

## **Carbohydrate**

Major dietary sources of Carbohydrate include cereal, grains, bread, legumes (dried beans), pasta, potatoes, fruits, milk, vegetables, sugar and honey. Carbohydrate consists of sugars, complex carbohydrates and fiber. Carbohydrate is measured in grams (gms).

### *Beneficial Properties:*

- Primary energy source for the body (4 Calories per gram of Carbohydrate)
- Helps to spare protein, making it available for growth and repairs

### *Deficiency Indicators:*

- There are no deficiencies linked solely to a lack of Carbohydrate. However, a deficiency of total calories leads to marasmus, a disease of sheer starvation.

### *Excessive Intake and Toxicity Symptoms:*

- No known toxicity has been reported
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### *Sources of Carbohydrate*

## ***Cholesterol***

A lipid. Major dietary sources of Cholesterol include foods of animal origin, such as, dairy products, egg yolks, meat, organ meats, shellfish and butter. Foods of plant origin do not contain Cholesterol. Cholesterol is not an essential nutrient for humans. Our bodies' liver can manufacture it.

### *Beneficial Properties:*

- Component of cell membranes and myelin (nerve fiber sheath)
- Necessary for the synthesis of hormones
- Precursor of bile acids
- Precursor of Vitamin D

### *Deficiency Indicators:*

- No deficiencies have been noted

### *Excessive Intake and Toxicity Symptoms:*

- May increase serum (blood) cholesterol in people who are sensitive to dietary cholesterol

### *Sources of Cholesterol*

## ***Fiber***

The indigestible part of carbohydrate. Major dietary sources of Fiber include whole grain cereals, and breads, legumes (dried beans), fruits and vegetables. Fiber does not provide any calories. The bodies' digestive tract does not have the enzymes necessary to break it down. Fiber falls into two categories, soluble and insoluble.

### *Beneficial Properties:*

#### Soluble Fiber:

- May decrease serum (blood) cholesterol levels
- May decrease blood sugar levels

#### Insoluble Fiber:

- Helps to decrease and prevent constipation
- Helps prevent diverticulitis
- Decreases risk of colon cancer

### *Deficiency Indicators:*

- Constipation

### *Excessive Intake and Toxicity Symptoms:*

- Sudden increases may result in intestinal gas, bloating and cramps

### *Sources of Fiber*



## OTHER TRACE ELEMENTS

### Dietary Macro-Components



*Carbohydrate*



*Cholesterol*



*Fiber*



*Protein*

## ***Protein***

Major dietary sources of Protein include seafood, poultry, meat, legumes (dried beans), milk and milk products, tofu, and nuts. Protein consists as a chain of amino acids linked together.

### *Beneficial Properties:*

- Provides amino acids for growth, repair and maintenance of cells
- Helps to maintain fluid balance
- An energy source (4 Calories per gram of Protein)

### *Deficiency Indicators:*

- Kwashiorkor which causes muscle wasting and edema
- Thin and fragile hair
- Skin lesions

### *Excessive Intake and Toxicity Symptoms:*

- May contribute to osteoporosis (thinning bones)
- May lead to kidney problems

### *Sources of Protein*

### *SOURCES OF CARBOHYDRATE*

Foods with higher contents listed first

<b>Food</b>	<b>Amount</b>	<b>Grams (gms)</b>
<b>Potato, with skin</b>	1 medium	51
<b>Rice, brown</b>	1 cup	44.8
<b>Pinto beans</b>	1 cup	43.9
<b>Black beans</b>	1 cup	40.8
<b>Kidney beans</b>	1 cup	40.4
<b>Pasta</b>	1 cup	36.4
<b>Banana</b>	1 medium	26.7
<b>Apple</b>	1 medium	21
<b>Corn</b>	1 cup	20.6
<b>Oatmeal, cooked</b>	2/3 cup	18.6
<b>Honey</b>	1 tablespoon	17.3
<b>Jelly</b>	1 tablespoon	13.5
<b>Milk</b>	1 cup	12
<b>Bread, whole wheat</b>	1 slice	11.4
<b>Broccoli</b>	1/2 cup	4
<b>Sugar, white</b>	1 teaspoon	4

*SOURCES OF CHOLESTEROL*

<b>Food</b>	<b>Amount</b>	<b>Milligrams</b>
<b>Liver</b>	3 ounces	270
<b>Egg, yolk</b>	1 medium	208
<b>Egg, whole</b>	1 medium	208
<b>Shrimp</b>	3 ounces	130
<b>Veal</b>	3 ounces	129
<b>Oysters</b>	3 ounces	92
<b>Lobster</b>	3 ounces	85
<b>Chicken</b>	3 ounces	72-80
<b>Beef, lamb, pork (lean)</b>	3 ounces	77-79
<b>Salmon</b>	3 ounces	74
<b>Turkey</b>	3 ounces	60-72
<b>Milk, whole</b>	1 cup	34
<b>Cheese, cream</b>	1 ounce	31
<b>Cheese, cheddar</b>	1 ounce	30
<b>Half and half</b>	1/4 cup	23
<b>Milk, low fat</b>	1 cup	18
<b>Butter</b>	1 tablespoon	11
<b>Milk, skim</b>	1 cup	4

### *SOURCES OF FIBER*

<b>Food</b>	<b>Amount</b>	<b>Grams</b>
<b>Pinto beans</b>	1/2 cup	10.3
<b>Kidney beans</b>	1/2 cup	8.2
<b>Corn, cooked</b>	1/2 cup	4.7
<b>Lentils</b>	1/2 cup	4.5
<b>Peas, Cooked</b>	1/2 cup	4.4
<b>Apple, with skin</b>	1 medium	4.2
<b>Black-eyed peas</b>	1/2 cup	4.1
<b>Garbonza beans</b>	1/2 cup	4.0
<b>Pear, Bartlett</b>	1 medium	4.0
<b>Almonds</b>	1/4 cup	3.9
<b>Whole wheat pasta, cooked</b>	1 cup	3.7
<b>Brussels sprouts, cooked</b>	1/2 cup	3.6
<b>Split peas</b>	1/2 cup	3.4
<b>Sweet potato</b>	1 medium	3.4
<b>Sesame seeds</b>	1/4 cup	3.3
<b>Prunes, dried</b>	4	3.1
<b>Carrot raw</b>	1 medium	2.6
<b>Orange</b>	1 medium	2.5
<b>Potato, with skin</b>	1 medium	2.4
<b>Banana</b>	1 medium	2.3
<b>Whole wheat bread</b>	1 slice	2.2
<b>Sunflower seeds</b>	1/4 cup	2.2
<b>Beans, green cooked</b>	1/2 cup	2.0
<b>Brown rice</b>	1/2 cup	1.8



*SOURCES OF PROTEIN*

<b>Food</b>	<b>Amount</b>	<b>Grams</b>
<b>Halibut</b>	3 ounces	22.7
<b>Salmon</b>	3 ounces	21.6
<b>Ground beef, lean</b>	3 ounces	21.2
<b>Shrimp</b>	3 ounces	17.3
<b>Ham, lean</b>	3 ounces	15.9
<b>Kidney beans</b>	1 cup	15.4
<b>Black beans</b>	1 cup	15.2
<b>Cottage cheese</b>	1/2 cup	14.0
<b>Yogurt, low fat</b>	1 cup	11.9
<b>Tofu</b>	1/2 cup	11.0
<b>Milk, all types</b>	1 cup	8.0
<b>Egg</b>	1 medium	6.0

