



# Nutrition, simplified!

A beginner's guide to making healthy diet choices

Mini Med-School 2017

Dr. Josh Melegrito

# Who am I?



# Nutrition - Why do we care?

- “Lifestyle changes”
  - **DIET**
  - Exercise, smoking/alcohol, stress reduction
- CAD – MI, CVA, death
- DM – MI, CVA, CKD, retinopathy, neuropathy, death
- HTN – MI, Afib/CHF, CVA, death
- Obesity – quality of life, all the above, death
- OP – Hip #, QOL, death
- You are what you eat!

# My goal...

- Eating well is a HABIT, not a fad
- Habits take more than 1hr to form
  - “You can’t teach an old dog new tricks!”
- Provide you with knowledge to use as tools to create healthy eating HABITS!
- *What we won’t be talking about: carb counting, calorie counting, weight loss, gluten, antioxidants, vegan diet, supplements, caffeine, wine*

# Outline

- Nutrition Labels - What does it all mean?!
  - Nutrients 101
  - Serving size
  - Calories
  - DV%
- Special Diets – Heart health and more!
- Getting started – Healthy eating habit tips
- Resources – Your homework (sorry!)

# Nutrition labels

**Serving size**  
Portion size that all the nutrition facts are based on.

**Calories**  
Number of calories per serving

**Total fat**  
Number of grams per serving.

**Saturated fat**  
Number of grams per serving. This type of fat raises blood cholesterol. Foods with more than 1 gram of saturated fat per serving should be limited.

**Trans fat**  
Number of grams per serving. Like saturated fat, trans fat raises blood cholesterol. Choose foods with the lower combined amount of saturated fat and trans fat and low cholesterol.

**Nutrients**  
Shows cholesterol, sodium, sugar and protein amounts per serving.

**Sodium**  
Number of milligrams per serving. Healthy diets limit sodium to 2,400 milligrams each day; however, your doctor may restrict your sodium further.

| Nutrition Facts  |                           |
|--|---------------------------|
| Serving Size   | 3 (120g)                  |
| Servings per container   | 2                         |
| Amount Per Serving   |                           |
| <b>Calories</b>  | <b>180</b>                |
| Calories from Fat 20   |                           |
| % Daily Value*   |                           |
| <b>Total Fat</b> 2.5g  | <b>4%</b>                 |
| Saturated Fat 1g   | <b>4%</b>                 |
| Trans Fat 0g   | <b>0%</b>                 |
| <b>Cholesterol</b> 10mg  | <b>4%</b>                 |
| <b>Sodium</b> 430mg  | <b>18%</b>                |
| <b>Total Carbohydrate</b> 34g  | <b>11%</b>                |
| Dietary Fiber 2g   | <b>3%</b>                 |
| Sugars 3g  |                           |
| Other carbohydrate 30g   |                           |
| <b>Protein</b> 7g  |                           |
| Vitamin A 0% • Vitamin C 0%  |                           |
| Calcium 4% • Iron 8%   |                           |
| Thiamin 15% • Riboflavin 10%   |                           |
| Niacin 8%  |                           |
| * 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         |
| Sat Fat  | Less than 20g 25g         |
| Cholesterol  | Less than 300mg 300mg     |
| Sodium   | Less than 2,400mg 2,400mg |
| Total Carb.  | 300g 375g                 |
| Dietary Fiber  | 25g 30g                   |
| Calories per gram:   |                           |
| Fat 9 • Carbohydrate 4 • Protein 4   |                           |
| Ingredients: Water, enriched flour, (flour, niacin, iron, thiamin, riboflavin, folic acid), hydrolyzed soy protein, dehydrated cheese, eggs, margarine, salt, dehydrated onions, spices. |                           |

**Calories from fat**  
Number of calories per serving that come from fat.

**% Daily Value**  
A percentage of daily intake in a serving, based on a 2,000-calorie diet. This is of limited value when selecting foods.

**Fiber**  
Number of grams of fiber per serving. Most people should aim for 25 or more grams of dietary fiber per day.

**Daily Value chart**  
Recommended daily intake of key nutrients, for both 2,000- and 2,500-calorie diets. Your calorie needs may be more or less than this amount.

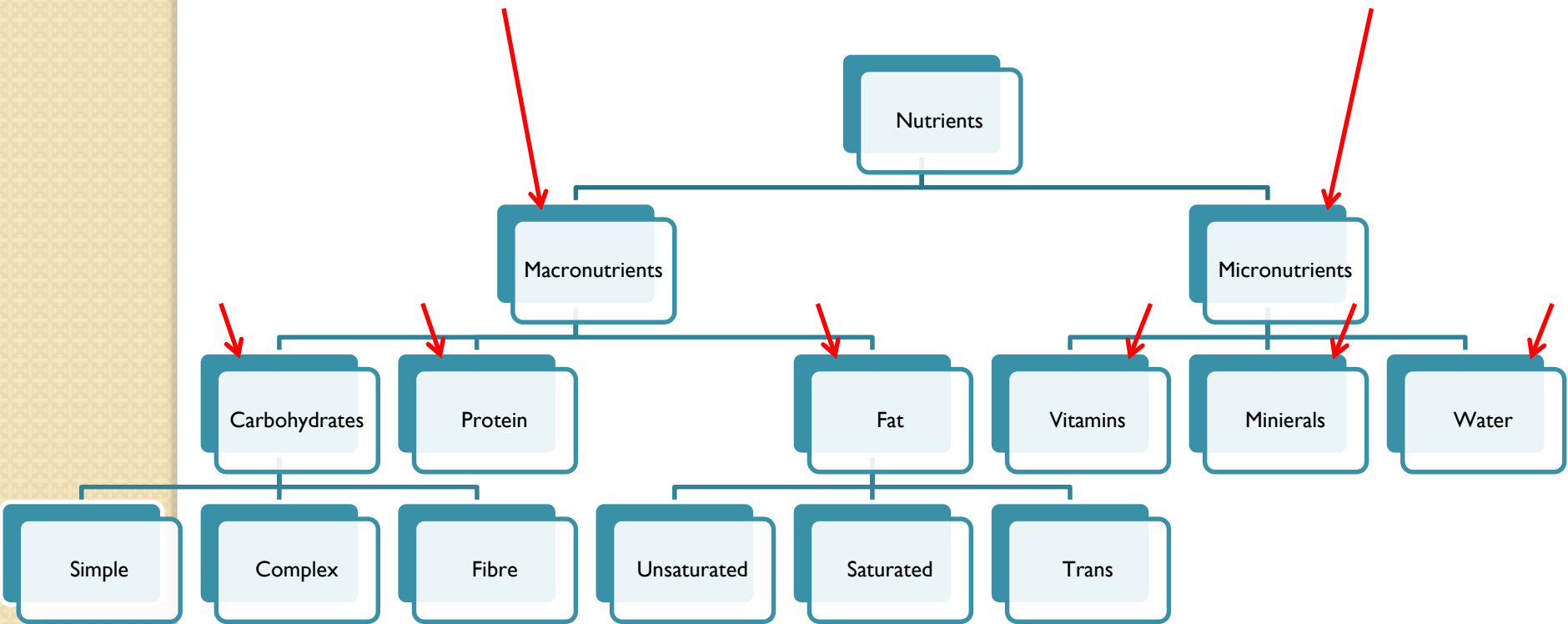
**Calories chart**  
Number of calories per gram of fat, carbohydrate, and protein.

Calories

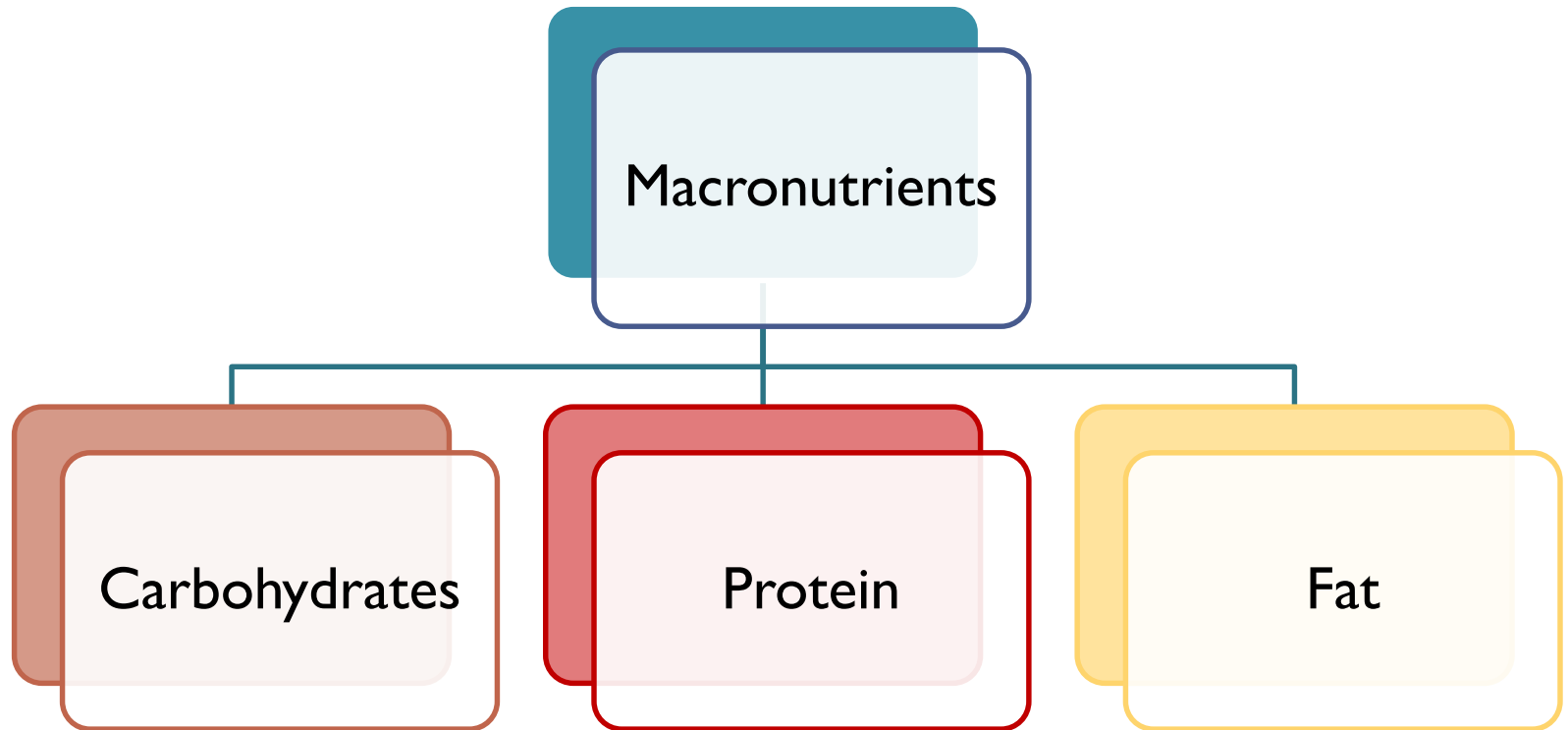
Macronutrients

Micronutrients

# Nutrients

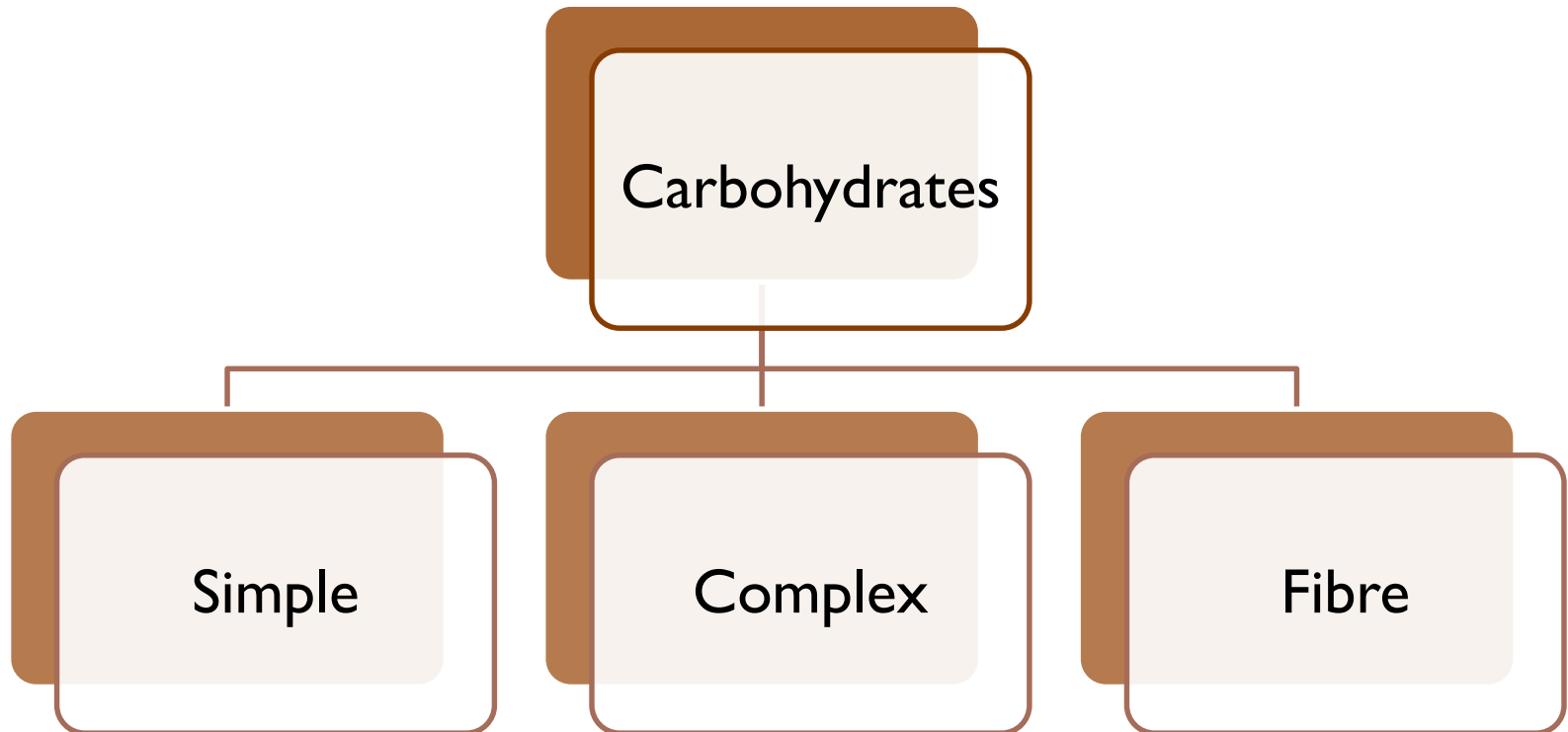


# Macronutrients



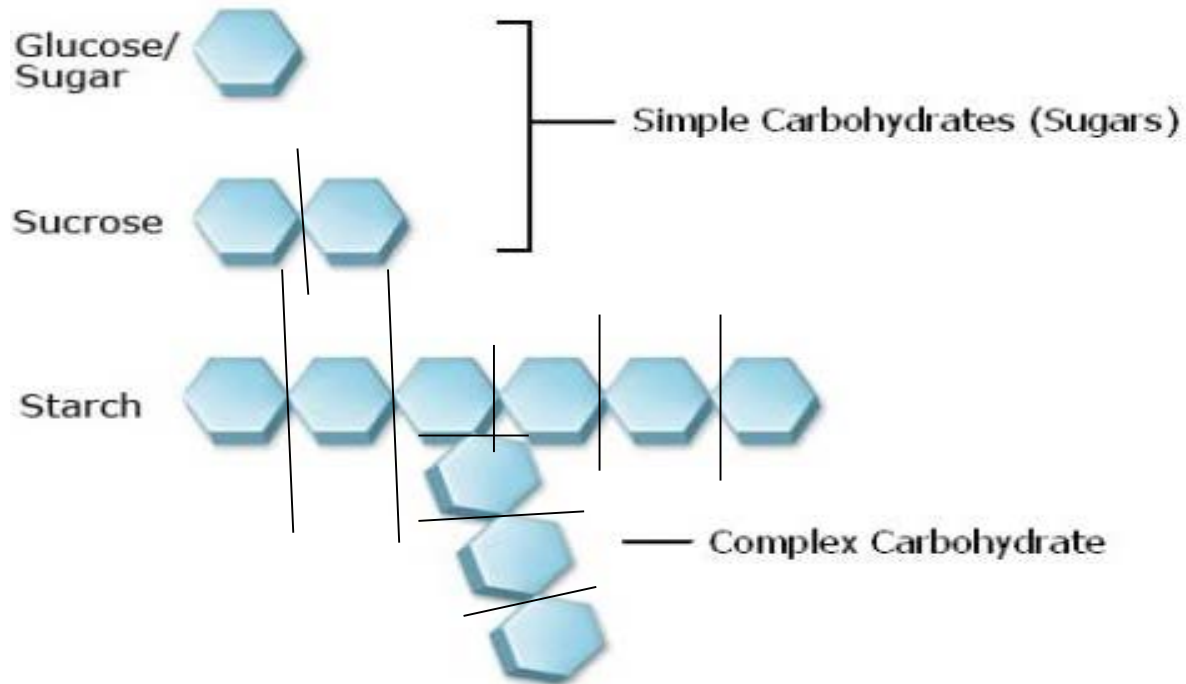


# Carbohydrates



# Carbs = Energy

- 45-65% of your calories
- Simple: quickly metabolized sugars
  - honey, syrup, fruit, candy
- Complex: chains of sugars that take time to be metabolized
  - bread, pasta, legumes



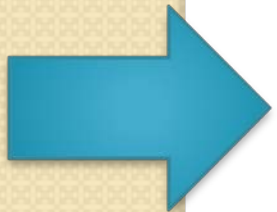
# Glycemic Index

- A measure of how drastically foods increase blood glucose
- Generally, select **low Glycemic Index** foods and avoid **high Glycemic Index**

| Low | High          |
|-----|---------------|
|     | French fries  |
|     | White rice    |
|     | White flour   |
|     | “Corn Flakes” |
|     | Crackers      |
|     | Ice cream     |

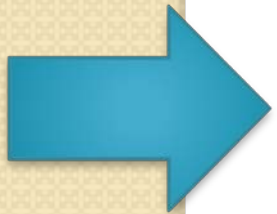
# Fibre

- Indigestible carbohydrates from plants
  - Support digestion
  - Decreased heart disease, stroke, diabetes
  - More satiating
- 25-38 grams/day
- Everybody poops!
- Choose whole wheat, veggies, and real fruit

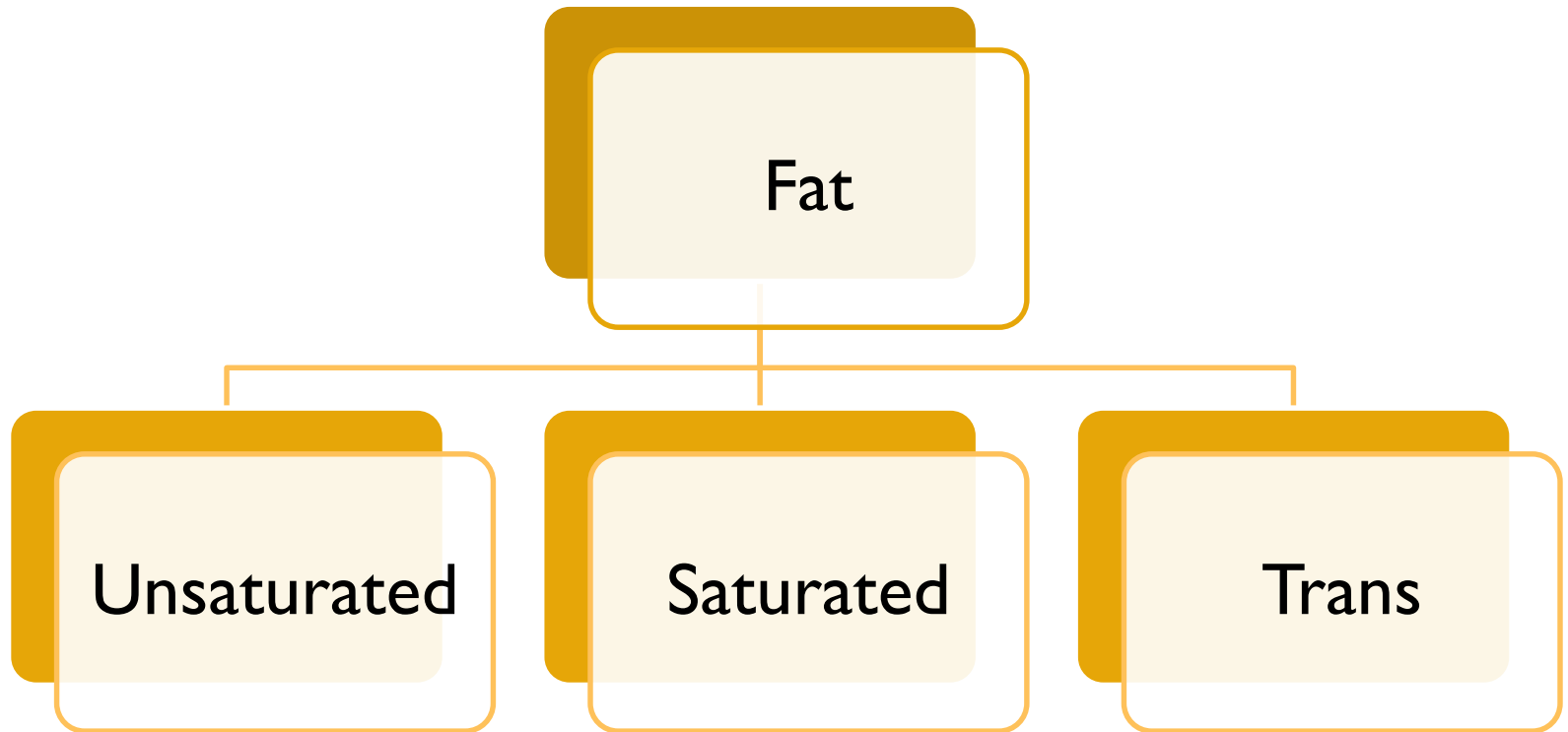


# Protein

- 10-35% of calories
- Proteins are chains of Amino Acids
- Amino Acids: the body's building blocks
  - Muscles, ligaments, skin, hair, nails
- Found in meat, eggs, dairy, nuts, beans
  - Choose lean sources of protein
- Include protein with each meal and snack



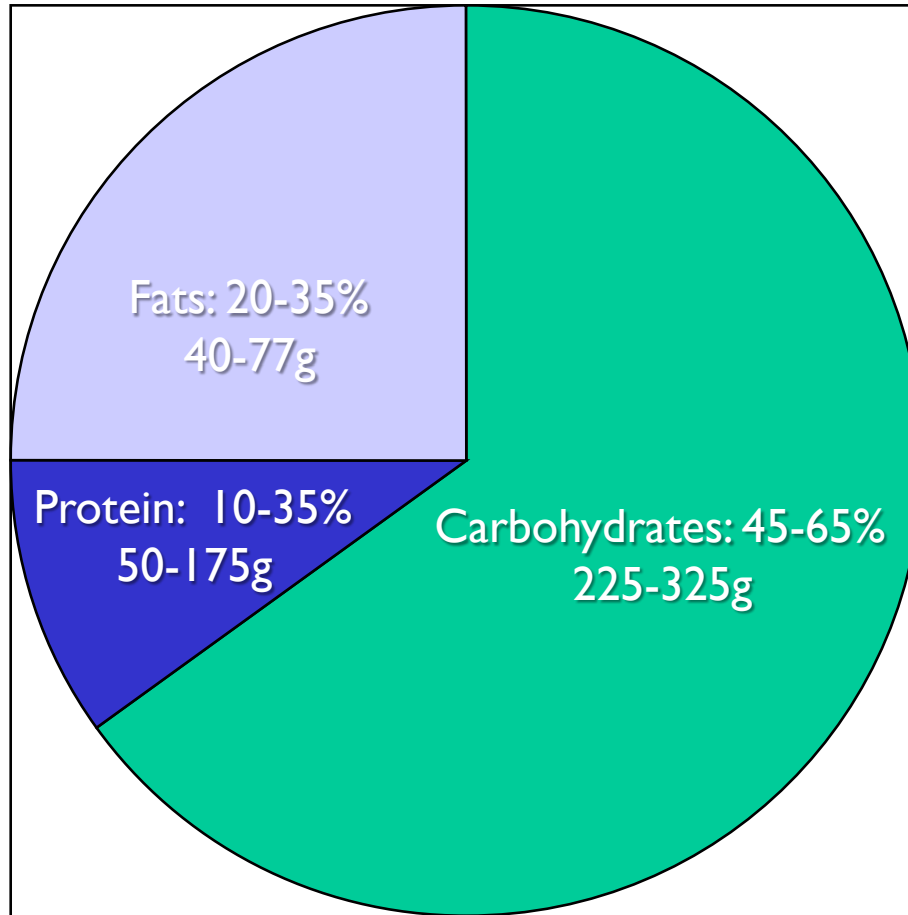
# Fat



# What's the skinny on fat?

- 20-35% of calories
- Necessary for energy, vitamin absorption, metabolic processes in the body
- **CHOOSE** unsaturated fat
  - Liquid at room temperature
  - Fish, vegetable/seed/nut oil, nuts
- **AVOID** saturated fat
  - Solid at room temperature
  - Animal fat, dairy
- **NEVER** trans fat
  - Processed, deep fried, prepared foods

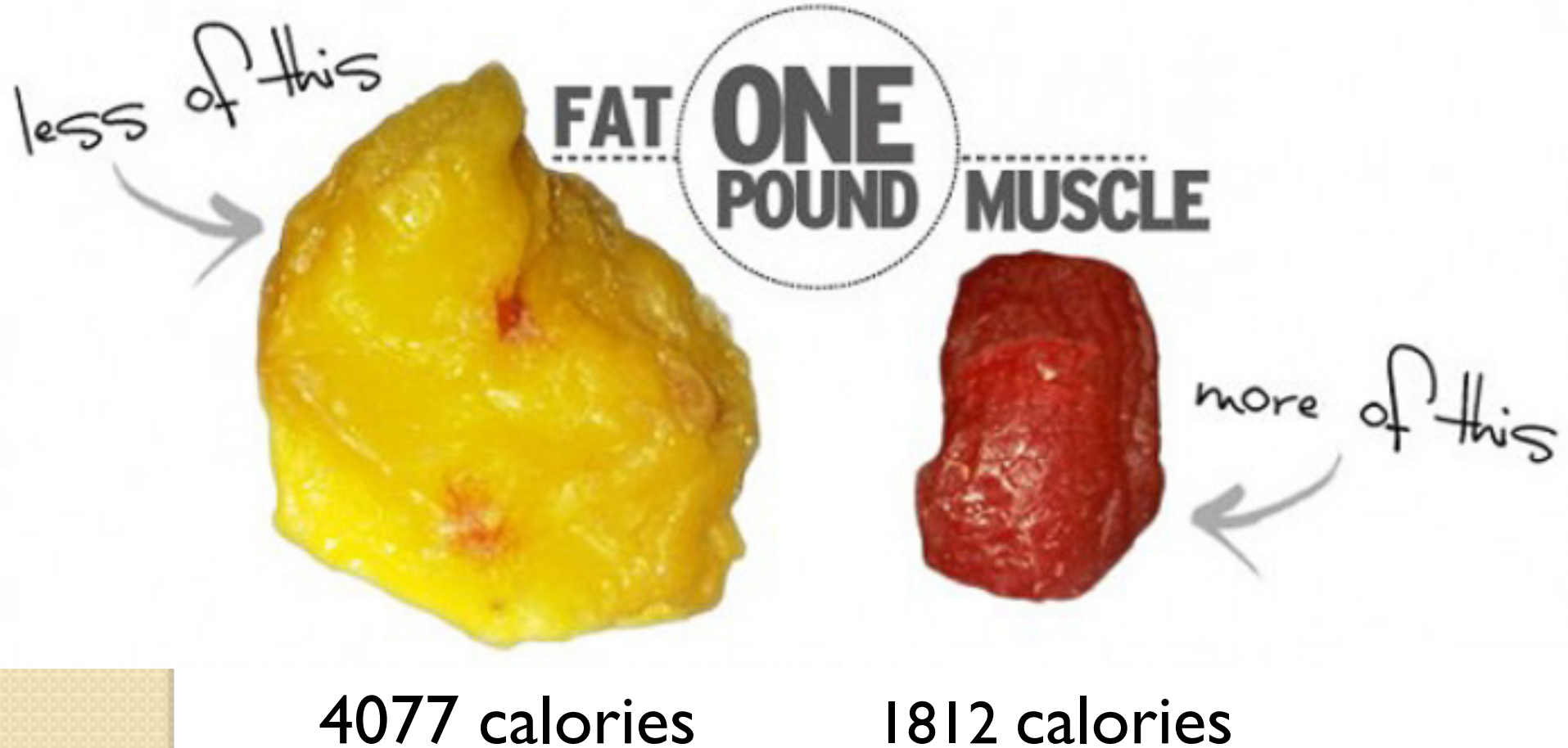
# Calories - FYI



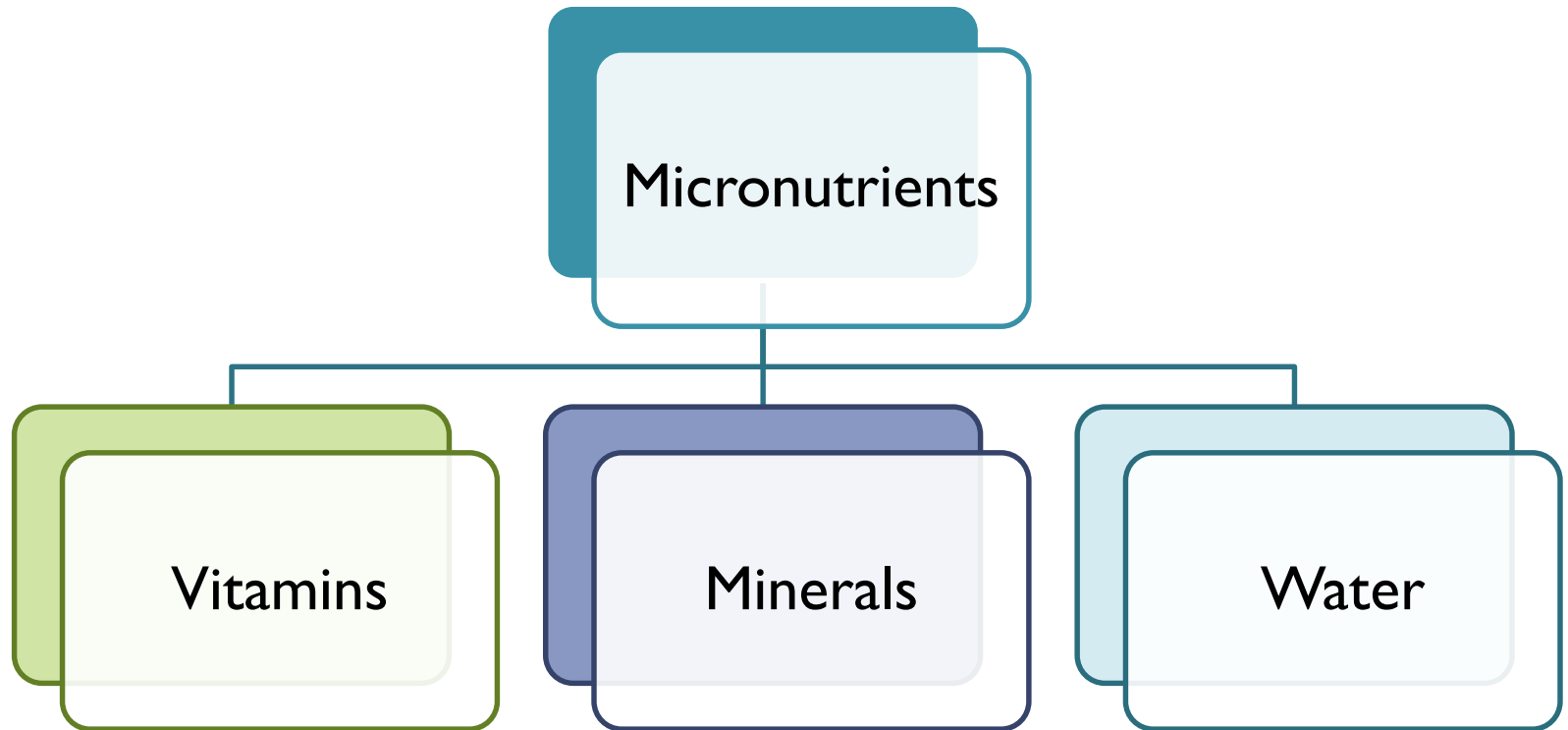
-  **Carbohydrates**
-  **Protein**
-  **Fats**



# Calories - FYI



# Micronutrients



# Vitamins

- Many different small biological compounds
- Necessary for numerous metabolic functions
  - Vitamin D – bone health
  - Folate – in pregnancy
- Choose varied, real foods
  - Vitamins are needed in small amounts, but found in various foods
  - Choose dark green and orange fruits and vegetables

# Minerals

- Many different elemental ions
- Necessary for metabolism
  - Iron – for producing hemoglobin
  - Sodium – contributes to high blood pressure
- Choose varied, real foods
  - Minerals are needed in small amounts, but found in various foods
  - Choose dark green and orange fruits and vegetables
- Avoid added salt (sodium) usually found in prepackaged foods

# Water

- Necessary for... everything!
  - Moves nutrients and waste
  - Aids digestion, keeps your bowels regular
  - Regulates temperature
- No true answer for how much you'll need
  - “8 glasses a day” is false!
- Choose water, milk, low-sodium soup
- Drink when you're thirsty
- Drink when your urine is **dark**

# Labels!

## Cracker A

### Nutrition Facts

Per 9 crackers (23 g)

| Amount | % Daily Value |
|--------|---------------|
|--------|---------------|

**Calories** 90

**Fat** 4.5 g 7 %

Saturated 2.5 g 13 %  
+ Trans 0 g

**Cholesterol** 0 mg

**Sodium** 275 mg 12 %

**Carbohydrate** 12 g 4 %

Fibre 1 g 4 %  
Sugars 0 g

**Protein** 3 g

|           |     |           |     |
|-----------|-----|-----------|-----|
| Vitamin A | 0 % | Vitamin C | 0 % |
|-----------|-----|-----------|-----|

|         |     |      |     |
|---------|-----|------|-----|
| Calcium | 2 % | Iron | 8 % |
|---------|-----|------|-----|

## Cracker B

### Nutrition Facts

Per 4 crackers (20 g)

| Amount | % Daily Value |
|--------|---------------|
|--------|---------------|

**Calories** 85

**Fat** 2 g 3 %

Saturated 0.3 g 2 %  
+ Trans 0 g

**Cholesterol** 0 mg

**Sodium** 90 mg 4 %

**Carbohydrate** 15 g 5 %

Fibre 3 g 12 %  
Sugars 1 g

**Protein** 2 g

|           |     |           |     |
|-----------|-----|-----------|-----|
| Vitamin A | 0 % | Vitamin C | 0 % |
|-----------|-----|-----------|-----|

|         |     |      |     |
|---------|-----|------|-----|
| Calcium | 2 % | Iron | 7 % |
|---------|-----|------|-----|

# Serving size

## Cracker A

### Nutrition Facts

Per 9 crackers (23 g)

| Amount | % Daily Value |
|--------|---------------|
|--------|---------------|

**Calories** 90

**Fat** 4.5 g 7 %

Saturated 2.5 g 13 %  
+ Trans 0 g

**Cholesterol** 0 mg

**Sodium** 275 mg 12 %

**Carbohydrate** 12 g 4 %

Fibre 1 g 4 %

Sugars 0 g

**Protein** 3 g

|           |     |           |     |
|-----------|-----|-----------|-----|
| Vitamin A | 0 % | Vitamin C | 0 % |
|-----------|-----|-----------|-----|

|         |     |      |     |
|---------|-----|------|-----|
| Calcium | 2 % | Iron | 8 % |
|---------|-----|------|-----|

## Cracker B

### Nutrition Facts

Per 4 crackers (20 g)

| Amount | % Daily Value |
|--------|---------------|
|--------|---------------|

**Calories** 85

**Fat** 2 g 3 %

Saturated 0.3 g 2 %  
+ Trans 0 g

**Cholesterol** 0 mg

**Sodium** 90 mg 4 %

**Carbohydrate** 15 g 5 %

Fibre 3 g 12 %

Sugars 1 g

**Protein** 2 g

|           |     |           |     |
|-----------|-----|-----------|-----|
| Vitamin A | 0 % | Vitamin C | 0 % |
|-----------|-----|-----------|-----|

|         |     |      |     |
|---------|-----|------|-----|
| Calcium | 2 % | Iron | 7 % |
|---------|-----|------|-----|

# Serving size

**Oil**

1 tsp  
1 tbs



**Cheese**

1 1/2 oz



**Nuts and seeds**

1/4 cup



**Meat and Poultry**

2 1/2 oz



**Pasta**

1/2 cup



**Leafy vegetables**

1 cup (250 mL) = 1 fist





# Calories

## Cracker A

### Nutrition Facts

Per 9 crackers (23 g)

| Amount | % Daily Value |
|--------|---------------|
|--------|---------------|

|                    |  |
|--------------------|--|
| <b>Calories</b> 90 |  |
|--------------------|--|

|                  |     |
|------------------|-----|
| <b>Fat</b> 4.5 g | 7 % |
|------------------|-----|

|                 |      |
|-----------------|------|
| Saturated 2.5 g | 13 % |
| + Trans 0 g     |      |

|                         |  |
|-------------------------|--|
| <b>Cholesterol</b> 0 mg |  |
|-------------------------|--|

|                      |      |
|----------------------|------|
| <b>Sodium</b> 275 mg | 12 % |
|----------------------|------|

|                          |     |
|--------------------------|-----|
| <b>Carbohydrate</b> 12 g | 4 % |
|--------------------------|-----|

|           |     |
|-----------|-----|
| Fibre 1 g | 4 % |
|-----------|-----|

|            |  |
|------------|--|
| Sugars 0 g |  |
|------------|--|

|                    |  |
|--------------------|--|
| <b>Protein</b> 3 g |  |
|--------------------|--|

|               |               |
|---------------|---------------|
| Vitamin A 0 % | Vitamin C 0 % |
|---------------|---------------|

|             |          |
|-------------|----------|
| Calcium 2 % | Iron 8 % |
|-------------|----------|

## Cracker B

### Nutrition Facts

Per 4 crackers (20 g)

| Amount | % Daily Value |
|--------|---------------|
|--------|---------------|

|                    |  |
|--------------------|--|
| <b>Calories</b> 85 |  |
|--------------------|--|

|                |     |
|----------------|-----|
| <b>Fat</b> 2 g | 3 % |
|----------------|-----|

|                 |     |
|-----------------|-----|
| Saturated 0.3 g | 2 % |
| + Trans 0 g     |     |

|                         |  |
|-------------------------|--|
| <b>Cholesterol</b> 0 mg |  |
|-------------------------|--|

|                     |     |
|---------------------|-----|
| <b>Sodium</b> 90 mg | 4 % |
|---------------------|-----|

|                          |     |
|--------------------------|-----|
| <b>Carbohydrate</b> 15 g | 5 % |
|--------------------------|-----|

|           |      |
|-----------|------|
| Fibre 3 g | 12 % |
|-----------|------|

|            |  |
|------------|--|
| Sugars 1 g |  |
|------------|--|

|                    |  |
|--------------------|--|
| <b>Protein</b> 2 g |  |
|--------------------|--|

|               |               |
|---------------|---------------|
| Vitamin A 0 % | Vitamin C 0 % |
|---------------|---------------|

|             |          |
|-------------|----------|
| Calcium 2 % | Iron 7 % |
|-------------|----------|

# The Good, the Bad, and the DV%

- Less than 5% is considered “A LITTLE”
- More than 15% is considered “A LOT”

| Cracker A              |        |   |               | Cracker B              |       |   |               |
|------------------------|--------|---|---------------|------------------------|-------|---|---------------|
| <b>Nutrition Facts</b> |        |   |               | <b>Nutrition Facts</b> |       |   |               |
| Per 9 crackers (23 g)  |        |   |               | Per 4 crackers (20 g)  |       |   |               |
| Amount                 |        |   | % Daily Value | Amount                 |       |   | % Daily Value |
| <b>Calories</b>        | 90     |   |               | <b>Calories</b>        | 85    |   |               |
| <b>Fat</b>             | 4.5 g  | → | 7 %           | <b>Fat</b>             | 2 g   | → | 3 %           |
| Saturated              | 2.5 g  | → | 13 %          | Saturated              | 0.3 g | → | 2 %           |
| + Trans                | 0 g    |   |               | + Trans                | 0 g   |   |               |
| <b>Cholesterol</b>     | 0 mg   |   |               | <b>Cholesterol</b>     | 0 mg  |   |               |
| <b>Sodium</b>          | 275 mg | → | 12 %          | <b>Sodium</b>          | 90 mg | → | 4 %           |
| <b>Carbohydrate</b>    | 12 g   |   | 4 %           | <b>Carbohydrate</b>    | 15 g  |   | 5 %           |
| Fibre                  | 1 g    | → | 4 %           | Fibre                  | 3 g   | → | 12 %          |
| Sugars                 | 0 g    |   |               | Sugars                 | 1 g   |   |               |
| <b>Protein</b>         | 3 g    |   |               | <b>Protein</b>         | 2 g   |   |               |
| Vitamin A              | 0 %    |   |               | Vitamin A              | 0 %   |   |               |
| Calcium                | 2 %    |   |               | Calcium                | 2 %   |   |               |
| Vitamin C              | 0 %    |   |               | Vitamin C              | 0 %   |   |               |
| Iron                   | 8 %    |   |               | Iron                   | 7 %   |   |               |

# Let's try that again

| Nutrition Facts                       |               |
|---------------------------------------|---------------|
| Per 1 burger (130 g)                  |               |
| Amount                                | % Daily Value |
| <b>Calories 340</b>                   |               |
| <b>Fat 27 g</b>                       | <b>42 %</b>   |
| Saturated Fat 12 g<br>+ Trans Fat 2 g | <b>70 %</b>   |
| <b>Cholesterol 70 mg</b>              |               |
| <b>Sodium 330 mg</b>                  | <b>14 %</b>   |
| <b>Carbohydrate 3 g</b>               | <b>1 %</b>    |
| Fibre 0 g                             | <b>0 %</b>    |
| Sugars 3 g                            |               |
| <b>Protein 24 g</b>                   |               |
| Vitamin A 0 %                         | Vitamin C 0 % |
| Calcium 2 %                           | Iron 30 %     |

| Nutrition Facts                      |               |
|--------------------------------------|---------------|
| Per 1 burger (130 g)                 |               |
| Amount                               | % Daily Value |
| <b>Calories 200</b>                  |               |
| <b>Fat 9 g</b>                       | <b>14 %</b>   |
| Saturated Fat 2 g<br>+ Trans Fat 1 g | <b>15 %</b>   |
| <b>Cholesterol 70 mg</b>             |               |
| <b>Sodium 800 mg</b>                 | <b>33 %</b>   |
| <b>Carbohydrate 4 g</b>              | <b>1 %</b>    |
| Fibre 0 g                            | <b>0 %</b>    |
| Sugars 0 g                           |               |
| <b>Protein 25 g</b>                  |               |
| Vitamin A 0 %                        | Vitamin C 0 % |
| Calcium 4 %                          | Iron 2 %      |



# Specific Diets

- Heart health
- Diabetes
- Osteoporosis
- Vegetarian
- Pregnancy

# Heart health

- “Mediterranean diet”
  - High in fruit, vegetables, beans, nuts, seeds
  - Olive oil
  - Moderate dairy, fish, poultry
  - Little red meat
  - Eggs up to 4x/week
  - Moderate wine!
- “NNT”: 61
  - NNT for blood pressure medication: 100
- Minimize sodium
  - No added salt – use herbs or spices instead
  - Avoid prepared foods

# Diabetes

- Choose low Glycemic Index carbs
  - Reduce the risk of developing diabetes
- Maximize fibre
- Fruits are fine
- Add protein and fat to meals and snacks
  - Nuts, cheese, seeds, boiled egg

# Osteoporosis

- Translates to “soft bones”
- Risks include age, menopause, low weight
- Vitamin D
  - Fish, milk, fortified orange juice
- Calcium
  - Dairy, fortified orange juice
- If you're at risk, you can supplement both

# Vegetarian

- May be low in:
- Iron – “non-heme” from plant sources
  - Dark green foods, beans, lentils, dried fruit
- Protein – dairy, eggs, beans, nuts
- B12 – eggs, dairy



# Pregnancy

- Folate taken 2-3 months preconception to decrease risk of neural tube defects
  - Enriched grains, lentils, green vegetables
- Iron to decrease risk of low birth weight, premature delivery
  - Meat – heme source of iron
  - Enriched grains, green vegetables, lentils
  - Also a good idea for all menstruating women
- Prenatal vitamins have both!



# Final tips! #1

- Go for whole grains!
  - At LEAST  $\frac{1}{2}$  of your grain products
  - Whole grain wheat, oats, barley, lentils, beans
  - Cereal, bread, flour, pasta, brown rice

# Final tips! #2

- Load up on fruits and vegetables!
  - Plan and fill HALF your plate with veggies
  - Try a new veg/fruit each week (Endives?!?!)
  - One “dark green” and “orange” each day
  - Sprinkle berries on oatmeal, yogurt, salad
  - Sneak a handful of spinach/kale into recipes
  - Fresh, frozen, or canned instead of juice

# Final tips! #3

- Make your day with milk products!
  - Sneak milk into soups/casseroles
  - Greek yogurt for breakfast
  - Cheese as a snack or on salads
  - Milk and (whole grain) cereal as a snack

# Final tips! #4

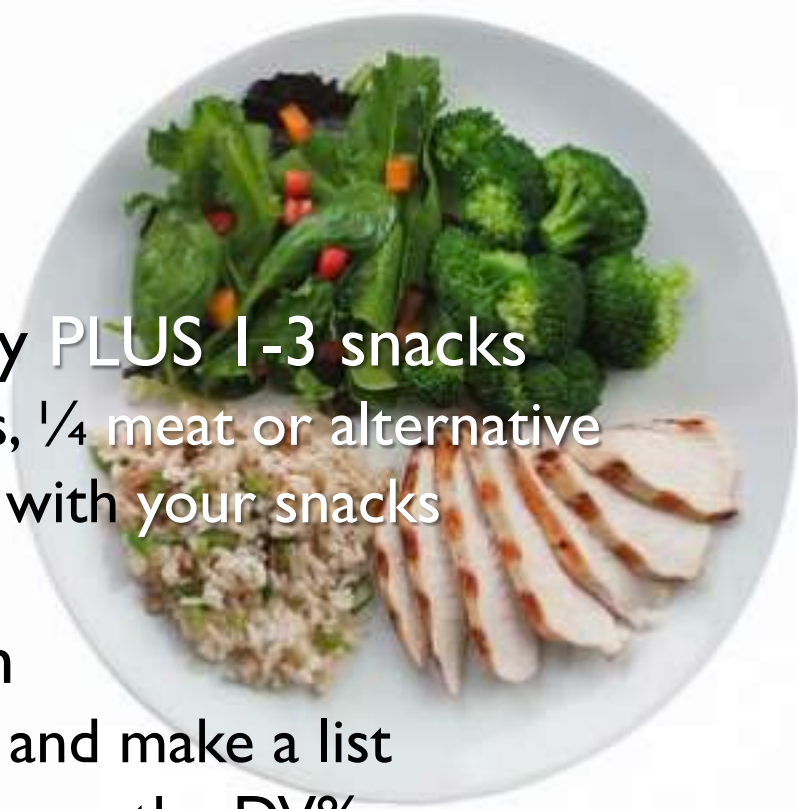
- Go lean and alternative!
  - Trim fat and skin then bake, roast, or poach
  - Try to eat fish 1-2x/week
  - Go meatless 2x/week
    - lentils, eggs, tofu (save some \$\$\$!)
  - Boiled eggs, seeds, or nuts for snacks or salads
  - Avoid cured meats (including bacon)

# Final tips! #5

- Healthy fats are our friends!
  - Olive oil and a splash of citrus for salads
  - Mashed avocado instead of butter
  - Vegetable oil instead of butter for frying
  - Nuts – whole or butter
  - Herbs or spices instead of sauces or salt

# Final tips! #icing

- Plan for 3 meals each day PLUS 1-3 snacks
  - Plate:  $\frac{1}{2}$  veggies,  $\frac{1}{4}$  carbs,  $\frac{1}{4}$  meat or alternative
  - Include fibre and protein with your snacks
- Shopping for your health
  - Plan meals ahead of time and make a list
  - Compare nutrition labels, use the DV%
  - Ingredients are listed in order of abundance
- Healthy choices for eating out
  - Choose smaller portions
  - Ask for sauce or dressing on the side



# Resources (...homework)

- Eat Right Ontario
- Dieticians Canada
- EATracker
- Eat Wise
- Canadian Nutrient File



# Outline

- Nutrition Labels - What does it all mean?!
  - Nutrients 101
  - Serving size
  - Calories
  - DV%
- Special Diets – Heart health and more!
- Getting started – Healthy eating habit tips
- Resources – Your homework (sorry!)

# My goal – a reminder!

You are what you eat



Eating healthy is a habit



Habits are what we repeat



Repeatedly make healthy choices



***Bon appétit!***