Nutrition, Food and Fitness
Chapter 5
"Carbohydrates: The Preferred Body Fuel"
Page 75

Carbohydrates are one of the six essential nutrients and are your body's main source of energy. They are the sugars, starches and fibers in your diet. Nearly all carbohydrates come from plant sources. The natural sugar in milk is an exception.

https://www.youtube.com/watch?v=wxzc_2c6GMg

Types of Carbohydrates

Carbohydrates are made of three elements: carbon (C), hydrogen (H) and oxygen (O).

These elements are bonded together to form saccharides or sugar units. The elements can be combined in several ways.

Monosaccharides

1 sugar unit

Monosaccharides are carbohydrates composed of single sugar units. They are the smallest carbohydrate molecules.

The three monosaccharides are glucose, fructose and galactose.

Glucose is sometimes called blood sugar because it circulates through your blood. It is the body's source of energy.

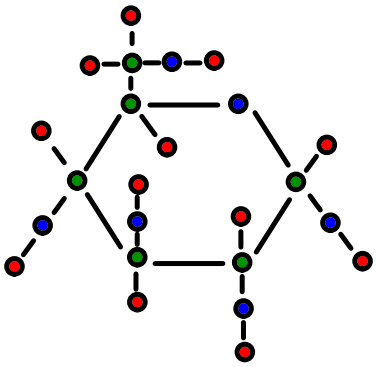
Fructose has the sweetest taste of all the sugars. It occurs naturally in fruit and honey.

Galactose does not occur alone as a monosaccahride. It is found bonded to glucose. Together they form the sugar in milk.

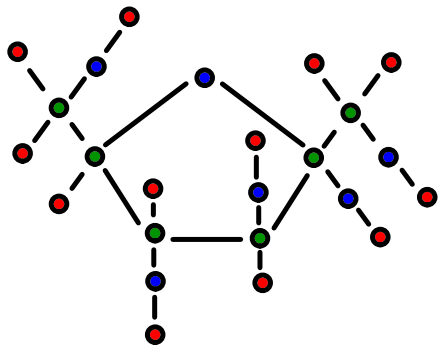
Carbohydrate Structures
(Page 75)

Monosaccharides

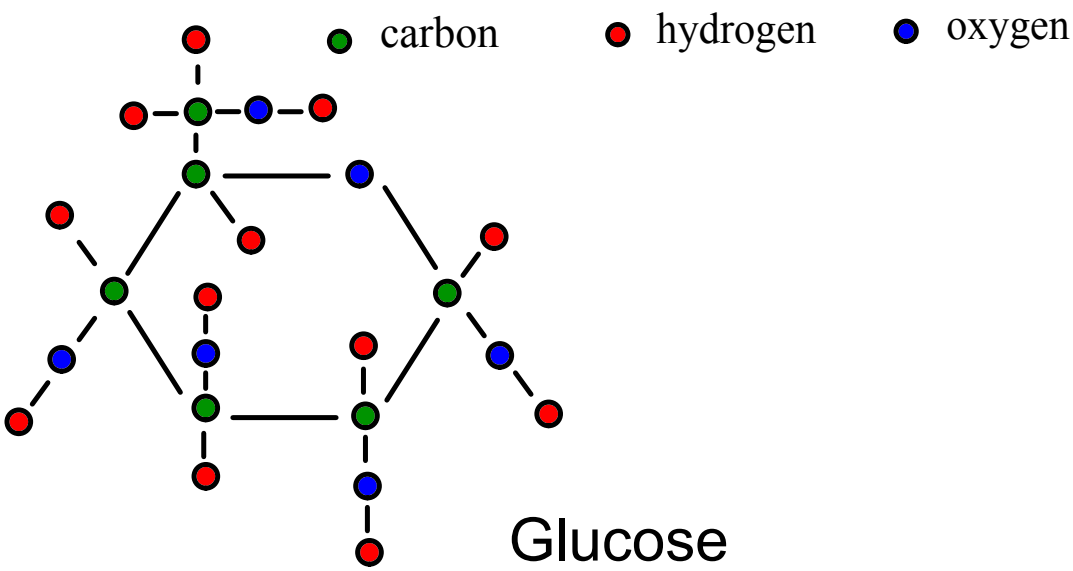
carbon hydrogen oxygen



glucose



fructose



Glucose

$C_6H_{12}O_6$

Disaccharides

Disaccharides are made up of two sugar units. The body splits disaccharides into monosaccharides during digestion.

The disaccharides are sucrose, maltose and lactose.

Sucrose is the sugar you use in recipes or add to foods at the table. It is made of one glucose molecule and one fructose molecule that are bonded together. Beet sugar, cane sugar, molasses and maple syrup are concentrated sources of sucrose.

Maltose is made of two glucose molecules that are bonded together. It is formed during the digestion of starch. It is found in certain grains like malt.

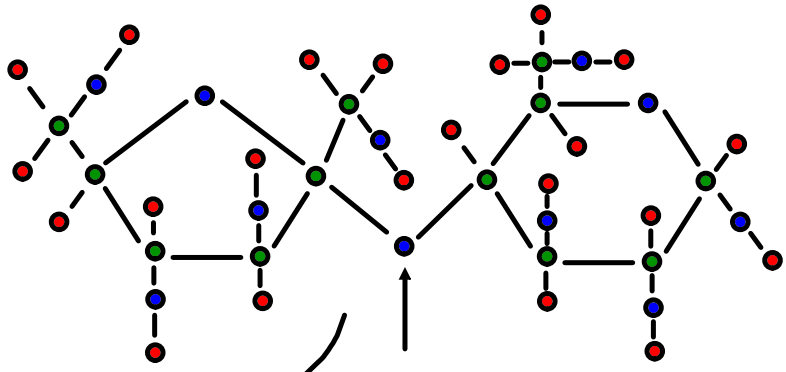
Lactose is found in milk. It is made of one glucose molecule and one galactose molecule bonded togther. It serves as a source of energy for breast-fed infants.

All of the mono- and disaccharides are collectively referred to as sugars.

Carbohydrate Structures
(Page 75)

Disaccharides

carbon hydrogen oxygen



sucrose

Polysaccharides

more than 2

Polysaccharides are carbohydrates that are made up of many sugar units. These units are linked in long, straight chains or branched chains. They must be broken down during digestion.

Starches and fibers are polysaccharides.

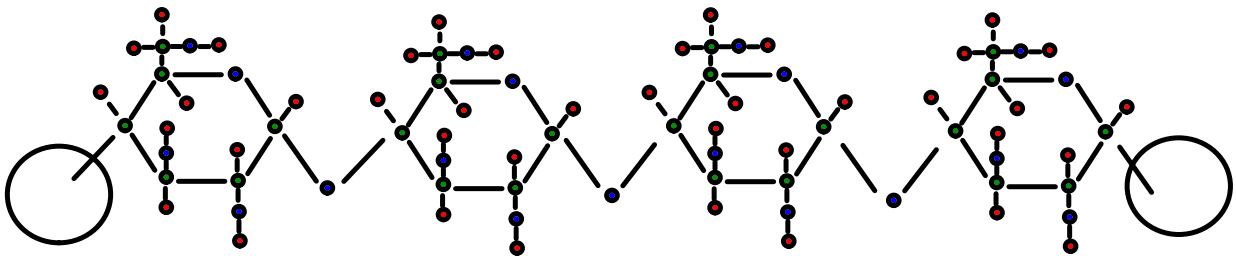
Starch is a polysaccharide that is the storage form of energy in plants. It is made of many glucose molecules that are bonded together. Grain products, such as breads and cereals, and starchy vegetables such as corn, potatoes and legumes are high in starch. →

Fibers are polysaccharides that make up the tough, fibrous cell walls of plants. Human digestive enzymes cannot digest fibers, but bacteria in the digestive tract can break down some fibers. These carbohydrates provide almost no energy. Cellulose, gums and pectin are some types of fibers.

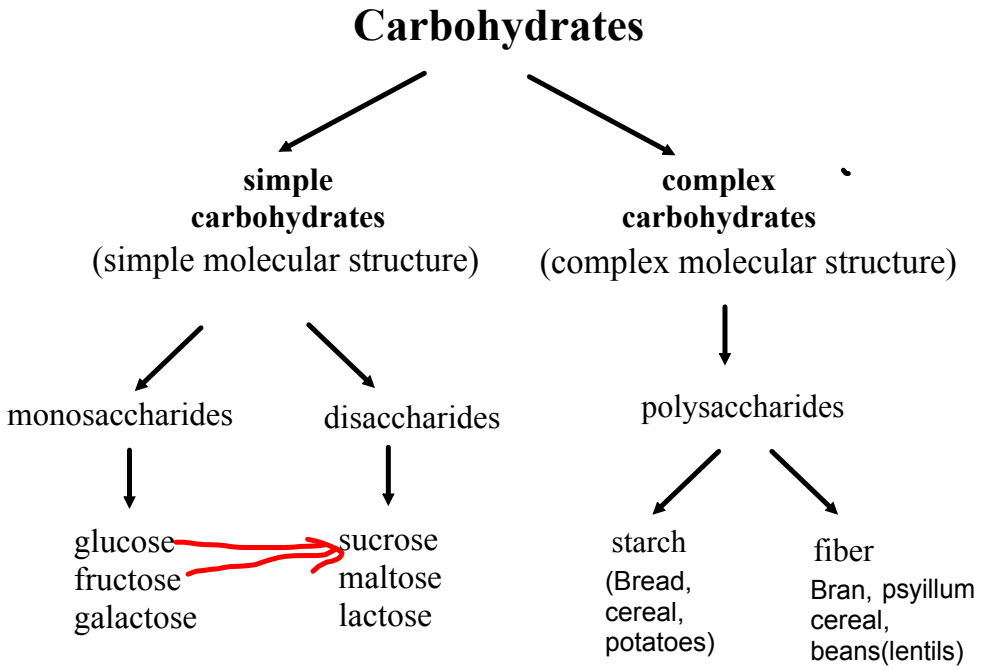
Carbohydrate Structures
(Page 75)

Polysaccharides

carbon hydrogen oxygen



starch



Complex carbohydrates take longer to digest than simple carbohydrates. This gives complex carbohydrates greater satiety value. Satiety is a term used to describe the feeling of fullness you have after eating food.

Example: Candy Bar vs. Sandwich

The Functions of Carbohydrates
(Page 78)

Carbohydrates serve four key functions:

1. Produce Energy

- carbohydrates provide 4 calories of energy per gram
- they are the preferred source of energy because your body can use them very efficiently

2. Spare Proteins

- by eating adequate amounts of carbohydrates, your body will not use proteins as a source of energy
- proteins can be used to build and maintain cell structures

3. Break Down Fats

- your body needs carbohydrates to completely break down fats

Incompletely broken down fats are called ketone bodies. These compounds collect in the bloodstream and make the blood more acidic than normal which can damage cells and organs. This condition is called ketosis. A person with ketosis has a "nail polish remover" smell to his/her breath and feels nauseated and weak. If ketosis continues, the person can go into a coma and die.

4. Provide Bulk in the Diet

- fiber is the carbohydrate responsible for this function
- it helps promote regular digestion and elimination of body wastes

Fiber acts like a sponge. It absorbs water which softens stools and helps prevent constipation. Some fibers form gels that add bulk to stools - this helps relieve diarrhea.

As fiber swells, it makes you feel full and slows the rate at which the stomach empties.

Dietary fiber can help prevent appendicitis, may lower the risks of heart and artery diseases, may reduce the risk of colon cancer and helps control diabetes mellitus.

Hand in Good Complex Carb Advertisement

Go over the Activity B - Chapter 5

https://www.youtube.com/watch?v=JZNCkedO54Y

https://www.youtube.com/watch?v=VL65VGxS7Dg

Monday, Oct 11, 2016

Hand in Good Complex Carbohydrate Advertisement

http://www.lenny-diabetes.com/carb-counting-with-lenny.html

http://www.softschools.com/quizzes/language_arts/carbohydrates/quiz2612.html

http://www.funtrivia.com/playquiz/quiz2688311ec7390.html

Carbohydrates

1. fiber	polysaccharide	plants
2. fructose	monosaccharide	fruit
3 galactose	monosaccharide	milk
4. glucose	monosaccharide	blood
5. lactose	disaccharide	milk
6. maltose	disaccharide	grains
7. starch	polysaccharide	starchy vegetables
8. Sucrose	disaccharide	table sugar

Handout - Using Carbohydrate

How Your Body Uses Carbohydrates
(Page 80)

Using Carbohydrates

1.

2

3

How Your Body Uses Carbohydrates
(Page 80)

Eating carbohydrates sets off a complex chain of events in your body. Carbohydrates must be in the form of glucose for your cells to use them as an energy source.

eat → disaccharides and polysaccharides (bread, milk, vegetables, fruit, beans, pasta)

↓

digested

↓

monosaccharides → glucose

↓

absorbed into blood and travel to the liver

↓

fructose and galactose in blood is converted to glucose in the liver

↓

glucose levels in the blood rise

↓

insulin (hormone) is released from the pancreas

↓

insulin helps the body lower blood glucose to normal levels by triggering cells to burn glucose for energy and causing muscles and the liver to store glucose

↓

cells convert glucose to glycogen for storage

↓

2/3 of the body's glycogen is stored in your muscles for use as an energy source during muscular activity

1/3 of the body's glycogen is stored in your liver for use by the rest of your body

↓

only a limited amount of glycogen is stored by the liver

↓

you need to eat carbohydrates throughout the day to keep your glycogen stores replenished

↓

excess carbohydrates will be converted into fats by the liver

---

☆

Complex vs Simple Carbs

https://www.youtube.com/watch?v=6esFOqj_IaY

Using Carbs

1.B

2.B

3.A

4.B

5. A

6. B

7. B

8. A

9. A

10. A

11. A

12. B

13. A

14. B

Meeting Your Carbohydrate Needs
(Page 80)

Sugars

naturally occurring sugars
(lactose in milk and fructose in fruit)

↓

accompanied by other nutrients in foods

↓

not a concern among nutrition experts

refined sugars
carbohydrate sweeteners separated from their natural sources for use as food additives
(sugar cane, sugar beets, corn)

↓

used as sweetening agents, increase bulk and aid in browing

↓

sugars added to food reduce the nutrient density of processed foods

↓

eating too many foods high in sugar can lead to obesity and malnutrition

Sugar Intake

Experts suggest limiting added sugar intake to no more than 25% of total calorie intake. 500cal.

Sugars provide 4 calories per gram of energy. For reference, a teaspoon of sugar equals about 4 grams of carbohydrates. This means a person following a 2000-calorie diet should limit intake to about 31 teaspoons of sugar a day (3 or 4 cans of regular soft drinks).

1 tsp sugar = 4 g

Sugars can add up quickly.

Example:

a bowl of sweetened cereal	3 teaspoons of refined sugar
a carton of fruit-flavored yogurt	7 teaspoons of refined sugar
soft drink and small package of chocolate candy	16 to 20 teaspoons of refined sugar
a piece of cake	9 teaspoons of refined sugar
	35 teaspoons

35 x 4 =

☆

High Fructose Corn Syrop

https://www.youtube.com/watch?v=fXMvregmU1g

http://thepaleodiet.com/fruits-and-sugars/

The secret of sugar

Fifth Estate

Reduced Fat and Fat Free Products

These products often have a lot of added sugar. They often have as many calories as regular products. Manufacturers often add sugar to products when they remove fat. Consumers may end up gaining weight when eating reduced fat and fat free products because they think they can eat more.

Zero calories

https://www.youtube.com/watch?v=LiVwWaEmBhw

Meeting Your Carbohydrate Needs

Starches

Nutrition experts recommend a minimum of 20% of your calories should come from complex carbohydrates.

A person needing 2000 calories a day should be consuming at least 400 calories a day from starches. This equals about 100 grams of starches per day.

1500 cal x 20 % = 300 calories complex

2500 cal x 20% = 500 calories carbs

Following the Food Guide will help you meet these recommendations. The breads, cereals, rice and pasta group is an excellent source of food high in starch. Foods in the vegetable group and legumes from the meat and beans group are high in starch too.

Meeting Your Carbohydrate Needs

Fibers

NOTE: DRI - Dietary Reference Intakes

Males 14-50 DRI = 38 g/day

Females 14-18 DRI = 26 g/day

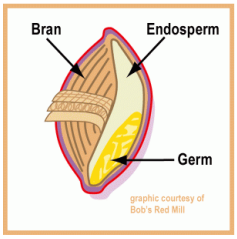
Females 19-50 DRI = 25 g/day

These recommendations are based on intakes that have been shown to help protect against heart disease.

Choosing whole grain products instead of refined grain products is one way to start increasing your fiber intake.

Whole Grain Products

Whole grain products contain all three edible parts of the grain kernel: the bran, the germ and the endosperm.



Text Page 84

The bran is the outer layer of the grain (a good source of fiber).

The germ is the nutrient-rich part of the kernel.

The endosperm is the largest part of the kernel and contains mostly starch.

Refined Grain Products

Refined grain products have had the bran and germ (and most of the fiber) removed during processing. White flour and white rice are examples of refined grain products.

https://www.youtube.com/watch?v=AExRSAGeu1s

https://www.youtube.com/watch?v=418KSrmpMwc

Different Fibers Have Different Effects (Page 79)

Soluble fibers can dissolve in water and develop a gel-like consistency. These are the fibers that lower blood cholesterol levels. Oat bran, legumes (beans/peas), and apple and citrus pectins are sources of soluble fiber.

Insoluble fibers do not dissolve in water. These fibers are associated with reducing cancer risks. Wheat bran and whole grains are high in insoluble fiber.

Many plant foods contain a combination of fibers.

Fifth Estate- The War on Wheat

https://www.youtube.com/watch?v=eO3clrNEuIc

Did you know anything about wheat before the video?

Do you or have you limit your wheat consumption? (ie bread, pasta, cereal, etc)

Do you think Wheat is good or bad?

Will you change your wheat consumption based on information in the video?

Soluble vs Insoluble Fiber

Soluble fiber attracts water and forms a gel, which slows down digestion, delays the emptying of the stomach & makes you feel full longer, helps control weight.

It may have a positive effect on insulin sensitivity thereby helping control diabetes. As well, may help lower LDL (bad) cholesterol.

examples: oatmeal, lentils, apples, strawberries, flaxseed, beans, psyllium, cucumbers Celery

Insoluble fibers are gut-healthy fibers that have a laxative effect & add bulk to the diet, preventing constipation. They do not dissolve in water & pass through the GI tract, speeding up the passage of food & waste through your gut. Found mainly in whole grains& vegetables

examples : whole wheat grains, seeds, barley, brown rice, broccoli, tomatoes, raisins, fruit Celery

Standard_Deviants_School_Human_Nutrition__Macronutrients__Carbohydrates.wmv

Fiber Supplements

Some people use fiber supplements to increase their fiber intake.

A supplement is a concentrated source of a nutrient, usually in pill, liquid or powder form. They do not offer the range of nutritional benefits provided by food sources of nutrients.

Increase your intake of dietary fiber slowly to help your body adjust and drink plenty of water as you increase your fiber intake.

Using Food Labels to Meet Your Carbohydrate Needs

Total carbohydrates provided by foods are listed on Nutrition Facts panels in grams.

The number of grams includes both naturally occurring and added carbohydrates.

Underneath this figure you will see the number of grams of dietary fiber and sugars per serving.

Serving Size
This tells you what is considered one (1) serving of the product. Every other nutrient listed on the label is based on this amount.

Calories
Calories are a unit of energy. Calories in food come from carbohydrate, protein and fat. Because calories give us energy, we need them to be able to think and be active.

% Daily Value
This tells you the percentage of the daily value you are getting, which is the recommended amount of a nutrient you need per day. A food that has more than 20% of the Daily Value of a certain nutrient is a good source of that nutrient.

Cholesterol
Cholesterol is only found in animal products. You should avoid eating too much cholesterol, especially if your blood is high in cholesterol.

Total Carbohydrate
Carbohydrates give your muscles and brain energy. Certain types of carbohydrates are sometimes listed on the label:

Fiber: This helps with digestion and keeps you full between meals.

Sugars: These are important for instant energy, but eating too much can be unhealthy.

Nutrition Facts

Serving Size
Servings per Container

Amount Per Serving	
Calories	Calories from Fat
	% Daily Value*
Total Fat	
Saturated Fat	
Trans Fat	
Polyunsaturated Fat	
Monounsaturated Fat	
Cholesterol	
Sodium	
Total Carbohydrate	
Dietary Fiber	
Sugars	
Other Carb.	
Protein	

Vitamin A	Vitamin C
Calcium	Iron

* Percent Daily Values are based on a 2,000 -calorie diet. Your daily values may be higher or lower depending on your calorie needs:

		Calories	2,000	2,500
Total Fat	Less than		65 g	80 g
Sat. Fat	Less than		20 g	25 g
Cholesterol	Less than		300 mg	300 mg
Sodium	Less than		2,400 mg	2,400 mg
Total Carbohydrate			300 g	375 g
Dietary Fiber			25 g	30 g

Calories per gram:
Fat 9 Carbohydrate 4 Protein 4

Footnote
This reminds us that all of the Daily Values come from the recommendations for a 2,000-calorie meal plan. Most adolescents need more than this amount as they grow in height, build muscles, and stay active. Your needs may be higher or lower; keep in mind this is just an average. These Daily Value percentages (%) are not for everyone.

Servings Per Container
This tells you how many servings you can get from one package. Some containers are a single serving, but most have more than one serving per package.

Calories from Fat
This is the number of calories that come from fat. It is not the percent of fat in the food.

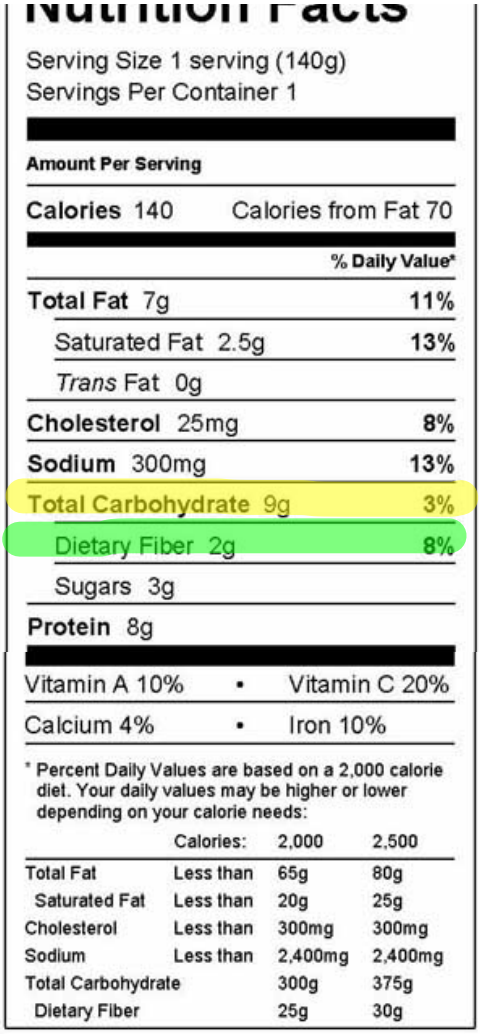
Total Fat
Fat is essential in our bodies. There are 4 kinds of fat. Monounsaturated and polyunsaturated fat are the kinds of fat that are healthy for heart. Saturated fat and trans fat are not heart healthy and should be limited.

Sodium
Sodium tells you how much salt is in the food. People with high blood pressure are sometimes told to follow a low sodium diet. Eating less than 2400 mg of sodium every day is recommended.

Protein
This nutrient is used to build muscle and fight infections. Teen girls usually need around 60 grams of protein each day.

Vitamins/Minerals
This section tells you the percent daily value for Vitamin A, Vitamin C, Calcium, and Iron you are getting from this product. Other vitamins and minerals may be included in this section.

Ingredient lists can also help you identify foods that are high in refined sugar. Ingredients are listed in order of weight, with the most predominant ingredient being listed first. Only added carbohydrates will be listed as ingredients. Check to see if sugars appear near the beginning of the list and see if more than one type of sugar is listed.



Nutrition Facts

Serving Size 1 serving (140g)
Servings Per Container 1

Amount Per Serving

Calories 140	Calories from Fat 70
	% Daily Value*
Total Fat 7g	**11%**
Saturated Fat 2.5g	**13%**
Trans Fat 0g	
Cholesterol 25mg	**8%**
Sodium 300mg	**13%**
Total Carbohydrate 9g	3%
Dietary Fiber 2g	8%
Sugars 3g	
Protein 8g	

Vitamin A 10% •	Vitamin C 20%
Calcium 4% •	Iron 10%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Sample label for
Macaroni & Cheese

Nutrition Facts

Serving Size 1 cup (228g)
Servings Per Container 2

Amount Per Serving

Calories 250 Calories from Fat 110

	% Daily Value*
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholestrol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	

Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

* Percent Daily Values are based on a 2,00 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Chicken Noodle Soup

Nutrition Facts

Serving Size 1/2 cup (120 ml) condensed soup
Servings Per Container about 2.5

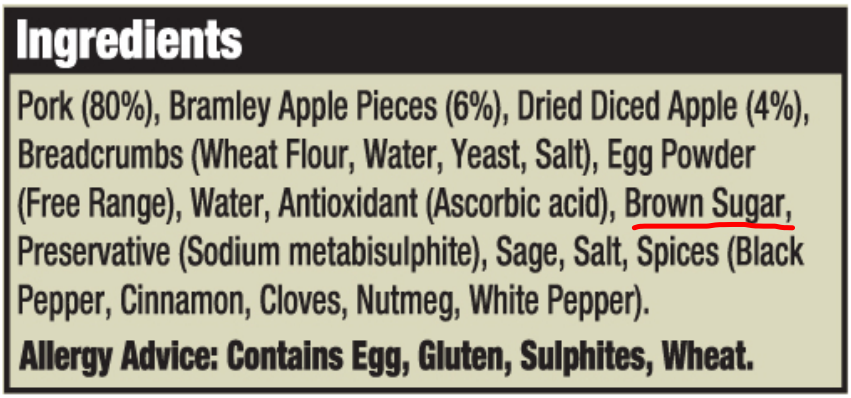
Amount Per Serving

Calories	60	Calories from Fat	15
			% Daily Value*
Total Fat	1.5g		2%
Saturated Fat	0.5g		3%
Trans Fat	0g		
Cholesterol	15mg		
Sodium	890gm		37%
Total Carbohydrate	8g		3%
Dietary Fiber	1g		4%
Sugars	1g		
Protein	3g		

Vitamin A	4%	**Calcium**	0%
Vitamin C	0%	**Iron**	2%

*Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

	Calories	2000	2500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400m	2400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g



Ingredients

Pork (80%), Bramley Apple Pieces (6%), Dried Diced Apple (4%), Breadcrumbs (Wheat Flour, Water, Yeast, Salt), Egg Powder (Free Range), Water, Antioxidant (Ascorbic acid), Brown Sugar, Preservative (Sodium metabisulphite), Sage, Salt, Spices (Black Pepper, Cinnamon, Cloves, Nutmeg, White Pepper).

Allergy Advice: Contains Egg, Gluten, Sulphites, Wheat.

Nutrition Facts

Serv. Size 1 cup (249g)
Servings About 2
Calories 250
Fat Cal. 110
*Percent Daily Values (DV) are based on a 2,000 calorie diet.

Amount/serving	%DV*	Amount/serving	%DV*
Total Fat 12g	**18%**	**Sodium** 940mg	**39%**
Sat. Fat 6g	**30%**	**Total Carb.** 24g	**8%**
Polyunsat. Fat 1.5g		Dietary Fiber 1g	**4%**
Monounsat. Fat 2.5g		Sugars 1g	
Cholest. 60mg	**20%**	**Protein** 10g	**20%**

Vitamin A 0% • Vitamin C 0% • Calcium 6% • Iron 8%

INGREDIENTS: WATER, CHICKEN STOCK, ENRICHED PASTA (SEMOLINA WHEAT FLOUR, EGG WHITE SOLIDS, NIACIN, IRON, THIAMINE MONONITRATE [VITAMIN B1], RIBOFLAVIN [VITAMIN B2] AND FOLIC ACID), CREAM (DERIVED FROM MILK), CHICKEN, CONTAINS LESS THAN 2% OF: CHEESES (GRANULAR, PARMESAN AND ROMANO PASTE [PASTEURIZED COW'S MILK, CULTURES, SALT, ENZYMES], WATER, SALT, LACTIC ACID, CITRIC ACID AND DISODIUM PHOSPHATE), BUTTER (PASTEURIZED SWEET CREAM [DERIVED FROM MILK] AND SALT), MODIFIED CORN STARCH, SALT, WHOLE EGG SOLIDS, SUGAR, DATEM, RICE STARCH, GARLIC, SPICE, XANTHAN GUM, CHEESE FLAVOR (PARTIALLY HYDROGENATED SOYBEAN OIL, FLAVORINGS AND SMOKE FLAVORING), MUSTARD FLOUR, ISOLATED SOY PROTEIN AND SODIUM PHOSPHATE.

Tuesday, Oct 18/16

TEST THURSDAY

-check homework complete- crossword & 7 FAQ

-Notes on ingredients

-Answers for FAQ & crossword

- work on checking your understanding p. 89 questions 1-9

-Backtrack through chapter 5

questions 1-12, 14, 15, 18

sugar products

white sugar

brown sugar

high fructose corn syrop

honey,

beet cane

stevia

maple syrup

malt syrup

Handout - Frequently Asked Questions

Crossword - Fuel for the body

Check Your Knowledge - Page 89: #1-9

Handout - Backtrack Through Chapter 5

Complete 1-12, 14,15,18

Review concepts

C

Across

14. Indigestible polysaccharides that make up the tough, fibrous cell walls of plants.

15. A hormone secreted by the pancreas to regulate blood glucose levels.

17. Polysaccharides such as starch and fibre, are called _____ carbohydrates

18. a carbohydrate sweetener that is separated from its natural source for use as a food additive is called _____ sugar.

19. a monosaccharide that circulates in the bloodstream and serves as the body's source of energy

20. One of the six classes of nutrients that includes sugars, starches and fibers.

Frequently Asked Questions about Carbohydrates
(Page 84)

1. Are starchy foods fattening?
2. Is sugar a hazard to your teeth?
3. Does sugar cause hyperactivity?
4. Is sugar addictive?
5. Will too much sugar cause diabetes?
6. What is hypoglycemia?
7. What is lactose intolerance?

Frequently Asked Questions about Carbohydrates
(Page 84)

1. Are starchy foods fattening? No, they are not, topping such as butter, cream sauces add fat, which can lead to weight gain. Gram per gram carbs & protein have the same amount of calories.

2. Is sugar a hazard to your teeth?
Sugar and starches can promote tooth decay. Risk is associated with the type of food and when you eat it. Some stick to teeth more than others, some eaten between meals tend to be more harmful then if eaten during a meal. Avoid carb-rich foods between meals, if you do have them drink water to remove particles left behind.

3. Does sugar cause hyperactivity?
Research has found no proof that consuming sugars causes behaviour changes in most people.

4. Is sugar addictive?
Research shows animals lacking a nutritious diet will eat excessive amounts of sugar whereas a diet of a variety of food seems to be less dependant on sugar. No it is not addictive, it may be more of a psychological than physiological issue.

5. Will too much sugar cause diabetes?
No it does not cause diabetes, diabetes is either the pancreas is not able to make insulin (Type I) or the body cells do not respond well to the insulin the pancreas does make. (Type II)

6. What is hypoglycemia?
It is a low blood glucose level, too much insulin causes a quick drop in blood sugar, thereby limiting the glucose required for the central nervous system.

7. What is lactose intolerance?
It is the inability to digest lactose, the main carbohydrate in milk. These people are lacking the enzyme lactase which breaks the lactose down.

Crossword answers
across
1 diabetesmellitus
2. insoluble
5. caries
7 hypoglycemia
9. sugars
10. starch
12. hormone
13. simple
14 fibre
15. insulin
17. complex
18. refined
19. glucose
20. carbohydrates

Down
1. disaccharide
3. satiety
4. polysaccharide
6. monosaccharide
8. supplement
11. glycogen
13. soluble
16. lactose

Pg 89

Check your knowledge

1. glucose, fructose galactose - mono
sucrose, lactose, maltose - di

2. simple are made up of one or two sugar molecules
complex are made up of more than two sugar molecules - more time for body to digest

3. Body will draw upon protein for energy needs

4. Fiber makes you feel full, slows the rate of the stomach empties, usually lower calories, clean out your digestive tract.

5. true

6. 2/3 stored in muscle - used for muscular activities
1/3 in the liver - used for everything else in the body

7. Naturally occurring tend to be accompanied by other good nutrients refined sugars are not, typically other low nutrient ingredients.

8. 3000 calorie - min 20% 600 cal from carbs

9. whole grain breads & cereals, veggies, fruits, beans

Backtrack through chapter 5

1. Sugars, fibers & starches

2. Carbon, hydrogen and oxygen

3. They breakdown to monosaccharides- for the body to use- ie glucose

4. simple- fruit, candy, soda, milk, syrup, malt grain,

complex- ww bread, beans, vegetables, rice, pasta, cereal

5. 1. Provides energy

2. spare protein for actual function

3. breaks down fats

4. provides bulk- digestion works properly

6. Prevents - heart disease, diabetes, diarrhea

appendicitis, colon cancer

7. Refined sugars & natural

8. no more than 25%

at least 20%

9. 4 cal/gram carbs

10. Thirsty, hunger, dizziness, nausea, numbness in legs, feet, fingers,

Backtrack

11. It is the preferred source, and is the most efficient energy source.

12. If there is not carbohydrates the body will use the proteins for energy, this takes the proteins away from their main function of building and maintaining cell structures, muscles, etc.

14. Complex carbs have more nutrients, stay with you longer, help meet fiber requirements, contains vitamins.

15. Look at ingredient list (ordered high weight to lowest) and nutrition label - lists 24 g of sugar per 1/2 cup serving.

18. males- 38 g

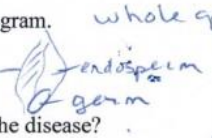
females - 26 g

Chapter 5 - test review.doc

ANSWERS

Nutrition for Healthy Living 120

Study Guide Chapter 5

1. List and describe the **3 types of carbohydrates**. Name examples.
   Monosaccharides: glucose - blood; fructose sugar/honey; galactose - milk
   Disaccharides: - sucrose - sugar; - lactose - in milk; - maltose - grains/malt
   Polysaccharides: Starch - pasta, pota; fiber, beans legu
2. The three common chemical elements that make up carbohydrates are…
   H - hydrogen C carbon O oxygen
3. The four key functions performed by carbohydrates are….
   (1) Provide Energy (3) Break down fats
   (2) Spare Proteins (4) Provide Bulk for digestion
4. A variety of studies have shown that dietary fiber plays a role in promoting wellness. What four things can dietary fiber help prevent. constipation, lower rates of GI diseases, prevent appendicitis - lower risk of heart & artery disease, reduce ris - help control diabetes of color cance
5. Refined sugars are used for…
   Sweetning agent / food additives/bulk
6. Why do some people not lose weight when they eat fat reduced products?
   So much sugar added to product for taste.
7. Where does the body store glycogen? liver + muscle
8. Body glycogen usage is 1/3 in liver for rest of body use
   2/3 in muscle for muscular activities
   Can the liver store a certain amount?
   limited amount | too much carbs converts to fat by liv
9. Added sugar intake should be no more than 25 % of a day's total intake.
10. Sugar provides 4 calories per gram.
11. Starches (complex carbs) should be a minimum of 20 % of days total calorie intake.
12. the DRI for males fiber intake 38 g
13. the DRI for females fiber intake 26 g
14. Describe a whole grain vs refined grains, include diagram.
    refined on endosperm (no fiber/no nutrients)
    

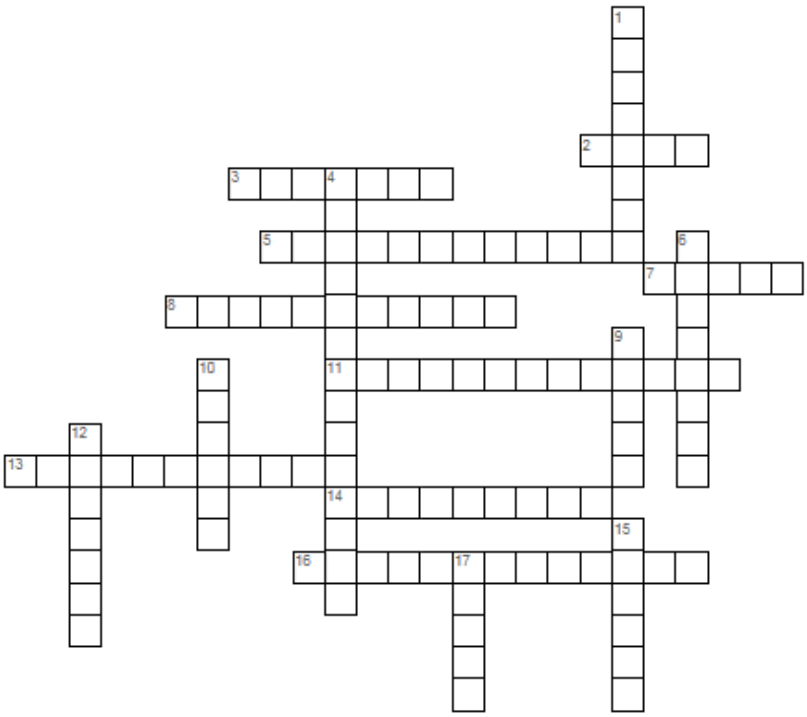
    whole grain has the bran - fib germ nutrients endosperm - starche
15. What is diabetes mellitus & list a few symptoms of the disease?
    lack of or inability to use hormone insulin
    • hunger + thirst, weakness, irritability, nausea,
16. Explain why it is better to get fiber through food sources than from a supplement.
    Do not offer the range of nutritional benefits of food sourced fib
17. How can you use a food label to help you meet your carbohydrate needs?
    Check the amount of carbs, look at ingredients to see if good or b carbs
18. How are foods order in the ingredient list?
    highest weight listed order
19. How would you respond if someone asked you, "Should I cut starchy foods out of my diet because they are fattening?"
    No starchy foods are not fattening if eaten in moderation toppings tend to be fatty, although excess carbs can be cnv into fat by liver!

TEST TODAY

After the test use the 'Nutrition Action' magazines to find 3 facts to share with the school in regards to nutrition.

- Make a poster on the information or facts.
- Keep in mind these will be displayed around the school so make them, NEAT, and keeps it short & sweet so they will be remembered facts!!

(1 fact or information per page - illustrations or pictures should be included if possible)

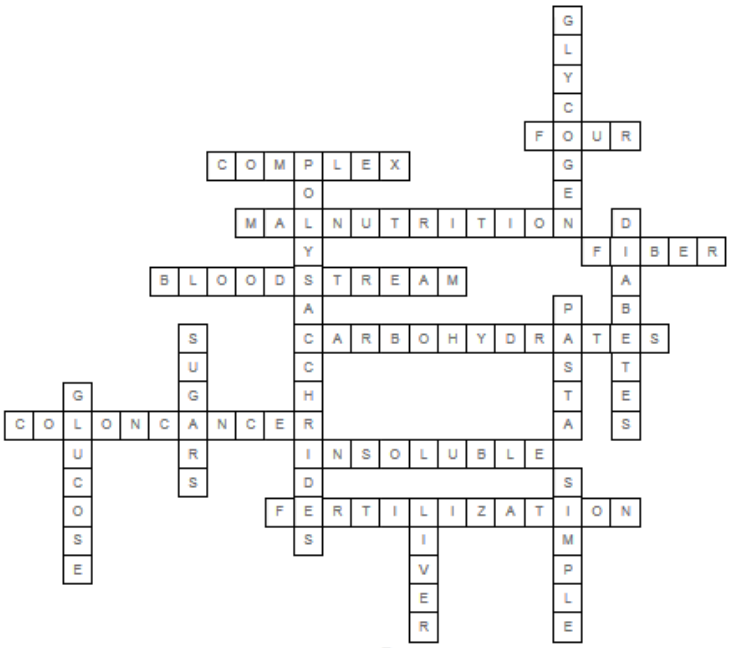


Across

2 Number of calories in a carb
3 Also called starches
5 Not getting enough carbohydrates can result in
7 Cannot be digested by humans
8 Your body breaks carbs down into simple sugars and they are absorbed into the
11 Found in most things you eat; provides energy for the body
13 Fiber can help prevent
14 A type of fiber that cannot be dissolved in water
16 Carbohydrates are actively involved in this process (women)

Down

1 The form in which glucose is stored
4 Complex Carbohydrates composed of numerous monosacchrides combined
6 A chronic disease that can be caused by taking in too many carbohydrates
9 Example of complex sugar (football players eat this before a game)
10 Carbohydrates are made up of
12 An important energy source needed by all the cells and organs
15 This type of carbohydrate has one or two sugars
17 One of the places where extra glucose is stored



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Attachments

Standard_Deviants_School_Human_Nutrition__Macronutrients__Carbohydrates.wmv

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