



# Making Carbs Count

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# Hot off the press: Joint association of food nutritional profile by Nutri-Score front-of-pack label and ultra-processed food intake with mortality: Moli-sani prospective cohort study *BMJ* 2022; (Published 31 August 2022)

- British Medical Journal
- N = 22,895, Molise region of Italy
- Average age = 55 yo
- Highest ultra-processed food consumption associated with highest risk of all cause and cardiovascular mortality
- Most front of pack labels are to show consumers nutrients, this study look at level of processing

# PLANT-BASED vs. VEGAN

	VEGAN DIET	PLANT-BASED DIET	WHOLE-FOOD, PLANT-BASED DIET
 MEAT & POULTRY	✗	—	—
 SEAFOOD	✗	—	—
 EGGS & DAIRY PRODUCTS	✗	—	—
 OILS	✓	✓	—
 HIGHLY PROCESSED FOODS <small>Refined Sweeteners, Bleached Flours, White Rice</small>	✓	✓	—
 WHOLE GRAINS <small>Including Whole Grain Flours, Breads, Pastas</small>	✓	✓	✓
 FRUITS, VEGGIES, & STARCHY VEGGIES	✓	✓	✓
 LEGUMES	✓	✓	✓

# Carbs – what have you heard?

- Make you fat?
- High calorie?
- Cause diabetes?
- Don't have them if you have diabetes?
- Junk food?
- Make your sugar go up





# THE FOODS YOU'LL LOVE



## Fruits

Apples, bananas, figs, grapes  
strawberries, oranges, etc.

## Veggies

Lettuce, kale, collards,  
peppers, green peas, corn, etc.

## Tubers

Sweet potatoes, potatoes,  
yams, carrots, beets, etc.

## Whole Grains

Millet, quinoa, barley,  
rice, whole wheat, oats, etc.

## Legumes

Kidney beans, chickpeas,  
cannellini beans, lentils,  
black beans, etc.

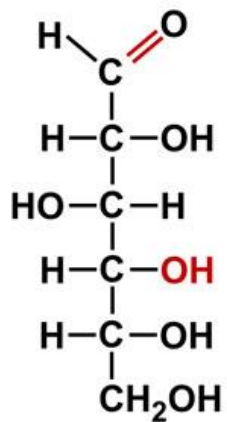
# Carbohydrates

- Carbohydrates = long strings of sugar
- Turn into sugar in the bloodstream
- Carbs with fiber turn into sugar slowly
- 4 calories in every gram of carb
  - 4 calories/g in protein
  - 9 calories/g in fat
- Brain, heart, nervous system love carbs

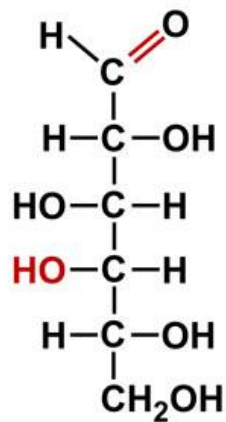




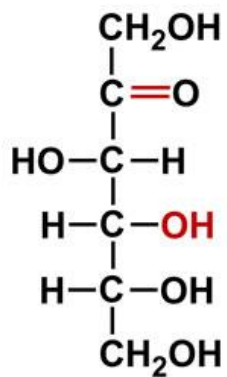
## Carbohydrate Isomers



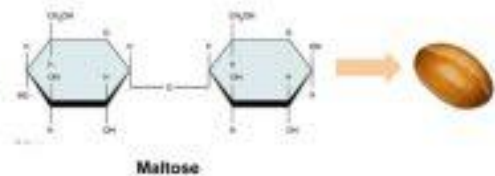
*Glucose*



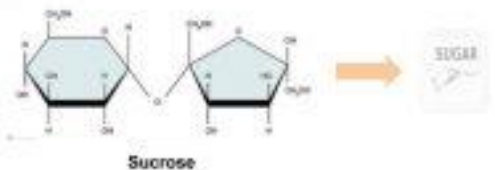
*Galactose*



*Fructose*



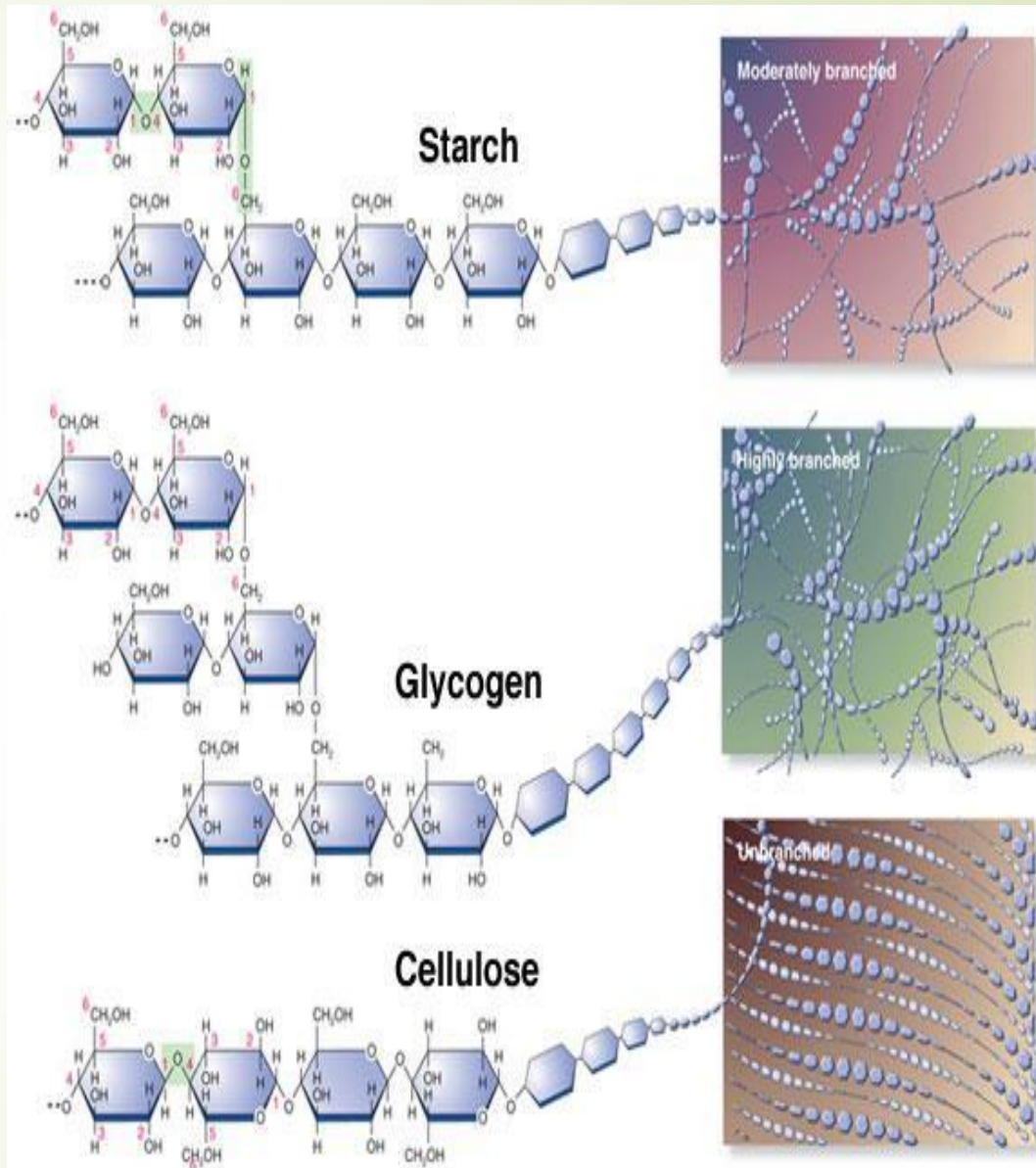
Maltose is formed by two glucose molecules. Maltose is responsible for a slightly sweet taste you experience when chewing bread holding it in your mouth.



Sucrose is formed by linking glucose to fructose. This disaccharide is commonly known as table sugar.



Lactose is formed by the linking of galactose to glucose. This disaccharide is most commonly found in milk products.



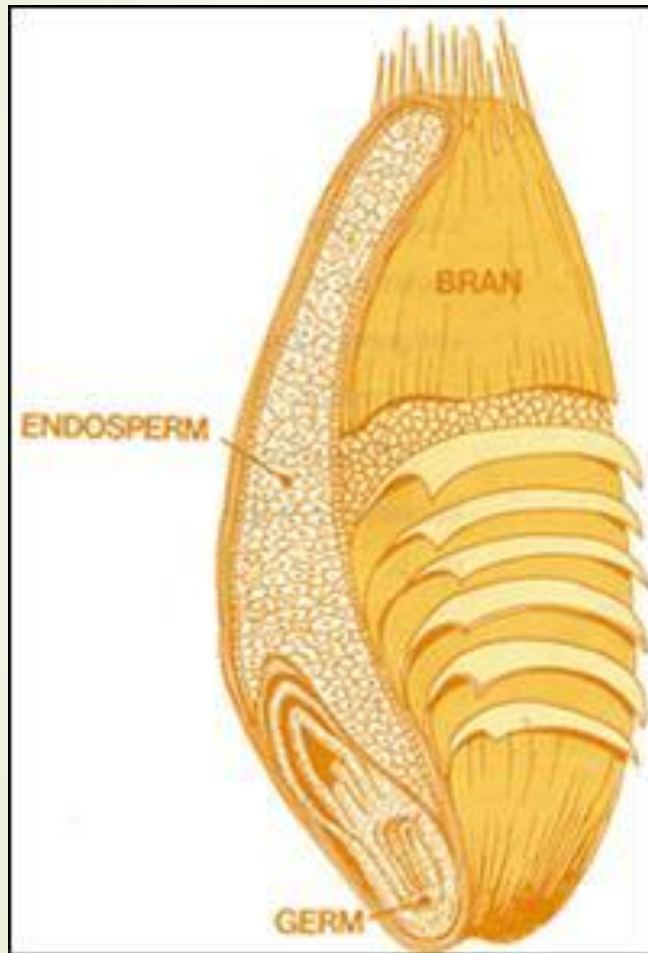
# Which foods are carbs?

- Healthy carbohydrates:
  - Fruits & veggies
  - Starchy Vegetables
    - Corn, peas, potatoes
    - Sweet potatoes, yams, winter squash
  - Whole grains (and refined grains)
  - Some low-fat proteins
    - Beans, lentils, non/low-fat dairy & dairy substitutes
- Carb choices to limit:
  - Processed; white flour & products; sweets





# Whole Grains



# What is an Intact Whole Grain?

- Hierarchy of whole grains:
- Intact whole grain (i.e. oat groats, quinoa, barley)
  - Broken Whole grains (ie bulgur)
  - Rolled Whole Grains (oatmeal)
  - Shredded Whole Grains (shredded wheat)
  - Ground Whole grains (whole wheat flour)
  - Flaked Whole Grains (flaked cereals)
  - Puffed Whole Grains (puffed cereals)



# Try some new whole grains

- Bulgur
- Farro
- Millet
- Quinoa
- Buckwheat
- Barley







# Fiber is a Carb

- ▶ Indigestible part of plants
    - ▶ Fruits & veggies
    - ▶ Beans, lentils, & peas
    - ▶ Nuts & seeds
    - ▶ Whole wheat bread/pasta
    - ▶ Wild/brown rice
    - ▶ Barley, bulgur, quinoa, Israeli couscous & farro
    - ▶ Bran, wheat, & oats
  - Two types of fiber:
    - Insoluble
    - Soluble
- 



# Benefits of Fiber

- Lowers cholesterol (soluble)
- Reduces constipation, hemorrhoids (insoluble)
- Increases feeling of fullness (helps with weight loss)
- Slows blood sugar rise (helps with diabetes)
- Lowers risk of some cancers
  - Colon (decreases transit time, breaks down to butyrate in colon – inhibits tumor growth)
  - Breast (binds to estrogen)
  - Prostate
  - Mouth, esophageal, throat



# Soluble Fiber

- **Benefits**

- Dissolves into a gel-like substance in the intestines
- Blocks cholesterol from being absorbed from intestines into blood stream

- **Sources**

- Oats
- Beans
- Barley
- Pears
- Apples
- Psyllium (Metamucil)



# Insoluble Fiber

- Benefits
  - G.I. health
    - Travels through the digestive tract & creates bulk
    - Helps the colon function properly
- Sources
  - Whole grains (wheat)
  - Fruit & Vegetables
  - Beans, lentils, peas
  - Nuts and seeds

# Serving sizes = 15 grams carb

## ➤ Starches/Grains:

- 1 slice bread
- ½ hamburger bun, hot dog bun, English muffin
- 1/3 cup cooked rice, pasta, quinoa, barley
- ½ cup cooked oats or other hot cereal
- ¾ cup (1 oz) of cold cereal



## ➤ Fruit:

- 1 small piece fruit (= tennis ball)
- ¾-1 cup cut up fruit
- ½ cup juice
- 2 Tbsp dried fruit

**AN APPLE A  
DAY KEEPS THE  
DOCTOR AWAY**



# Serving sizes = 15 grams carb

## ➤ Dairy:

- 1 cup milk or plain yogurt
- 1 cup soy milk
- $\frac{3}{4}$  cup light yogurt



## ➤ Starchy vegetables:

- $\frac{1}{2}$  cup corn, peas, potatoes
- 1 cup winter veggies
- $\frac{1}{2}$  cup beans, lentils





# Sweets



Americans eat too much refined sugar!

On average we eat:

- 20 teaspoons of added sugar per day
- 6 lbs of added sugar per month
- 68 lbs per year



20 tsp./day

per week

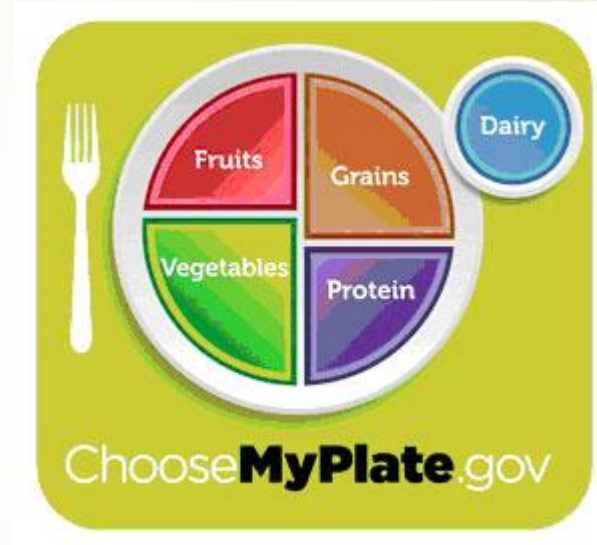
6#/month

68# per year

per lifetime

# Carbohydrates

- How much do you need?
  - Women
    - 30-45 grams per meal
    - 0-15 grams per snack
  - Men
    - 45-60 grams per meal
    - 15-30 grams per snack
- How do you count carbs?
  - Nutrition fact labels
  - Calorieking.com or Calorieking smart phone app or Calorie King book
- NOTE: WFPB plan often don't require counting carbs

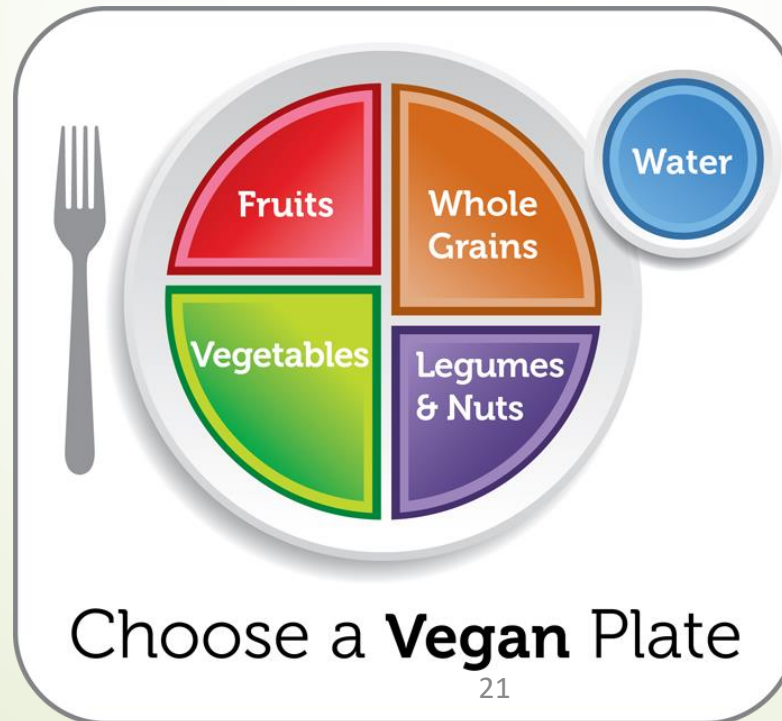


# Nutrition Facts Label

<b>Nutrition Facts</b>	
8 servings per container	
<b>Serving size</b>	<b>2/3 cup (55g)</b>
<hr/>	
<b>Amount per serving</b>	
<b>Calories</b>	<b>230</b>
<hr/>	
	<b>% Daily Value*</b>
<b>Total Fat</b> 8g	<b>10%</b>
Saturated Fat 1g	<b>5%</b>
<i>Trans</i> Fat 0g	
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 160mg	<b>7%</b>
<b>Total Carbohydrate</b> 37g	<b>13%</b>
Dietary Fiber 4g	<b>14%</b>
Total Sugars 12g	
Includes 10g Added Sugars	<b>20%</b>
<b>Protein</b> 3g	
<hr/>	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%
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<small>* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.</small>	

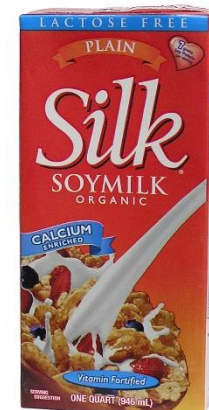
# Carbs in your Meal Planning

- **Fruit** and/or a **vegetable** with every meal
- An intact **whole grain** or starch with every meal
- A **protein** with every meal





# Breakfast Carbs





# Lunch Carbs





# Dinner Carbs



# Bottom Line

- Good quality carbs are important part of diet
- Aim for whole, real-food carbs
- High fiber, intact grains are slow to raise blood sugars
- For diabetes, you may need to budget carbs
  - Test before and after a meal to see the effects of carbs on blood sugars
- Be carb careful





# Whole grain salad bar

## ➤ INGREDIENTS

➤ Whole grain of choice

➤ Add veggies

➤ Add protein

➤ Add fruit

➤ Add herbs

➤ Add dressing

➤ 3-2-1 = 3 parts vinegar, 2 parts mustard, 1 part maple syrup

➤ Fruit juice + vinegar + mustard



# Thank you!

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