 small)
- Papaya (1 cup cubed)
- Peach (1 medium)
- Pear (1/2 a large)
- Pineapple* (3/4 cup cubed)
- Plantain, boiled only (1/2 cup sliced)*
- Plums (2 small)
- Pomegranate, 9cm (1/2)
- Raisins, dried, organic* (1 tbsp)
- Raspberries (1 cup)
- Strawberries (15 small-medium or 2/3 cup sliced)
- Tangerine (1 ½)
- Watermelon (1 cup cubed)



STARCHY CARBOHYDRATE (SC)

All weights and measurements are base on the equivalent of 1C= 15g of SC.

GRAINS

Items listed with an *** are also Gluten Free. All grains are cooked unless noted.

- Amaranth *** (1/4 cup)
- Barley (1/3 cup)
- Brown rice (all types) *** (1/4 cup)
- Buckwheat *** (1/3 cup)
- Bulgur (1/3 cup)
- Kamut (1/4 cup)
- Spelt (1/4 cup)
- Quinoa *** (2/3 cup)
- Teff *** (1/4 cup)
- Wild Rice *** (1/3 cup)

LEGUMES

- Beans and Lentils (all types, canned and rinsed or cooked, 1/2 cup loosely packed)
Kidney Beans, Black Eye Peas, Mung Beans, Adzuki Beans, Chickpeas (Garbanzo), Black Beans, Refried Beans, Lentils (orange, green, black), split peas (yellow or green)
- Edamame (3/4 cup)
- Hummus (chickpea puree – no fat versions, “Sabra” Brand, ¼ cup)



PASTAS | NOODLES

*Any shape. All uncooked unless noted. ½ cup
Items listed with an *** are also Gluten Free.

- Brown Rice Pasta ***
- Kamut Pasta
- Quinoa Pasta ***
- Spelt Pasta
- Soba Noodles (Buckwheat) ***
- Soya Bean Pasta ***
- Vermicelli Noodles, brown rice ***
- Wild Rice Pasta ***

BREADS | WRAPS | CRACKERS

Items listed with an *** are also Gluten Free.

- 100% Rye bread, dense slice (1/2 slice)
- Blue Corn Chips, organic, baked *** (1 oz.)
- Ezekiel, sliced bread
- Finn Crisp Original Rye Crackers (3 crackers)
- Kamut bread , 1 slice
- Brown Rice Cakes (2) ***
- Ryvita Dark Rye Crispbread (1 ½ crispbreads)
- Spelt Bread (Stonemill) (1 slice)
- Sprouted Grain Bread (Stonemill) (1 slice)
- Ezekiel Wrap
- Pita bread, whole wheat (1/2 a 7" pita)
- English Muffin (Ezekiel or Whole Grain) (1/2)
- Wasa Hearty Rye Crispbread (1 crispbread)
- Tortilla, corn (2 x 5" tortillas) ***
- Tortilla, wheat (1/2 8" tortilla)

CEREALS

Items listed with an *** are also Gluten Free.

- Cream of Brown Rice (1/8th cup uncooked) ***
- Cream of Buckwheat (1/8th cup uncooked) ***
- Cream of Wheat, cooked (1 cup)
- Fiber 1, General Mills™ (1/4 cup)
- Oat Bran, cooked (3/4 cup)
- Red River, cooked (1/3 cup)
- Rolled Oats (not instant, slow cooked) (1/4 cup uncooked)
- Steel Cut Oats, uncooked (1/8th cup) (Gluten free oats can be found – read the labels)
- Wheat Germ (4 tbsp)
- Wheat Bran (1/3 cup)

STARCHY (HIGHER SUGAR) VEGETABLES

- Acorn (Pepper) Squash (1/2 cup cubed)
- Butternut Squash (3/4 cup cubed)
- Beets (3/4 cup sliced)
- Carrots, baby (18)
- Corn niblets (1/3 cup)
- Lima Beans (1/2 cup)
- Parsnips (1/2 cup sliced)
- Peas (1/2 cup sliced)
- Pumpkin, canned (3/4 cup)
- Spaghetti Squash, cooked (1 ½ cups)
- Sweet Potato or yams (1/2 small-medium)
- Tomatoes, canned and stewed (1 cup)
- Yukon Gold Potato (1/2 small to medium)



HIGH WATER-BASED CARBOHYDRATE (HWC)

*1 C = roughly 2 cups of any of the following unless noted.
Choose a variety of vegetables for optimal nutrient intake.

- Arugula
- Alfalfa Sprouts
- Asparagus
- Beans (green or yellow)
- Beet greens
- Bok Choy
- Boston Bibb Lettuce
- Broccoli
- Broccoli Sprouts
- Brussel Sprouts (10)
- Cabbage (all varieties)
- Cauliflower
- Eggplant (1 ½ cups)
- Fiddleheads (1 ¼ cups)
- Garlic (also a FF)
- Ginger root (also a FF)
- Green onions (and chives)
- Leaf Lettuces
- Mesclun
- Radicchio
- Romaine
- Spinach



- Kale
- Mushrooms
- Onions (all types)
- Peppers (all types, 2 peppers)
- Rapini (broccoli rabe)
- Rutabaga, yellow turnip (1 cup diced)
- Swiss Chard
- Tomato, whole (3 medium)
- Tomatoes, canned, stewed (1 cup)
- Tomato Sauce (low fat, low sodium)
- Turnip
- Watercress
- Zucchini (green or yellow)

Fit To Eat™ and *Laura Discepola, RNCP and ROHP*



Laura Discepola, FIT TO EAT RNCP/ROHP, PTS

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