

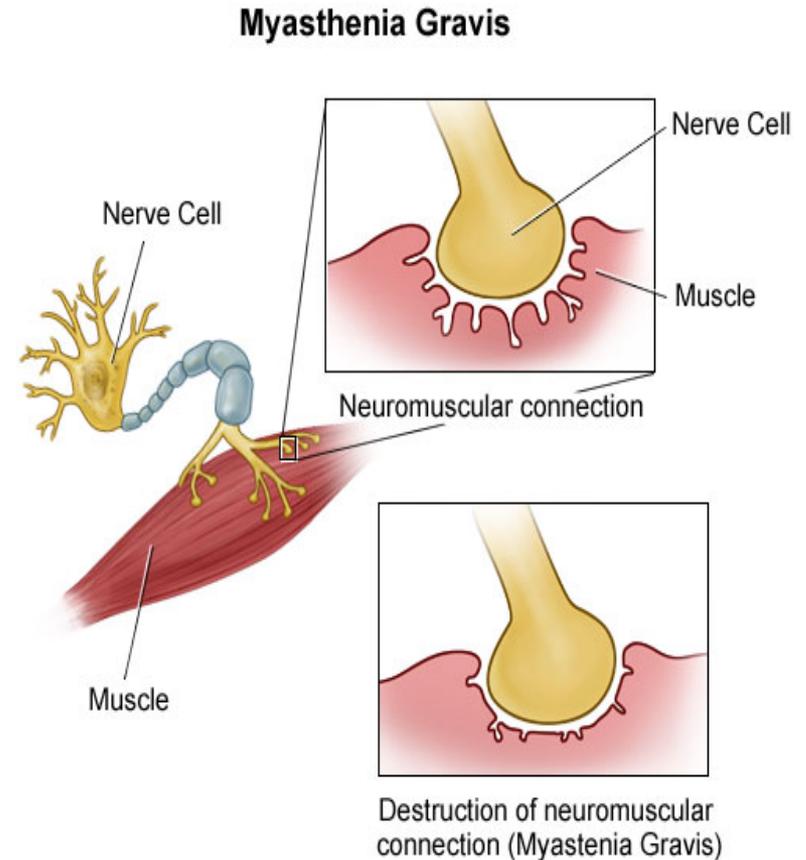
Nutrition & Myasthenia Gravis

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What is MG?

- Autoimmune disease that causes inflammation at the neuromuscular junction
- Therefore causing issues with voluntary muscular movement
 - Chewing/ swallowing



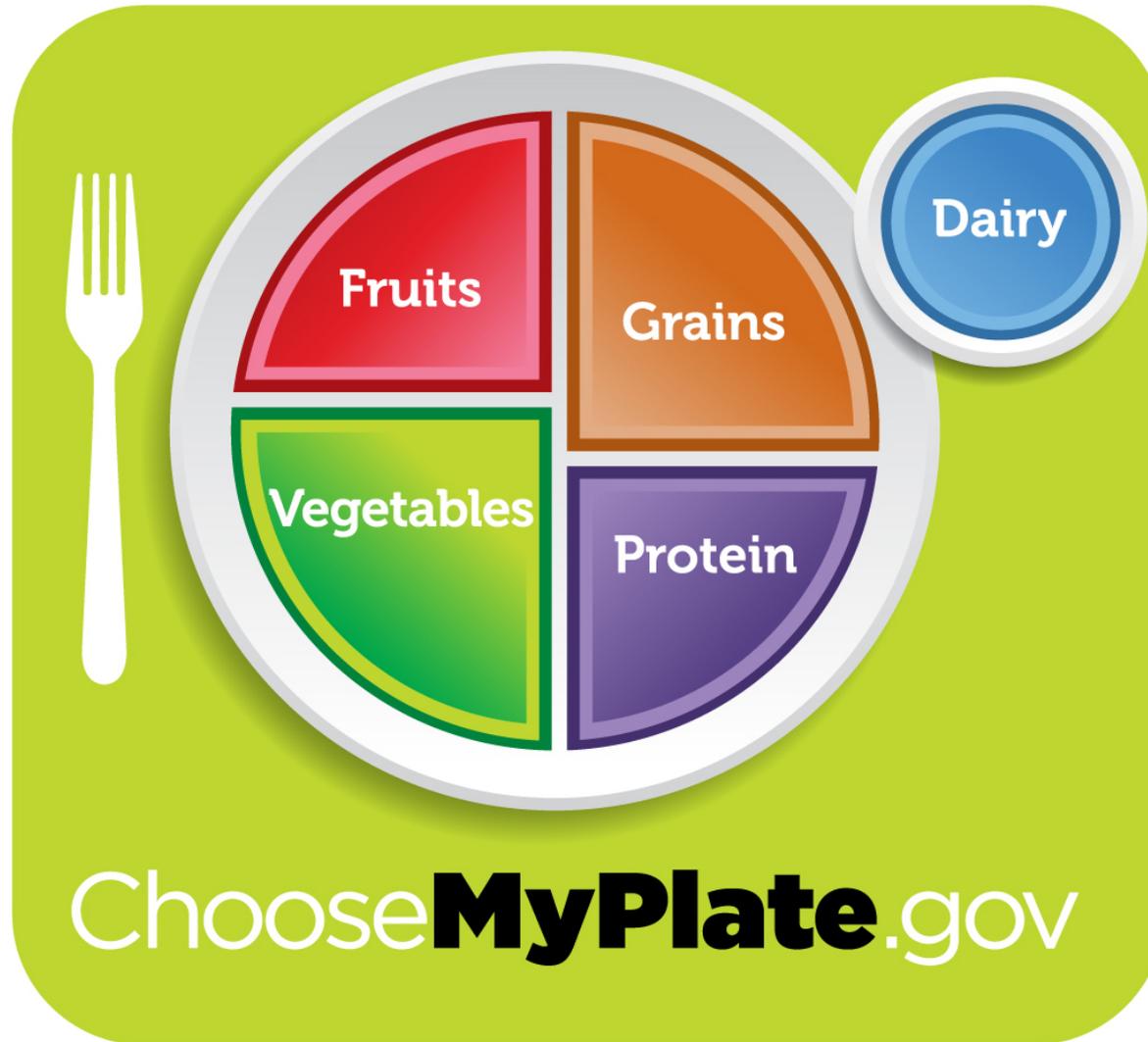
Nutritional Problems With MG

- Poor food choices may result in nutrition deficiency
- Fatigue and chewing difficulties, may interfere with adequate nutritional intake
- Certain medications may result in diet modifications; ex:
 - Diarrhea
 - Fluid retention
 - Elevated blood sugars

TODAYS TOPICS

- Basic general nutrition
- Nutritional supplements
- Dr. Weil's Anti-inflammation Diet
- Mediterranean diet

General Nutrition: MyPlate

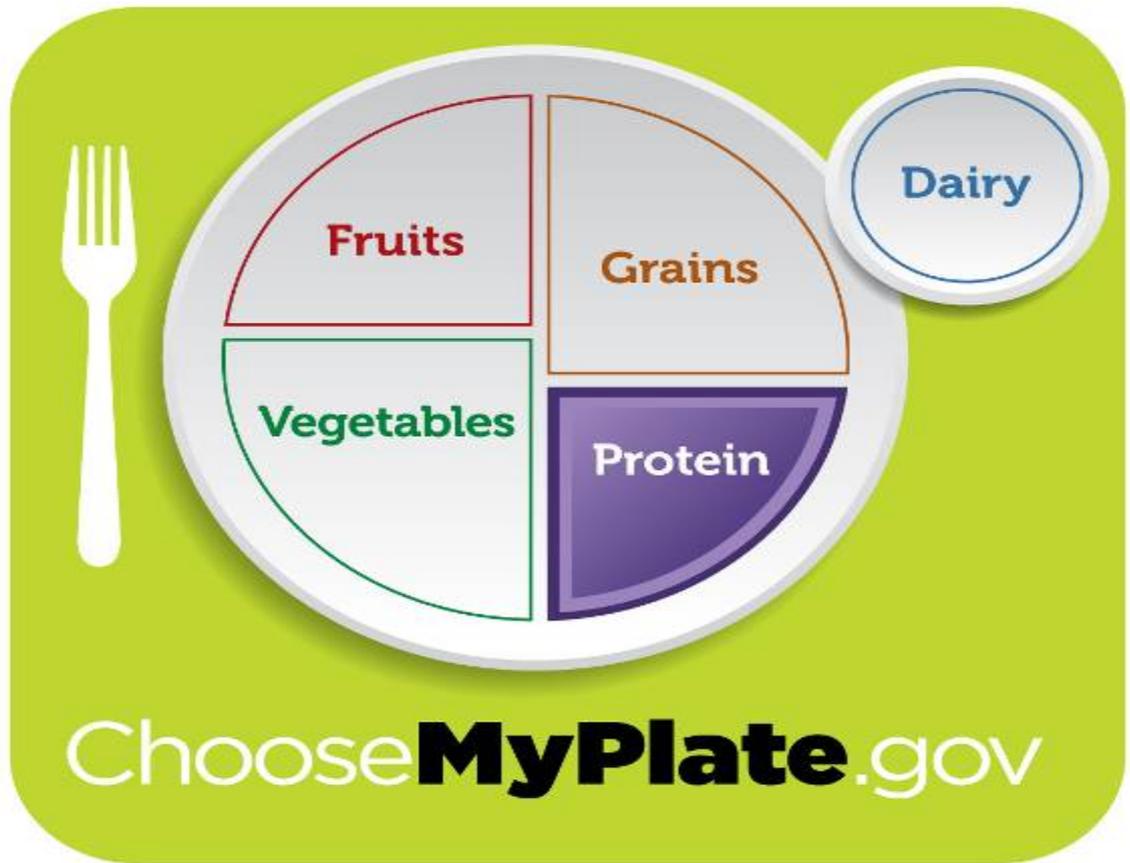


How to use My Plate

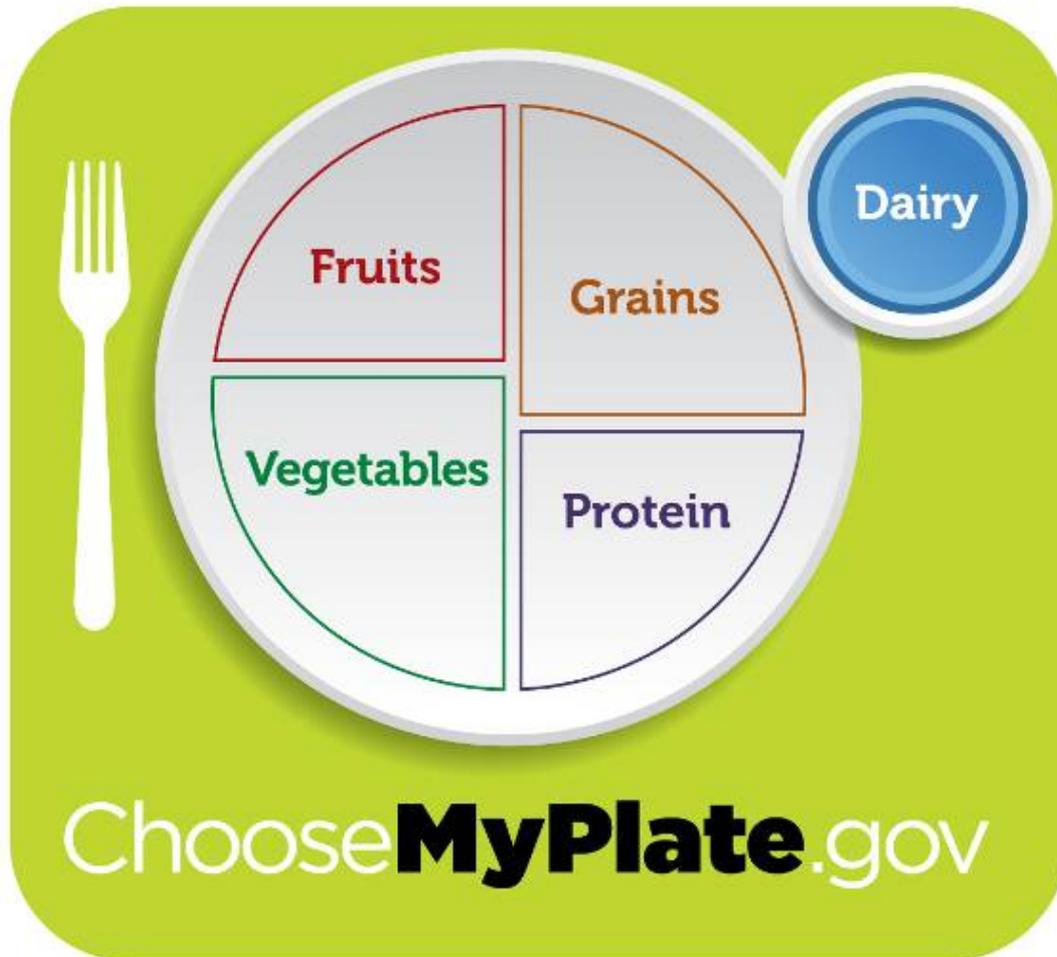
- Go to the “super tracker” tab on the tool bar
- Create a profile- your age, wt, and activity level
- View your “plan”, set goals
- You can track your intake for the day
- Take quizzes on portion sizes, and much more

MyPlate update

MyPlate calls the former MyPyramid “Meat & Beans Group” the “Protein Group”



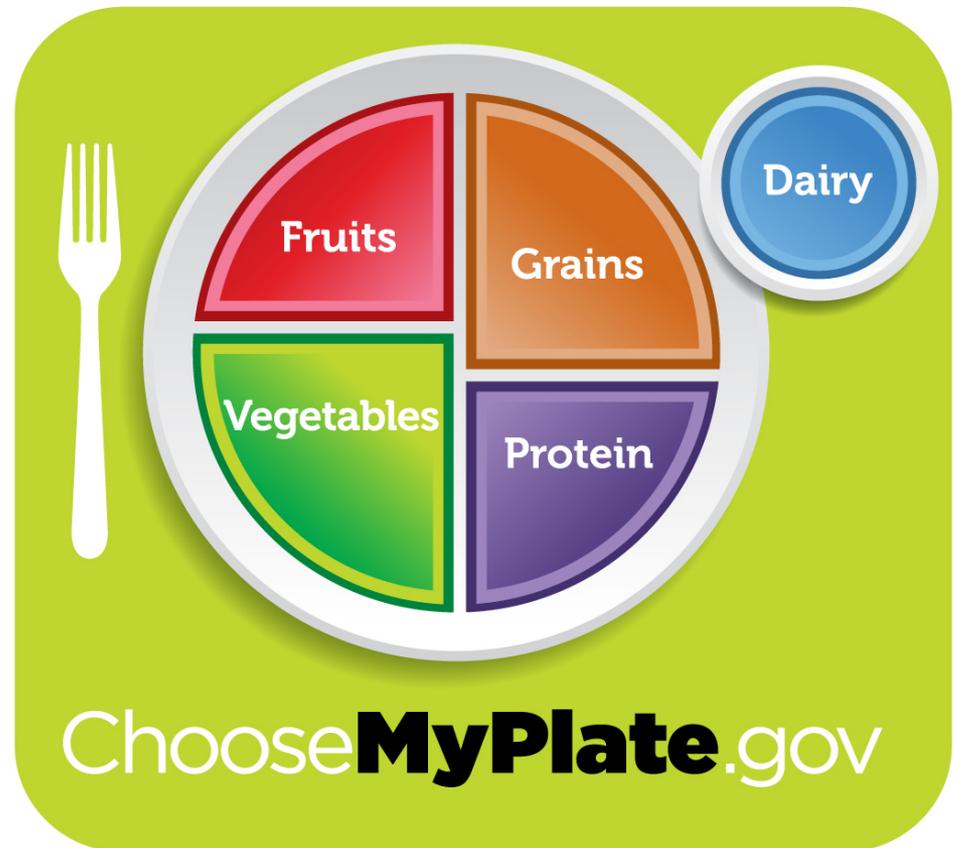
MyPlate update



MyPlate calls the former MyPyramid “Milk Group” the “Dairy Group”

Choose MyPlate “Menu” of Selected Consumer Messages

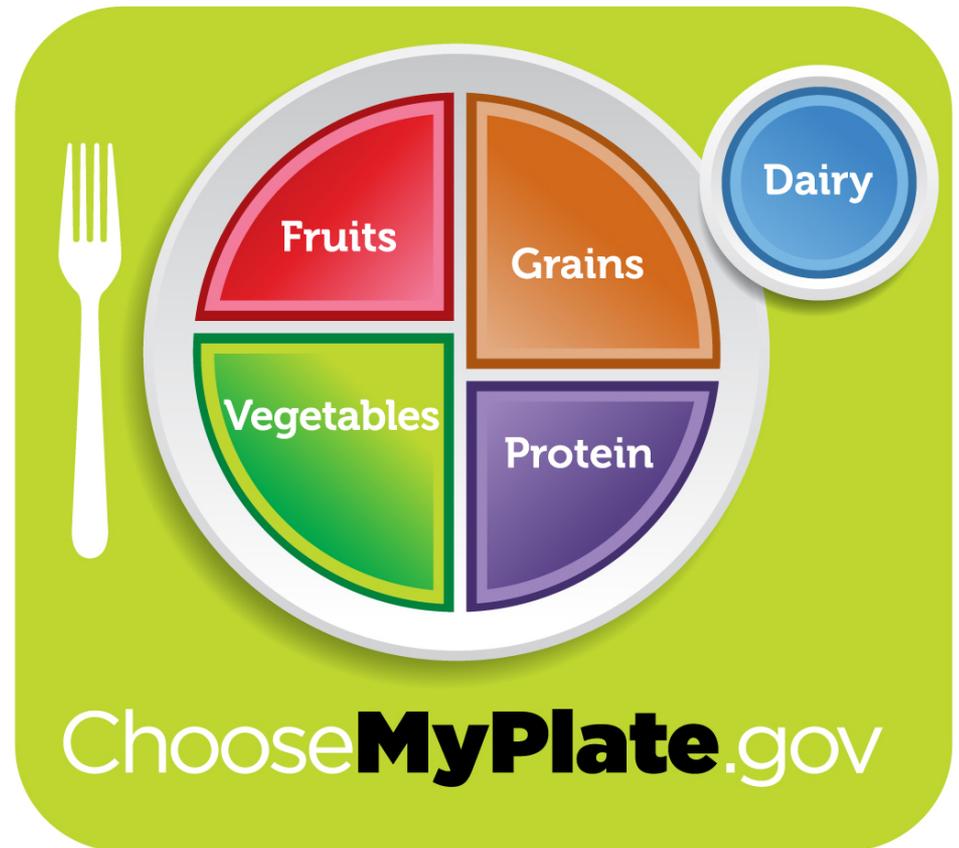
1. Balancing calories



Choose MyPlate “Menu”

Balancing calories

- Enjoy your food, but eat less
- Avoid oversized portions

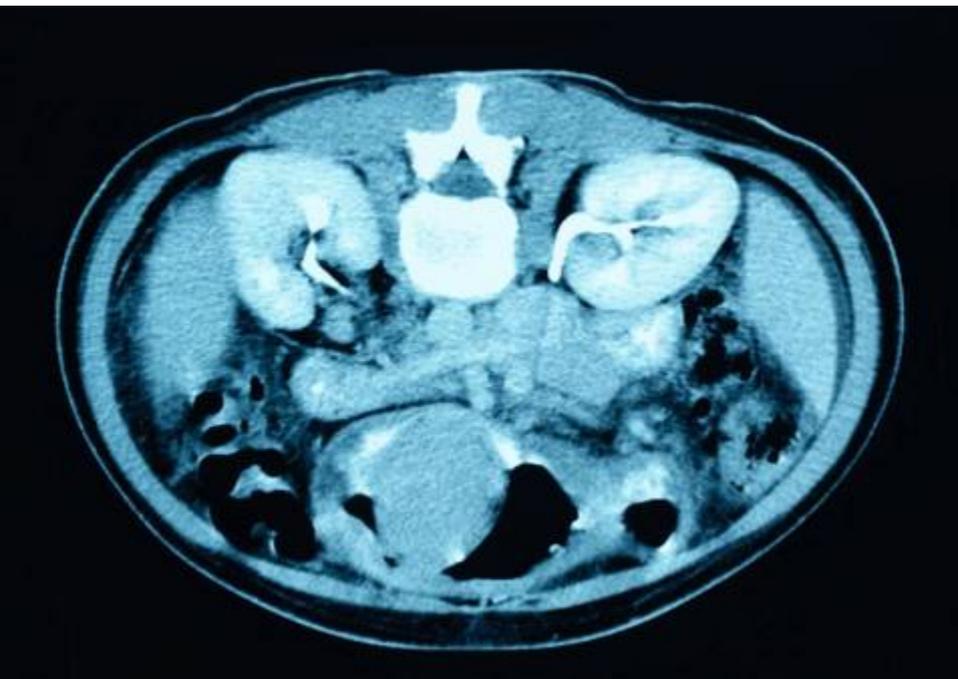
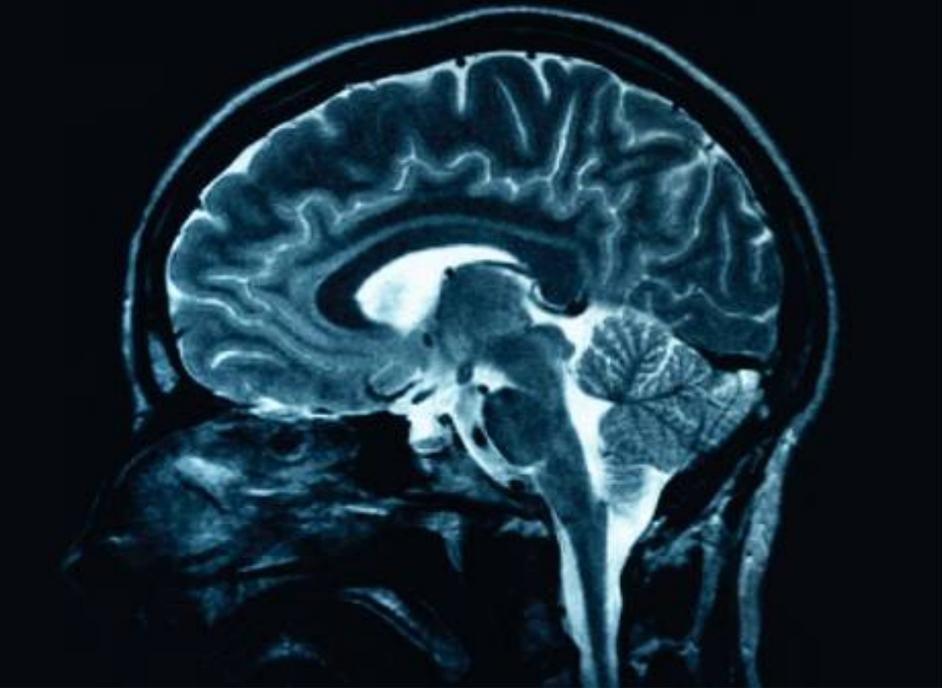


Enjoy — but eat less!



Be careful of serving size!





20 minutes

It takes
about 20
minutes for
stomach to
tell your
brain
you're full

Photo courtesy of National Cancer Institute



**Eat
more
nutrient-
dense
foods**

Another name for “nutrient-dense” foods is “nutrient-rich” foods

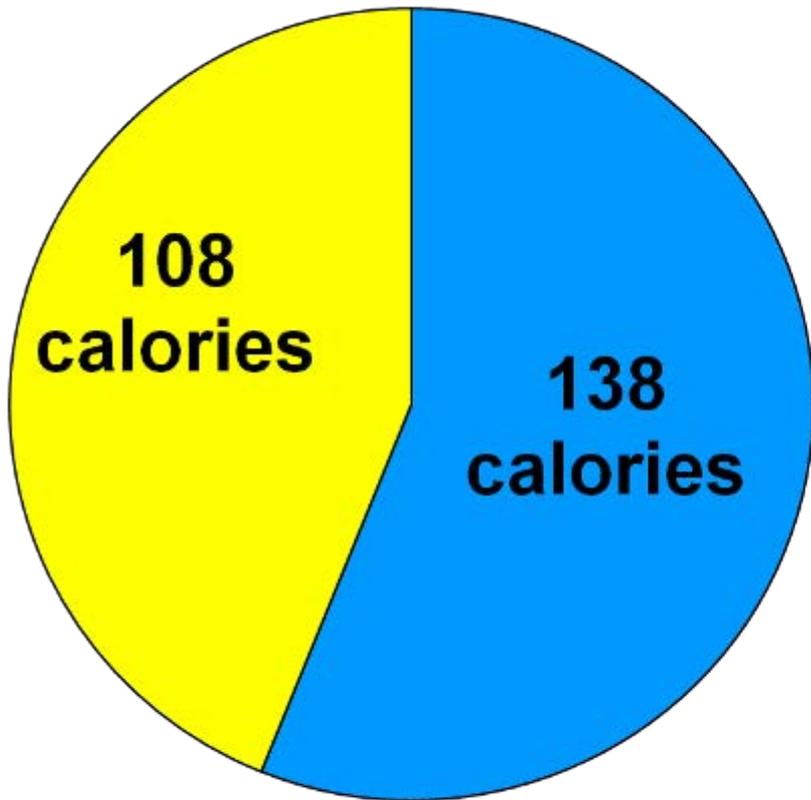


Serving size comparison

Both are 140 cal!



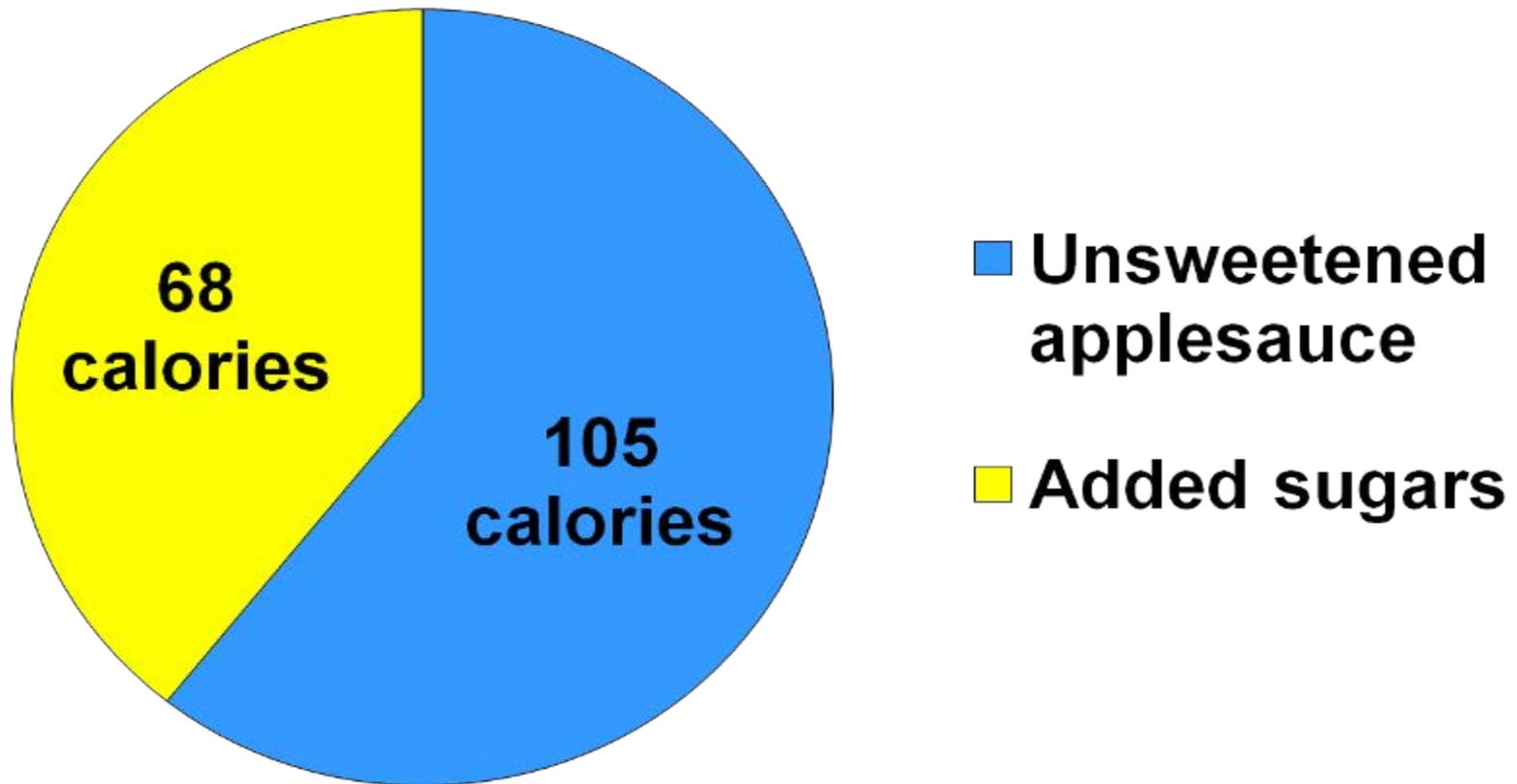
Nutrient-dense vs. not nutrient-dense



- Baked chicken breast
- Breading and frying

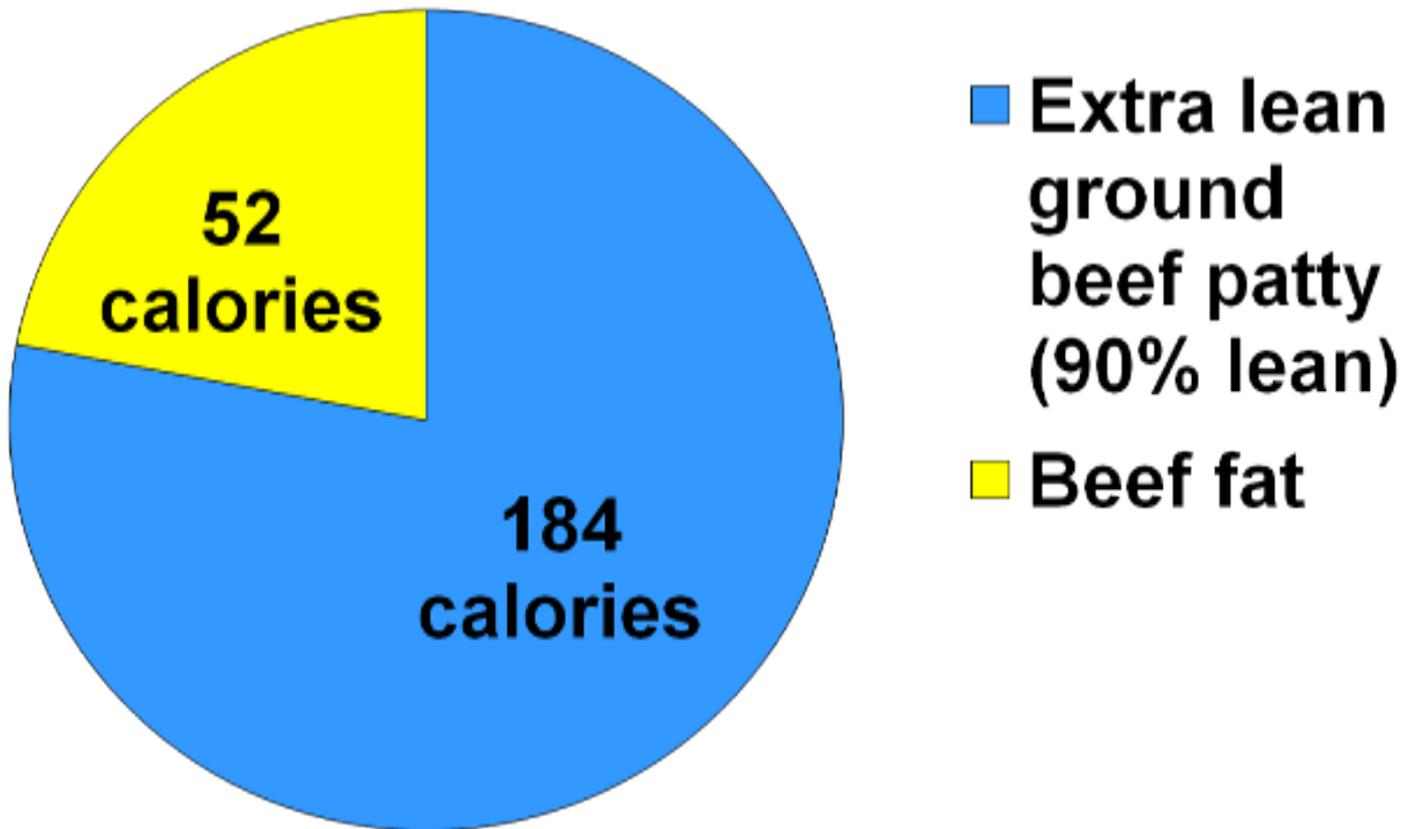
**Breaded fried chicken strips, 3 oz.
(246 calories)**

Nutrient-dense vs. not nutrient-dense



**Sweetened applesauce, 1 cup
(173 calories)**

Nutrient-dense vs. not nutrient-dense



**Regular ground beef patty (75% lean),
cooked, 3 oz. (236 calories)**

Nutrient-dense foods and beverages include ALL:

- Vegetables/fruits
- Whole grains
- Seafood
- Eggs
- Dry beans/peas
- Unsalted nuts/seeds
- Fat-free/low-fat milk/milk products
- Lean meats/poultry

**When prepared
WITHOUT adding
solid fats, sugars,
or salt**

Nutrition Facts Label doesn't separate "added" & "naturally occurring" sugars

"Added" sugars are sugars and syrups added to foods or beverages during preparation or processing

1 teaspoon sugar = about 4g of added and/or naturally occurring sugar

Nutrition Facts	
Serving Size 1 cup (228g)	
Servings Per Container 2	
<hr/>	
Amount Per Serving	
Calories 250	Calories from Fat 110
<hr/>	
	% Daily Value*
Total Fat 12g	18%
Saturated Fat 3g	15%
<i>Trans</i> Fat 1.5g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	

Can you guess: Which food has **ADDED** sugar according to the ingredient list?

A. INGREDIENTS: cultured pasteurized grade A nonfat milk, whey protein concentrate, pectin ...

B. INGREDIENTS: cultured grade A reduced fat milk, apples, high-fructose corn syrup, cinnamon, nutmeg, natural flavors, pectin ...

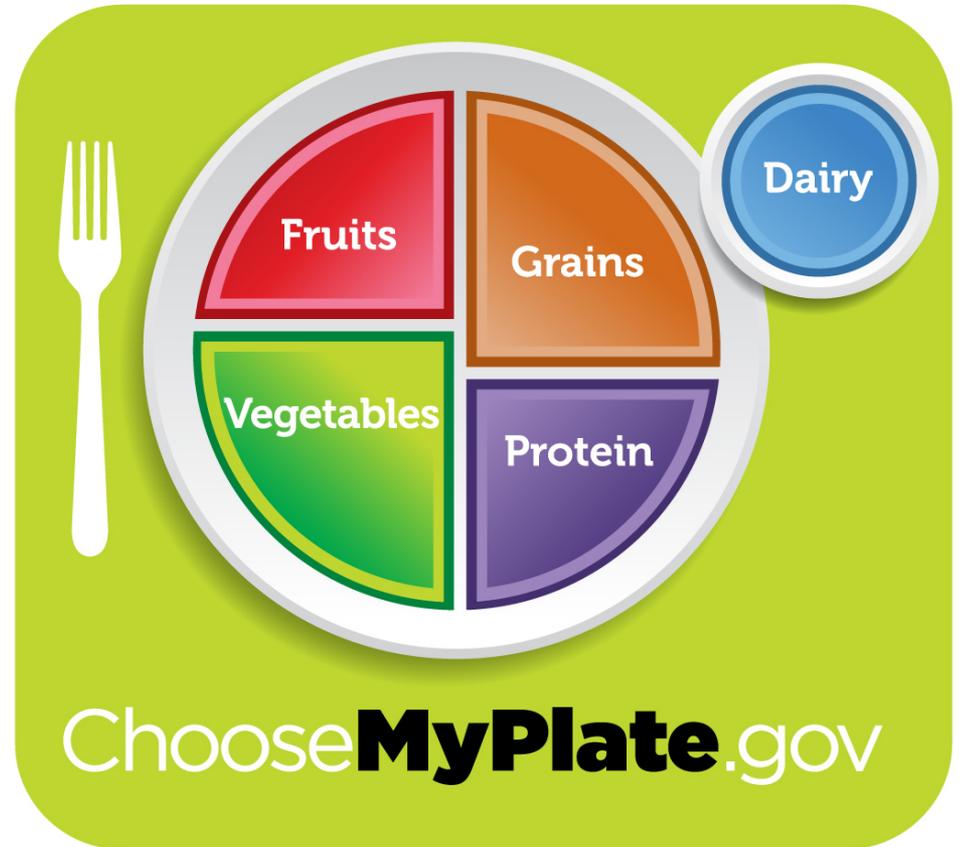
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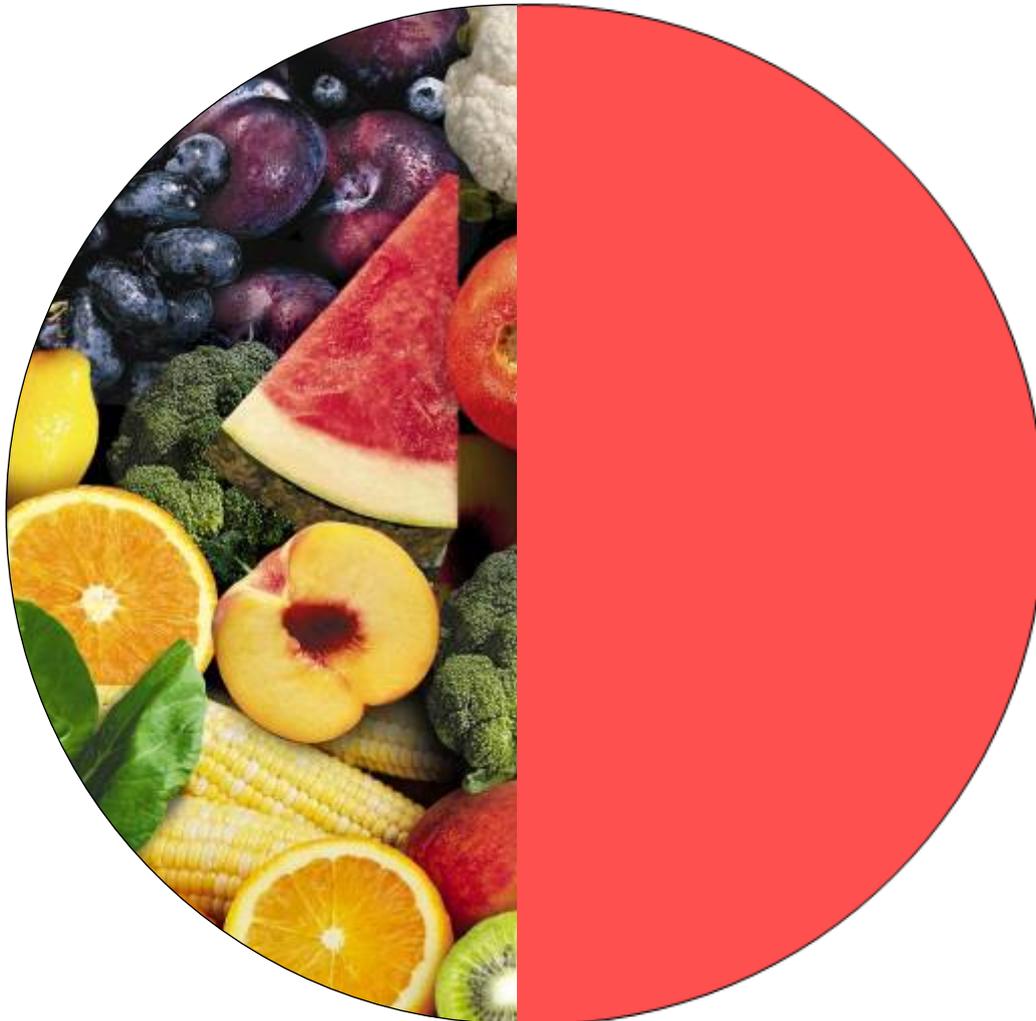
B. INGREDIENTS: cultured grade A reduced fat milk, apples, high-fructose corn syrup, cinnamon, nutmeg, natural flavors, pectin ...

Choose MyPlate “Menu”

Foods to
increase



Fill half your plate with fruits & veggies



Did you know: The vegetable subgroup of “beans and peas (legumes)” includes ...

... all cooked beans and peas, for example:

- **Kidney beans**
- **Lentils**
- **Chickpeas**
- **Pinto beans**



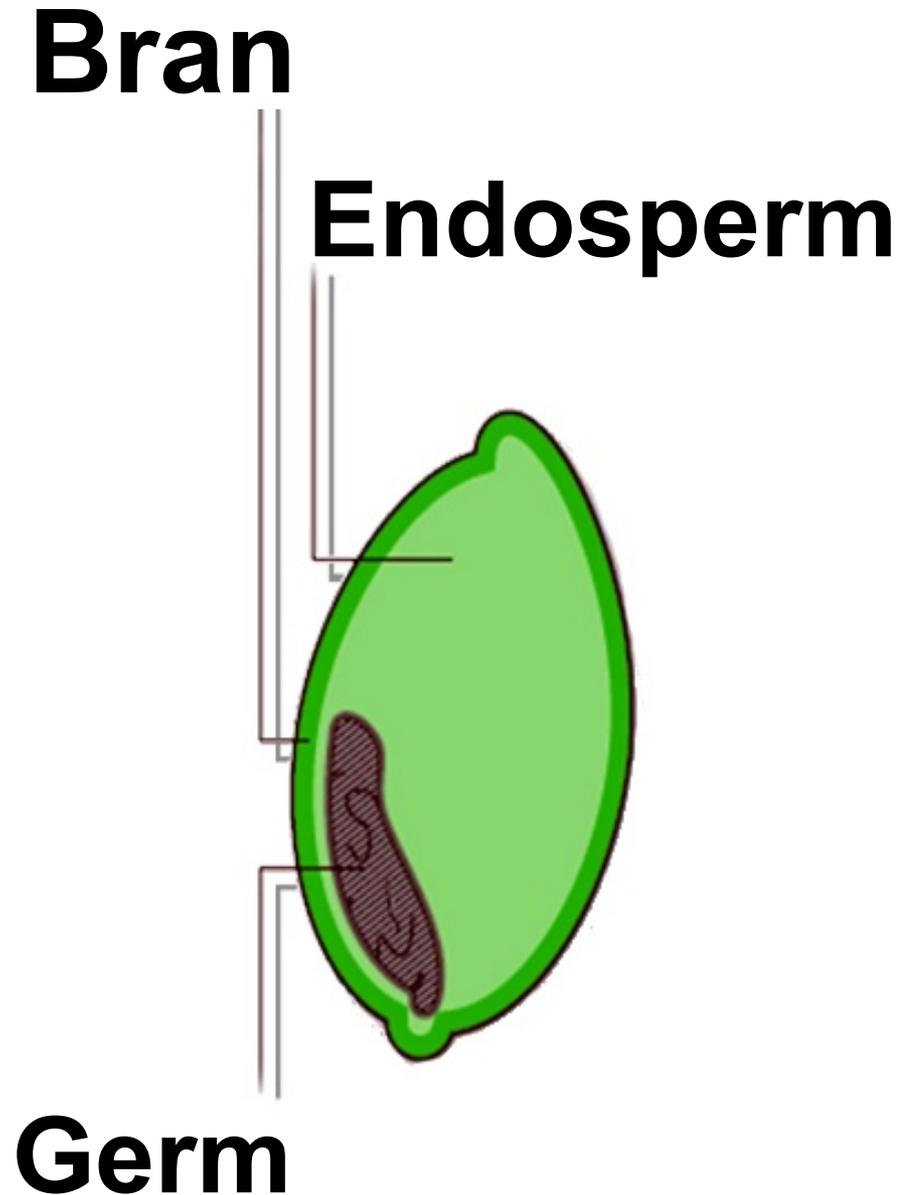
Can you guess: What type of food are “beans and peas (legumes)” considered?

- A. Vegetable**
- B. Protein**
- C. Both A and B**
- D. Neither A or B**



**At least half
your grains
should be
whole grains**

Whole grains contain the entire grain seed or “kernel”



Partially whole grain products providing half or more whole grains per ounce-equivalent serving have **at least** either:

- 51% of total weight as whole grains OR
- 8g of whole grains



Can you guess: Which bread is highest in **WHOLE** grains?

A. INGREDIENTS: wheat flour, water, high fructose corn syrup, molasses, wheat, bran ...

B. INGREDIENTS: whole wheat flour, water, brown sugar ...

Can you guess: Which bread is highest in **WHOLE** grains?

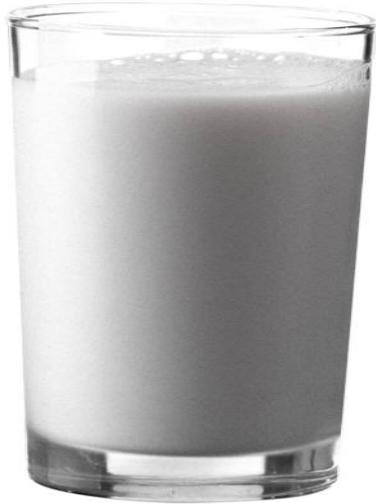
A. INGREDIENTS: wheat flour, water, high fructose corn syrup, molasses, wheat, bran ...

B. INGREDIENTS: whole wheat flour, water, brown sugar ...

Carbohydrates Not A **BAD** Food

- Breads and cereals supply the body with energy
- Fruits and veggies are also considered carbohydrates and supply the body with fiber, vitamins and minerals
 - Natural form of sugar
- Milk and dairy have lactose which is also a form of carbohydrate and supply the body with calcium vitamins and minerals

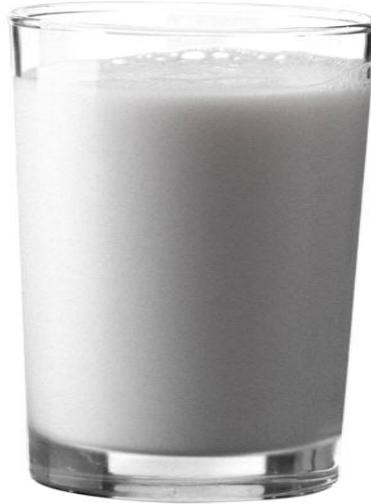
Switching to fat-free or low-fat (1%) milk makes a difference!



Whole

165
calories

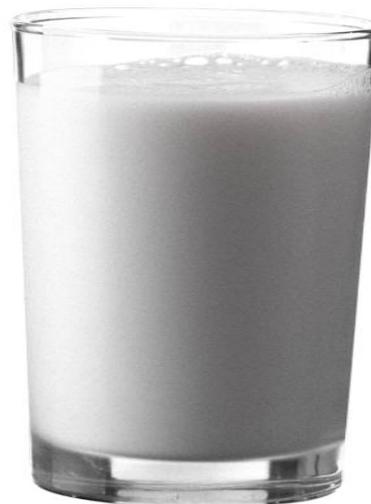
**Calories
saved**



2%

125
calories

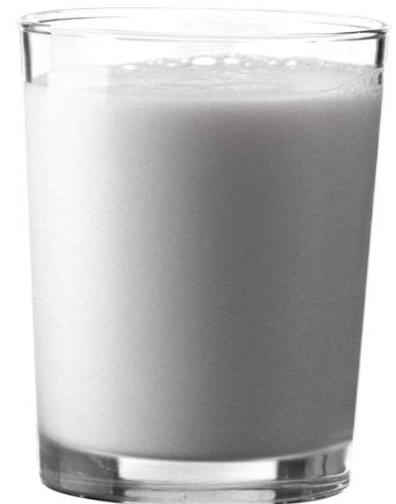
40



1%

100
calories

65



Fat-free

85
calories

80

Can you guess: Which is more nutrient-dense?

- A. Fat-free and low fat (1%) milk**
- B. Whole milk**
- C. They are equally nutrient-dense**

Can you guess: Which is more nutrient-dense?

A. Fat-free and low fat (1%) milk

B. Whole milk

C. They are equally nutrient-dense

Protein

- Lean protein can aid in healing, satiety, maintain lean body mass, help with weight loss
 - Eggs
 - Fish
 - Peanut butter/ nuts
 - Poultry
 - Lean red meat
 - Dairy

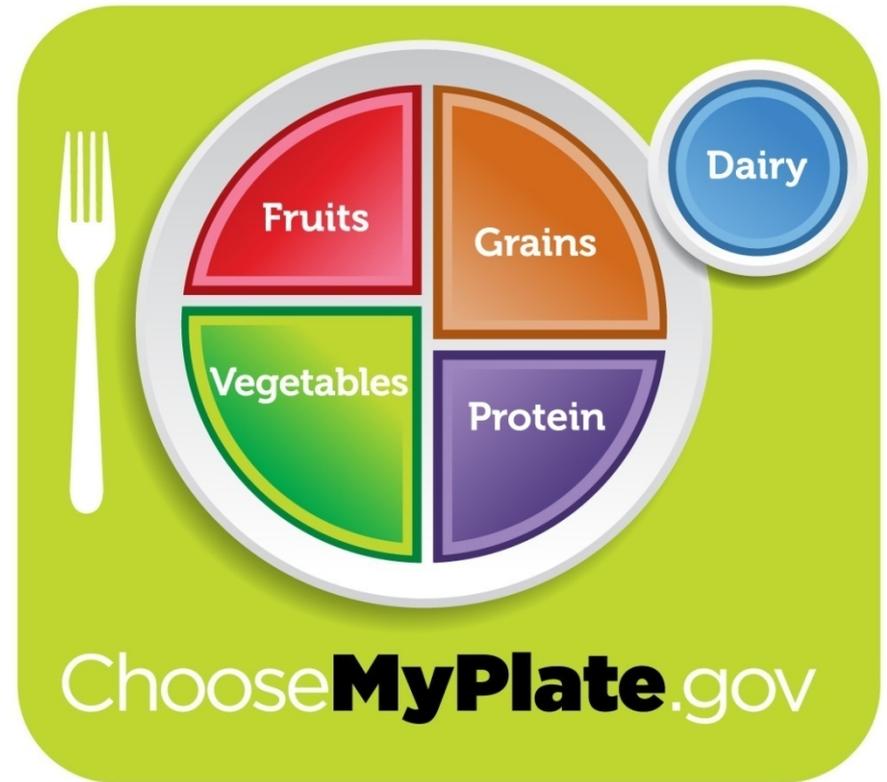
Eggs



- Easy to digest making it great for muscle repair
- Louisiana State- obese individuals ate an egg breakfast 5x a week lost 65% more wt than those who had a bagel, they also had more energy
- High in lutein and zeaxanthin- antioxidants that ward off macular degeneration
- Prepare an egg with canola oil or pan spray and don't salt it

Choose MyPlate

Foods to reduce





**Limit
foods
high in
sodium,
added
sugars,
and
refined
grains**

Can you guess: People ages 2 and older should reduce daily sodium intake to less than ...

A. 2,300 mg or 1,500 mg, depending on age/other individual characteristics

B. 2,300 mg or 3,000 mg, depending on age/other individual characteristics

Can you guess: People ages 2 and older should reduce daily sodium intake to less than ...

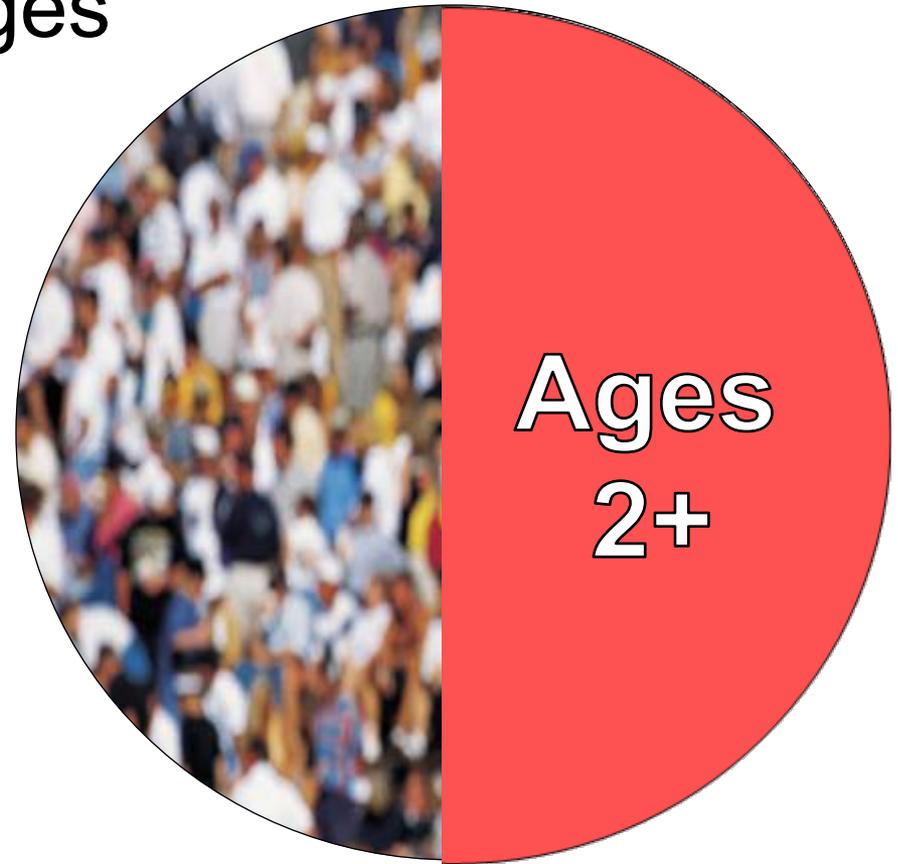
A. 2,300 mg or 1,500 mg, depending on age/other individual characteristics

LESS THAN A TEASPOON PER DAY!

B. 2,300 mg or 3,000 mg, depending on age/other individual characteristics

Groups reduced to 1,500 mg

- African Americans ages 2+
- Adults ages 51+
- People ages 2+ with high blood pressure, diabetes, or chronic kidney disease



Can you guess: How much sodium is in a teaspoon of salt?

A. 1,300 mg

B. 2,300 mg

C. 3,300 mg

Can you guess: How much sodium is in a teaspoon of salt?

A. 1,300 mg

B. 2,300 mg

C. 3,300 mg

Can you guess: How much sodium is in 1 cup of this food?

- A. 30 mg
- B. 250 mg
- C. 470 mg

Nutrition Facts	
Serving Size 1 cup (228g)	
Servings Per Container 2	
<hr/>	
Amount Per Serving	
Calories 250	Calories from Fat 110
<hr/>	
	% Daily Value*
Total Fat 12g	18%
Saturated Fat 3g	15%
<i>Trans</i> Fat 1.5g	
Cholesterol 30mg	10%
Sodium 470mg	20%

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Where does sodium in our diet come from?

- Processed foods- TV dinners, packaged bread, baking soda, cheeses, sausage, luncheon meat
- Prepared foods- eating out
- Table salt
- Condiments- mustard, pickles, ketchup, salad dressing, soy sauce,
- Average American takes in 2500-5000mg per day!

Easy ways to reduce sodium

- Check labels- choose sodium free, low sodium
- Avoid adding salt (an exception may be when baking yeast breads)
- Eat fresh foods, frozen veggies, not canned
- Request salt be left off when eating out
- Use other seasonings
- Eat at home more
- Snack on fruits, vegetables, unsalted nuts etc
- Take note of your favorite condiments sodium content
- Make your own seasoning mixes
- Some prescription meds may have sodium



Sea Salt Vs. Table Salt

- Same amount of sodium by weight
- Important to get away from all added salts



Steroids and MG

- Steroids such as ACTH or Prednisone
 - Fluid retention
 - Limit to 2300mg sodium per day to lessen this
 - When checking labels aim for 140mg sodium or less per serving
- Make sure you are eating enough calcium and vitamin D3
 - 1500mg calcium
 - 400-600IU vitamin D3
- Can cause weight gain

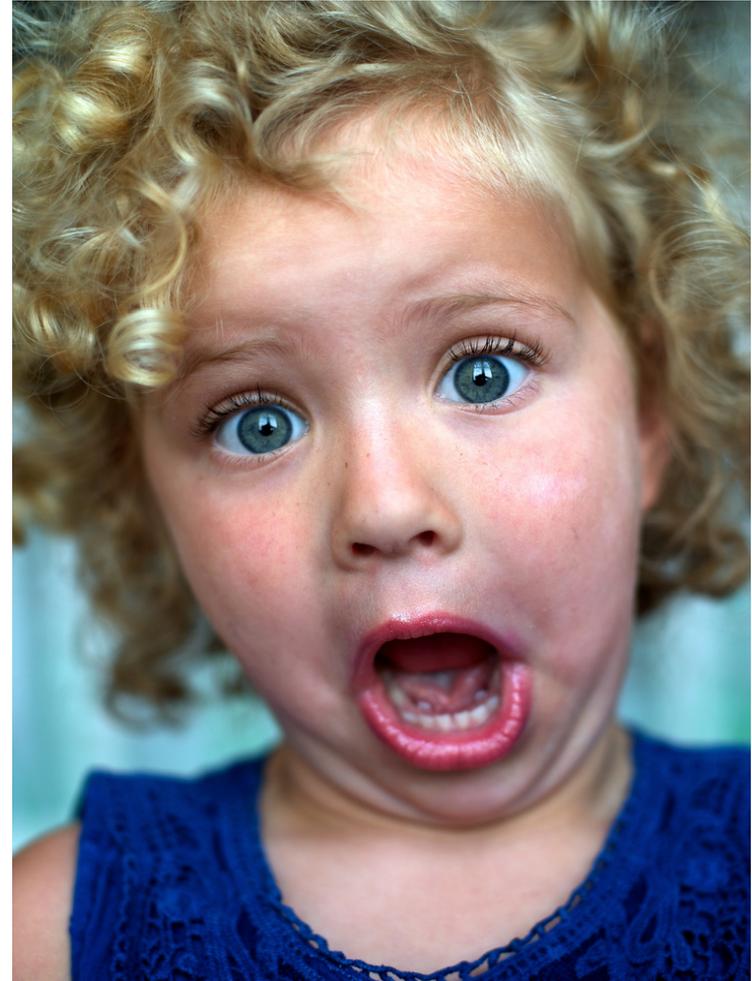


Increase Potassium in Your Diet

- Helps with muscle contraction, nerve transmission to the heart, stomach, intestines, and muscles in the arms and legs
- Maintains fluid balance (diarrhea)
- Increase potassium foods in your diet: Oranges, bananas, tomatoes, yellow and green veggies, and dairy products

Diarrhea!

- Don't take OTC anti-diarrhea meds
- Low fat/ non greasy foods
- Avoid spicy foods
- Avoid insoluble fiber
- Caffeine can stimulate the bowel
- Small frequent meals
- Include more potassium
- Eat yogurt or kefir
- Keep hydrated
- Ask your Doc about medications to help with diarrhea



Reduce sugar-sweetened beverage intake:



- Drink fewer sugar-sweetened beverages
- Substitute water, unsweetened coffee and tea, and other beverages with few or no calories

Don't Pick These!

110
calories:
orange juice
(8 oz.)



400
calories:
mocha
(medium)



280
calories:
regular cola
(20 oz.)



230
calories:
fruit drink
(16 oz.)



200
calories:
sweet tea
(16 oz.)



150
calories:
beer
(12 oz.)



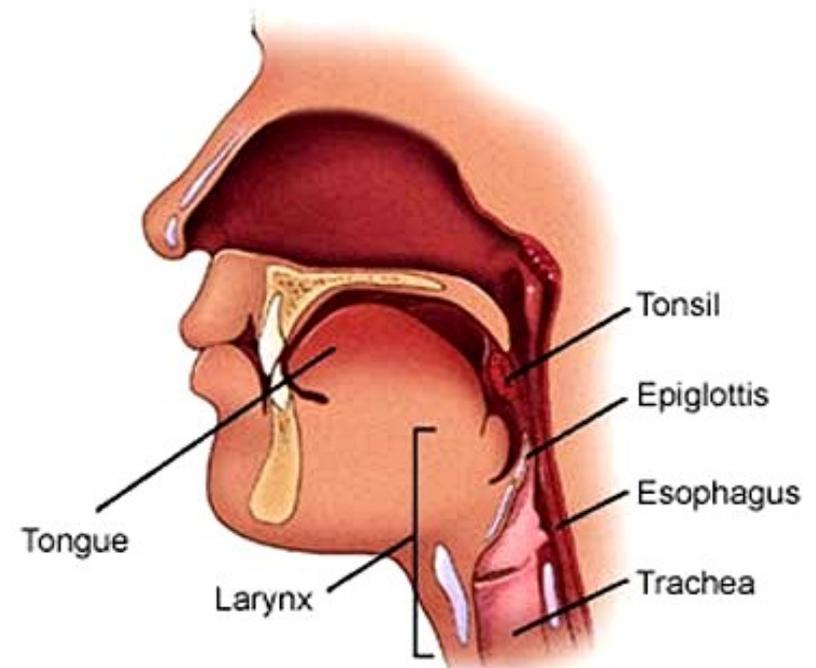
Choose These Instead!

110 calories: orange juice (8 oz.)	160 calories: non-fat latte (medium)	0 calories: diet cola (20 oz.)	0 calories: water	0 calories: tea with artificial sweetener (16 oz.)	100 calories: light beer (12 oz.)
					

**A Day
of Beverages**
370 Calories

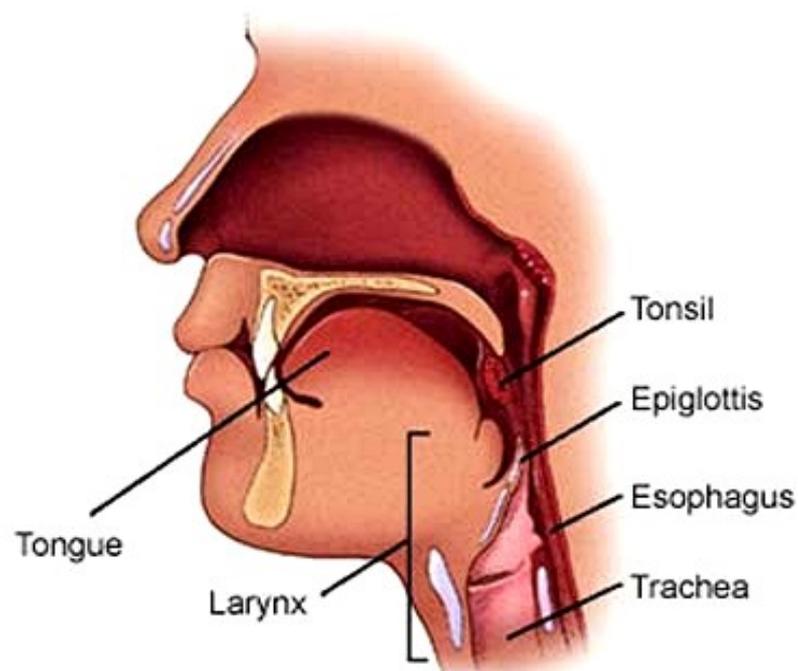
Chewing difficulties with MG

- Sit upright when eating
 - Tilt your head forward
- Plan meals at times when muscle strength is best
- Take small portions into the mouth
- Rest between bites
- Take small sips of fluid
- Eat your main meal early in the day



Chewing difficulties with MG

- Prepare soft tender foods that are easy to swallow
- Moisten dry foods with gravies and liquid
- Alternate liquids and solids
- Thicken fluids if need (per speech therapist)
- Don't chew and talk at the same time
- Play relaxing music while you eat
- Eat warm rather than hot meals
 - Sip a cold drink with meals
- Take your time



Chewing difficulties with MG

- When chewing is difficult replace fruit and veggies with juices or mashed
- Fruit puree to your yogurt and hot cereal
- Add pureed broccoli to mashed potatoes
- Try scrambled eggs
- Avoid dry foods that can easily crumble
 - Cookies and crackers
- Avoid alcohol- relaxes your muscles
- Avoid tonic water
- Have a dental exam regularly

Cooking tips for MG

- Moist cooking methods: braising, stewing, or baking in liquid until tender
- Steam or cook veggies until tender enough to mash with a fork
- Avoid cooked corn, stringing or crisp-fried veggies
- Soft peeled fruits- peaches, nectarines, or melon
- Try soups that are strained or have very small pieces of meat in them (<1/2 inch)
- Cook when you feel good and freeze it for the future
- When reheating don't over cook so foods do not form a hard crust on them

More Cooking Tips

- Add small amounts of gravy, sauce, vegetable juice, cooking water, fruit juice or milk to puree food to the consistency of pudding
- Add potato flakes or commercial thickeners to pureed foods that are too runny
- Add dry milk powder to add calcs and protein to foods
- Avoid sticky foods like peanut butter and chewy candies that can cause more muscle fatigue

Milkshakes for MG

- Facebook support group
- Recipes of milkshakes that can aid in nutrition when muscles are weak in your jaw
- Make sure they are balanced. A smoothie may have less added sugar
- Drink between meals as a snack



Milkshakes for MG

- Try Boost, Ensure or Carnation Essentials
- Use milk, yogurt or alternative dairy products as a base
- Add another protein source such as whey, peanut butter, chia seeds
- Include fruits and veggies as well
- Try adding flax seeds or flax oil (GNC/ vitamin stores)
- See our recipes



Dr. Weil's Anti-inflammatory Diet



Dr. Weil's "Clean Eating"

- Full of fresh fruits and veggies (7-9 servings per day)
- Unprocessed chemical free meats (1-2 servings per week)
 - Organic grass fed meats
 - Wild caught fish, not farm raised
 - Cage-free organic chicken with skin removed
 - Cage-free eggs from free range chickens
- Nuts and seeds
- Yogurt and natural cheeses like Swiss, Jarlsberg and true Parmesan
- Whole soy products
- Mushrooms-shiitake, enokidake, maitake, oyster
- Healthy oils
- Whole wheat products (pasta 2-3 ½ cup servings per week)
 - Mostly gluten free
- Supplements
- Drink mostly water/ tea, and wine (not recommended with MG)

Dr. Weil's Anti-Inflammatory Diet

- No current research on this particular diet
- Studies have shown that fish oil can relieve tender joints and ease morning stiffness
- Intake of fiber from fruits, vegetables and whole grains may also help reduce inflammation. Studies show that adding fiber to the diet results in lower levels of C-reactive protein (CRP) in the blood; CRP is an indicator of inflammation.
- Extra-virgin olive oil may also help reduce inflammation, in the same way that a [nonsteroidal anti-inflammatory drug \(NSAID\)](#) such as ibuprofen or aspirin can – it contains a compound called oleocanthal that blocks the enzymes that cause inflammation.

To eat grass fed beef or not?

- Less total fat
- More Omega-3 fatty acids
- More conjugated linoleic acid- decreases heart disease and cancer risks
- More antioxidants (vitamin E)



Dr. Weil vs. Mediterranean Diet

- Milk not allowed
 - Mostly organic
 - Mushrooms and Tea have their own food group
- Low fat milk and dairy allowed
 - Not as much emphasis with organic
 - Tea and mushrooms allowed but not encouraged
 - Easier on your wallet

The Mediterranean Diet



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Mediterranean Diet Basics

- More fruits and vegetables
- More whole grains
- No butter, substitute olive oil
- Red meat- 12oz per month
- Mostly poultry and fish
- More nuts and seeds
- More activity

Mediterranean Diet Daily Tips

- Base your diet on fruits, vegetables, whole grains, beans, nuts, and seeds.
- Keep baby carrots, apples, bananas, and other travel-friendly fruits and veggies around for quick snacks.
- Have quick breakfast of fruit and yogurt.
- Use extra-virgin olive oil or hummus on wholegrain bread and toast, instead of butter.
- Choose grilled fish or poultry for a protein-packed meal.
- Eat fish like tuna, salmon, trout, mackerel, and herring twice a week for omega-3's.
- Enjoy milk, yogurt, and small portions of cheese daily.
- Keep walnuts, almonds, peanuts, and other nuts on hand for a pick-me-up.



THANK
YOU

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University of Nebraska-Lincoln
Extension in Lancaster County

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