

Carbohydrates: Dietary Guidelines for Americans

Carbohydrates

1. Sugars
2. Starch (complex)
3. Fiber (complex)

Recommended Dietary Allowance

(RDA)= **130** grams of carbohydrate
(sugars + starch) per day

RDA: to meet needs of most people

Why only 130 grams/day?

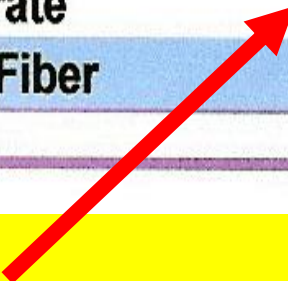
Answer: **130** grams = amount needed
brain ← glucose ←

BUT: At bottom of Food Label
(Nutrition Facts):

Total Carbohydrate: **300** grams/day =
Daily Value (recommendation based on
2000 calorie reference)

Examples of DVs versus %DVs Based on a 2,000 Calorie Diet

<u>Nutrient</u>	<u>DV</u>	<u>%DV</u>	<u>Goal</u>
Total Fat	65g	= 100%DV	Less than
Sat Fat	20g	= 100%DV	Less than
Cholesterol	300mg	= 100%DV	Less than
Sodium	2400mg	= 100%DV	Less than
Total Carbohydrate	300g	= 100%DV	At least
Dietary Fiber	25g	= 100%DV	At least



130 grams/day for brain

vs.

300 grams/day recommended
value

Why extra carbohydrate?

Answer: all daily **activities/growth**
children

Total Carb = Sugars + Starch + Fiber



Total Carbohydrate <u>40g</u>	13%	15%
Dietary Fiber <u>6g</u>	24%	24%
Soluble Fiber 1g		
Insoluble Fiber 5g		
Sugars <u>0g</u>		
Other Carbohydrate <u>34g</u>		

INGREDIENTS: WHOLE GRAIN WHEAT. TO PRESERVE THE NATURAL WHEAT FLAVOR, BHT IS ADDED TO THE PACKAGING MATERIAL.

KRAFT FOODS GLOBAL, INC.
NORTHFIELD, IL 60093-2753 USA



Kraft Foods



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EXCHANGE: 2-1/2 Starch. Dietary Exchanges based on *Exchange Lists for Meal Planning* © 2003 by the American Diabetes Association and the American Dietetic Association.

QUESTION

1. How many calories are in **300** grams of carbohydrate?
2. What is this number as % of total daily calories*

*Use reference diet: **2000** calories/day

ANSWER:

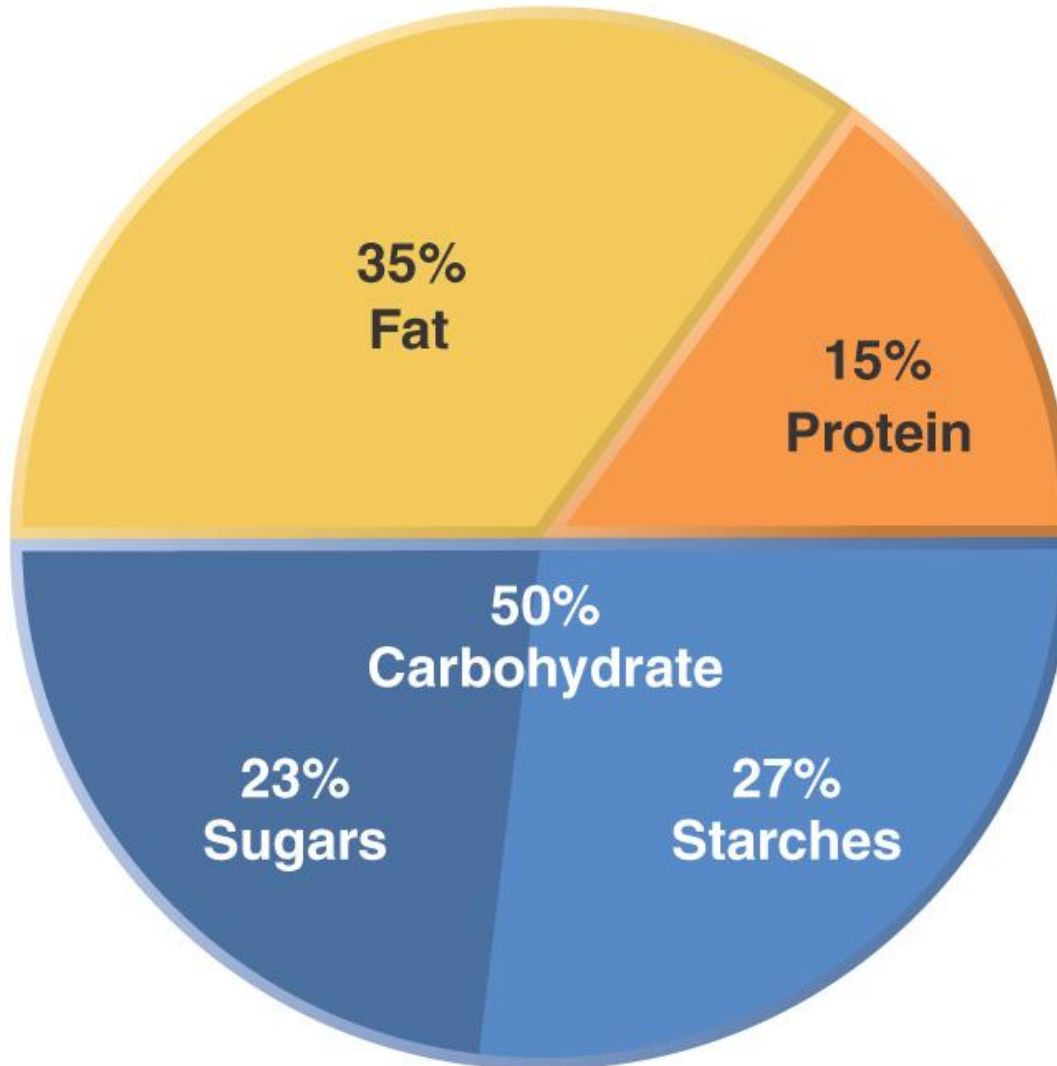
$$300 \times 4 \text{ calories/gram} = 1200 \text{ calories}$$

$$1200/2000 = 0.6 \times 100 = 60\%$$

Carbs as % of total calories

- Varies depending upon your energy needs (**activity**)
- Flexible: acceptable range:
45-65% of total calories
- Low Carb diets (< 35% calories):
difficulty adherence

Average Percentage of Calories per Person (One Day)



Fiber: Good Sources

- **Whole grain foods**
- **Fruits**
- **Vegetables**
- **Peas**
- **Beans**

Fruit Juices (OJ)

- Not much fiber
- Some OK = beneficial nutrients/minerals
- **Best:** eat whole fruit (fresh, frozen, canned, dried)

Another way to look at carbs:

Natural Carbohydrate

VS.

Added Sugars

Natural:

Fruits

Vegetables

Whole Grains

Milk Products (low fat)

Advantages:

**Energy + Nutrients (vitamins,
minerals)**

↓ calories

Added Sugars: “**added**” by food manufacturer, cooks, or you

Examples: soft drinks, candy, cakes, cookies, pies, fruit drinks, ice cream, sweetened yogurt, sweetened milk, cinnamon toast, honey nut waffles

Plain Yogurt

Nutrition Facts

Serving Size 1 container (226g)

Amount Per Serving

Calories 110 **Calories from Fat** 0

	% Daily Value*
Total Fat 0g	0 %
Saturated Fat 0g	0 %
Trans Fat 0g	
Cholesterol Less than 5mg	1 %
Sodium 160mg	7 %
Total Carbohydrate 15g	5 %
Dietary Fiber 0g	0 %
Sugars 10g	
Protein 13g	
Vitamin A 0 % • Vitamin C 4 %	
Calcium 45 % • Iron 0 %	

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

Fruit Yogurt

Nutrition Facts

Serving Size 1 container (227g)

Amount Per Serving

Calories 240 **Calories from Fat** 25

	% Daily Value*
Total Fat 3g	4 %
Saturated Fat 1.5g	9 %
Trans Fat 0g	
Cholesterol 15mg	5 %
Sodium 140mg	6 %
Total Carbohydrate 46g	15 %
Dietary Fiber Less than 1g	3 %
Sugars 44g	
Protein 9g	
Vitamin A 2 % • Vitamin C 4 %	
Calcium 35 % • Iron 0 %	

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

Plain Yogurt - contains no added sugars

INGREDIENTS: CULTURED PASTEURIZED GRADE A NONFAT MILK, WHEY PROTEIN CONCENTRATE, PECTIN, CARRAGEENAN.

Fruit Yogurt - contains added sugars

INGREDIENTS: CULTURED GRADE A REDUCED FAT MILK, APPLES, HIGH FRUCTOSE CORN SYRUP, CINNAMON, NUTMEG, NATURAL FLAVORS, AND PECTIN. CONTAINS ACTIVE YOGURT AND L. ACIDOPHILUS CULTURES.

Added sugars: 3 strikes

1. Cavities: sugary food (mouth)
tooth decay ← enamel ← acid ← bacteria

```
graph RL; bacteria --> acid; acid --> enamel; enamel --> tooth_decay; tooth_decay --- tooth;
```

2. Calories: but few **nutrients**
(children cheated of nutrients)

3. Weight gain: ↑ added sugars
↑ weight

Liquid Calories

Americans: **22%** of total calories =
Beverages

Many have **“added”** sugars

Read ingredients

Many people don't **“count”** liquid
calories

Framingham Osteoporosis Study: Women drinking **3** cans or more of **cola/week**: lower hip bone density



Problem with **food labels**

Sugars = Natural + Added

(not separated)

Quick Guide to %DV:

	% Daily Value*
Total Fat 12g	18%
Saturated Fat 3g	15%
<i>Trans</i> Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamins and Minerals	
Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

How to find “**added**” sugar: **READ INGREDIENTS**

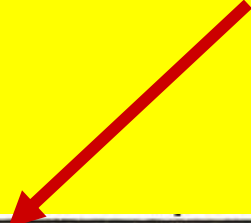
Food Label Key Words:

[other words for “added” sugar]

brown sugar, corn sweetener, corn syrup, dextrose, fructose, fruit juice concentrates, glucose, high-fructose corn syrup, honey, invert sugar, lactose, maltose, malt syrup, molasses, raw sugar, sucrose, sugar, syrup



Whole grain wheat



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EXCHANGE: 2-1/2 Starch. Dietary Exchanges based on *Exchange Lists for Meal Planning* © 2003 by the American Diabetes Association and the American Dietetic Association.

with **General Mills**
Whole Grain



GOOD SOURCE OF FIBER



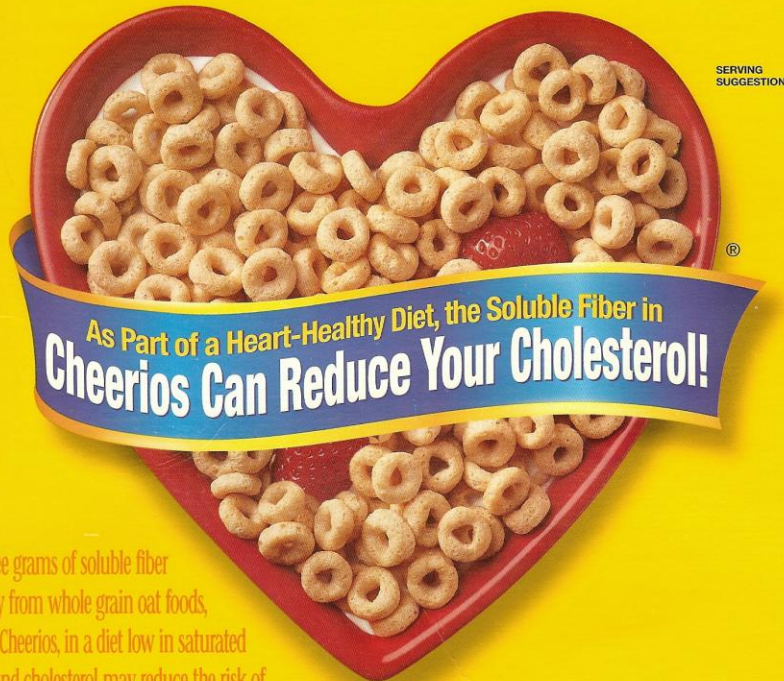
1g 1 GRAM OF SUGAR



110 110 CALORIES PER SERVING

Cheerios

Toasted Whole Grain Oat Cereal



SERVING SUGGESTION

Three grams of soluble fiber daily from whole grain oat foods, like Cheerios, in a diet low in saturated fat and cholesterol may reduce the risk of heart disease. Cheerios provides 1 gram per cup.

© NET WT 15 OZ (425g)

Corn starch Sugar

INGREDIENTS: WHOLE GRAIN OATS, MODIFIED CORN STARCH, CORN STARCH, SUGAR, SALT, CALCIUM CARBONATE, OAT FIBER, TRIPOTASSIUM PHOSPHATE, WHEAT STARCH. VITAMIN E (MIXED TOCOPHEROLS) ADDED TO PRESERVE FRESHNESS.

VITAMINS AND MINERALS: IRON AND ZINC (MINERAL NUTRIENTS), VITAMIN C (SODIUM ASCORBATE), A B VITAMIN (NIACINAMIDE), VITAMIN B₆ (PYRIDOXINE HYDROCHLORIDE), VITAMIN B₂ (RIBOFLAVIN), VITAMIN B₁ (THIAMIN MONONITRATE), VITAMIN A (PALMITATE), A B VITAMIN (FOLIC ACID), VITAMIN B₁₂, VITAMIN D.

DISTRIBUTED BY **General Mills Cereals, LLC**
GENERAL OFFICES, MINNEAPOLIS, MN 55440 USA
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Exchange: 1½ Starch

Exchange calculations based on the *Exchange Lists for Meal Planning*.

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This package is sold by weight, not by volume. You can be assured of proper weight even though some settling of contents normally occurs during shipment and handling.



American Heart Association

Meets American Heart Association food criteria for saturated fat and cholesterol for healthy people over age 2.

While many factors affect heart disease, diets low in saturated fat and cholesterol may reduce the risk of this disease.

High fructose corn syrup

Sugar



INGREDIENTS: MILLET CORN, SUGAR, MALT FLAVORING, HIGH FRUCTOSE CORN SYRUP, SALT,
VITAMINS AND IRON: IRON, NIACINAMIDE, SODIUM ASCORBATE AND ASCORBIC ACID (VITAMIN C), PYRIDOXINE HYDROCHLORIDE (VITAMIN B₆), RIBOFLAVIN (VITAMIN B₂), THIAMIN HYDROCHLORIDE (VITAMIN B₁), VITAMIN A PALMITATE, FOLIC ACID, VITAMIN B₁₂ AND VITAMIN D. TO MAINTAIN QUALITY, BHT HAS BEEN ADDED TO THE PACKAGING.

**CORN USED IN THIS PRODUCT
CONTAINS TRACES OF SOYBEANS.**

Dietary Guidelines Recommendations

Get most of your CARBS from:

- Whole Fruits**
- Veggies**
- Whole Grains**
- Low-fat milk products**

Limit: added sugars

Dietary Guidelines Recommendations

Fiber

25-28 grams/day