

NCCRA PIEDMONT REGION 2022 FALL MEETING

NUTRITION AND HEART HEALTH

Judith M. Hinderliter, MPH, RD,
LDN, CPT
UNC Cardiac Rehab Program
Clinical Dietitian
Judith.hinderliter@unch.unc.edu
984-974-2551

OBJECTIVES:

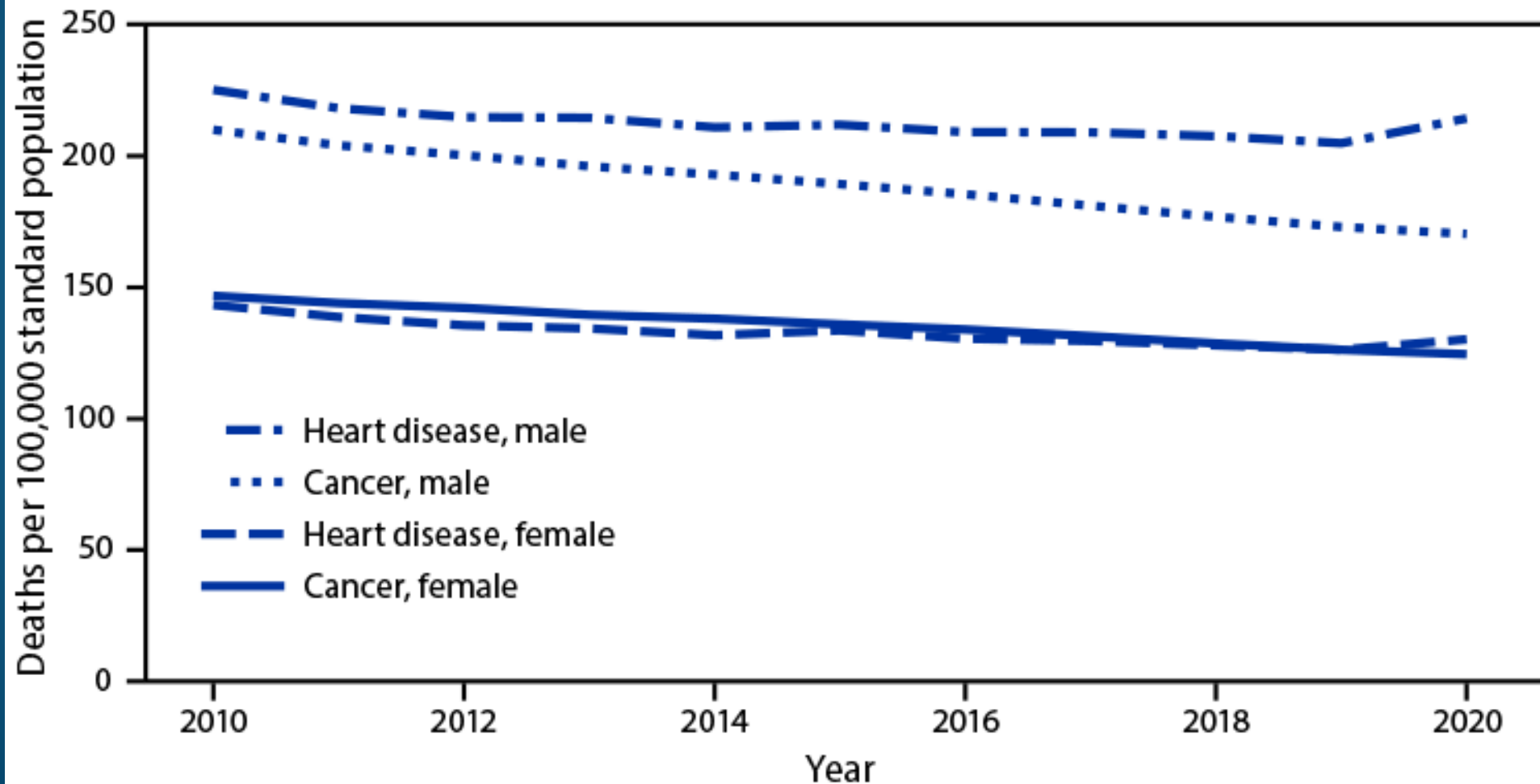
- 1. Explain how to use PICTURE PLATE (PYP)
- 2. Define the Cardioprotective Diet (CP) heart healthy eating goals
- 3. Apply the principles of the CP diet to the Cardiopulmonary Rehab population

Nutrition and Heart Health: What Should You Eat?

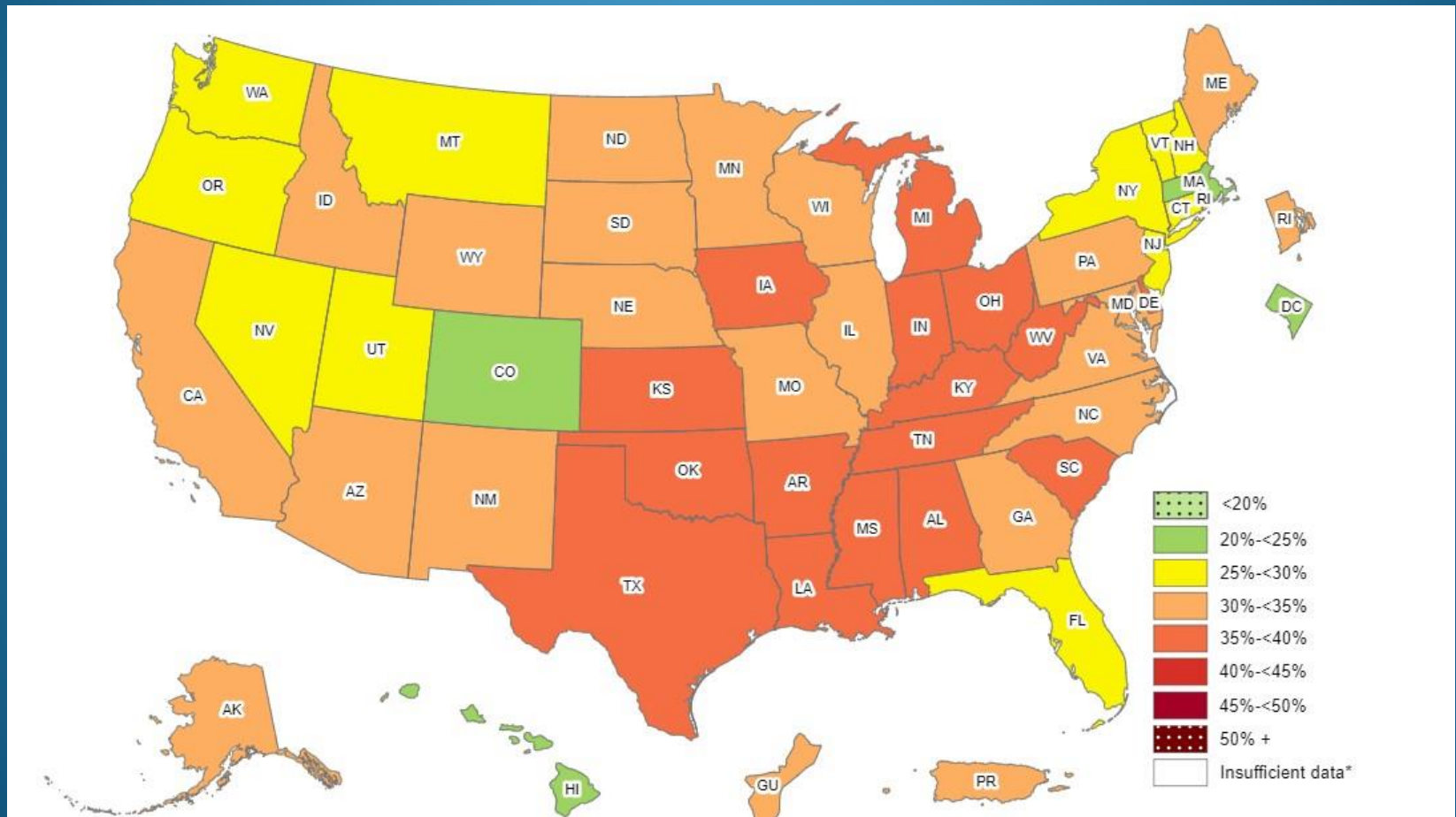


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More People are Dying From Heart Disease

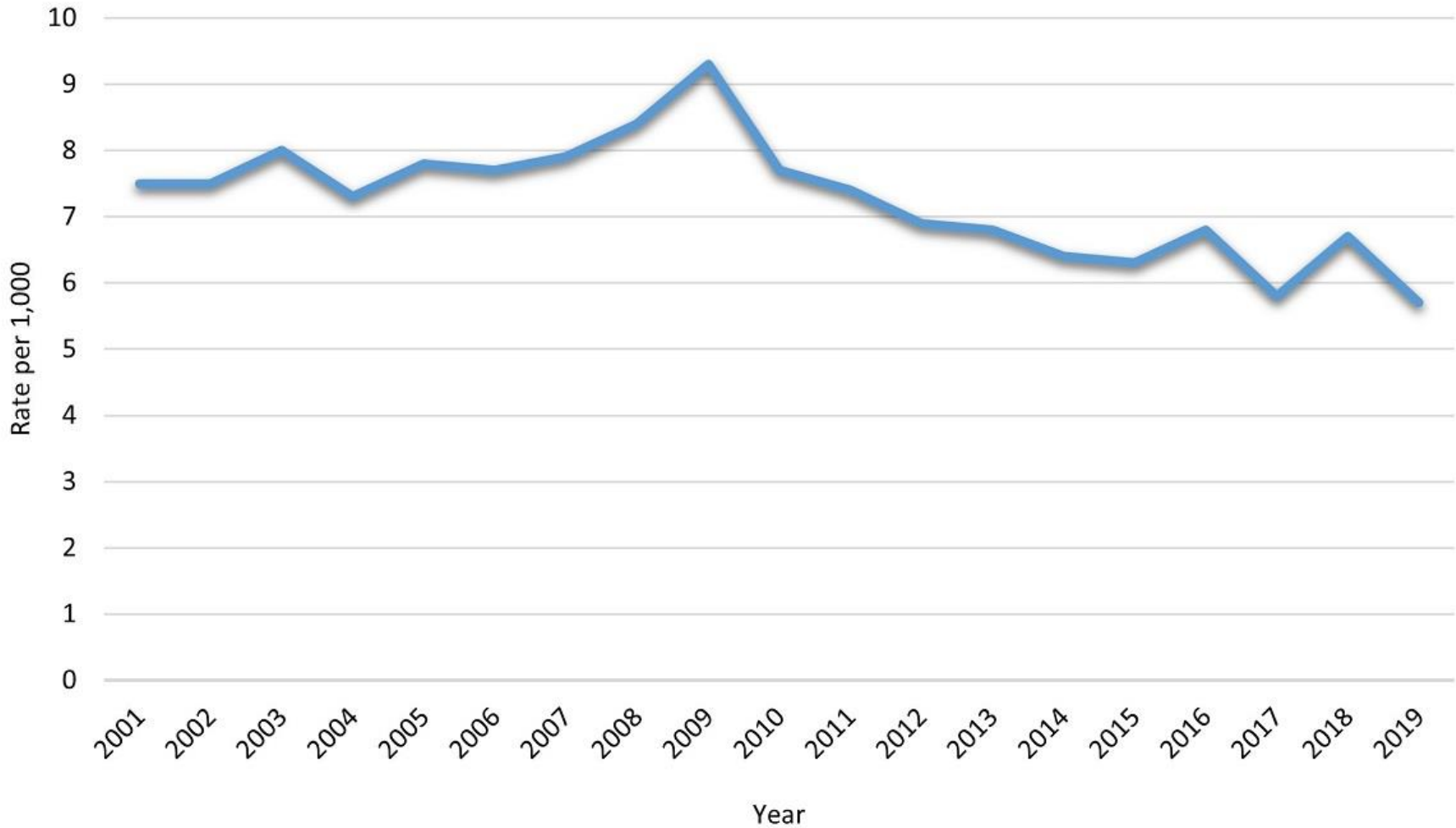


More people are obese



Adult obesity prevalence maps. Centers for Disease Control and Prevention. <https://www.cdc.gov/obesity/data/prevalence-maps.html#overall>. Published July 15, 2022. Accessed September 6, 2022.

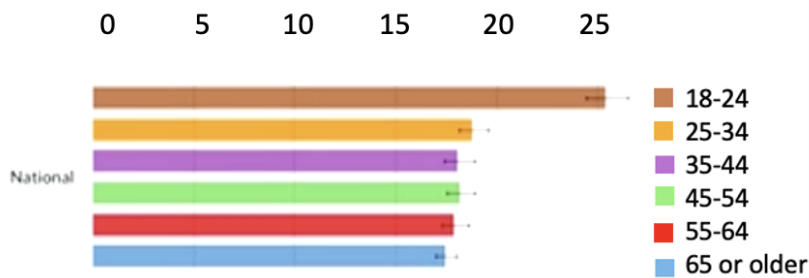
Many People Have Diabetes



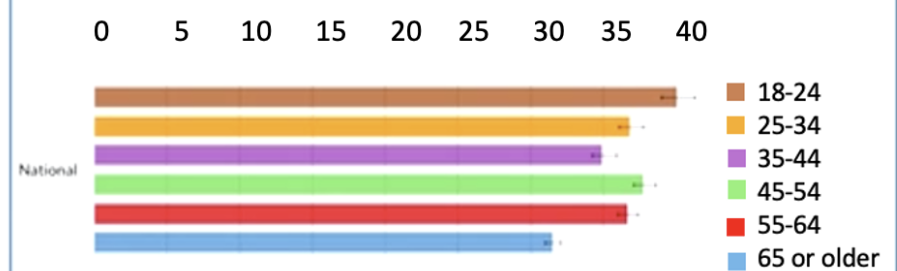
Center for Disease Control and Prevention: Trends in Incidence of Diagnosed Diabetes Among Adults Aged 18 Years or Older, United States, 2001–2019

Many People Have Poor Diets

Percent of US Adults Eating Vegetables < 1x/day (2017)

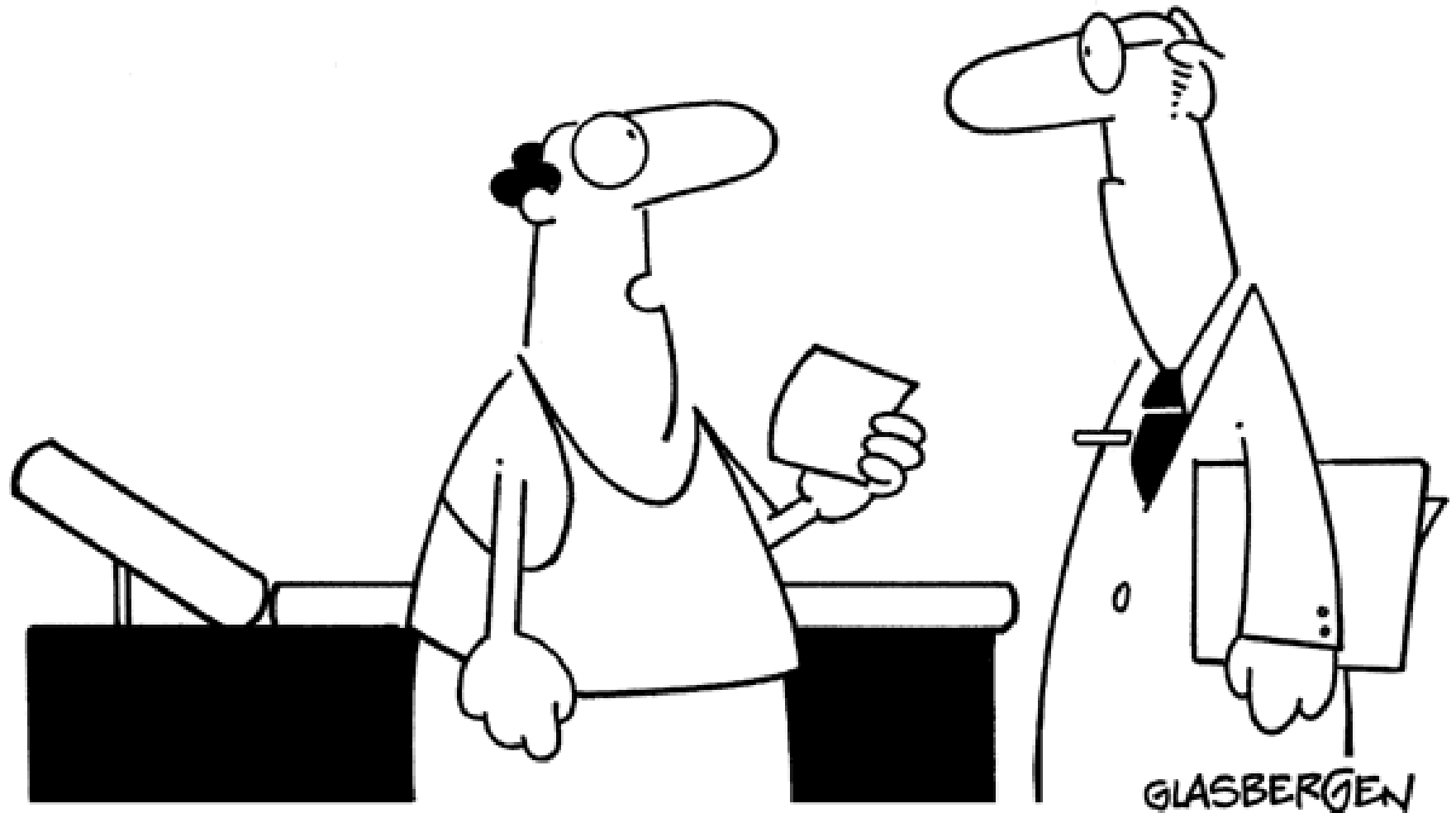


Percent of US Adults Eating Fruit < 1x/day (2017)



Percent of US Teenagers Drinking at least 1 Regular Soda per Day (2017)





**“Which ‘sensible diet’ do you want me to follow?
I found 123,942 of them on the internet!”**

Guide for Improving CV Health

- Consume an overall healthy diet pattern:
 - Emphasizes intake of vegetables, fruits, and whole grains;
 - Includes low-fat dairy products, poultry, fish, legumes, non-tropical vegetable oils, and nuts;
 - Limits intake of sweets, sugar-sweetened beverages, and red meats
 - Limits alcohol intake;
 - Limits heavily processed foods in diet

Guide for Improving CV Health

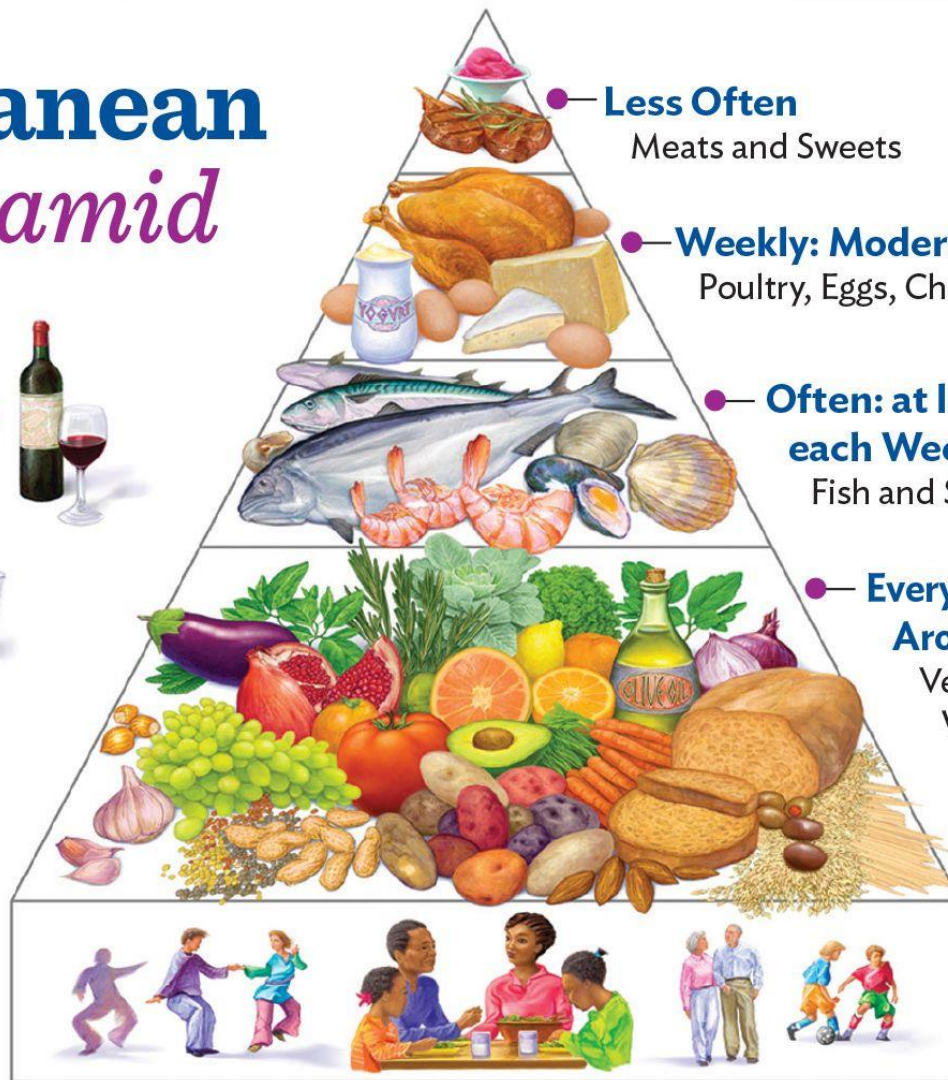
- Aim for a healthy body weight (BMI <25)
 - Lowers LDL and non-HDL cholesterol; increases HDL
 - Lowers blood pressure

Mediterranean Diet *Pyramid*

In Moderation —●
Wine



Every Day —●
Water



● **Less Often**
Meats and Sweets

● **Weekly: Moderate Portions**
Poultry, Eggs, Cheese and Yogurt

● **Often: at least Twice each Week**
Fish and Seafood

● **Every Day: Base Each Meal Around these Foods**
Vegetables, Fruits, Whole Wheat Grains, Olive Oil, Beans, Nuts, Legumes and Seeds, Herbs and Spices

● **Every Day**
Be Physically Active;
Enjoy Meals with Others

Illustration by George Middleton

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Mediterranean Diet

- This diet has been consistently beneficial when looking at reducing heart disease risk.

New England Journal of Medicine

- A recent study looked at participants who had a high risk for cardiovascular disease.
- Participants were randomly assigned to 1 of 3 diets and followed for about 5 years
 - Diet #1: Mediterranean diet plus home deliveries of extra virgin olive oil
 - Diet #2: Mediterranean diet plus nuts (almonds, hazelnuts, and walnuts)
 - Diet #3: low fat diet

Study Results

- Found a 30% lower risk of cardiovascular events (mostly strokes) in high risk people who followed diets #1 and #2:
 - 120 calories worth of
 - extra virgin olive oil (4 tsp) every day
 - or**
 - nuts (1/4 cup) every day
- Compared to those who followed diet #3 (low fat diet)



Cardioprotective Diet

Keep it Simple!

1. Vegetables

Goal: 4-5 servings daily

Serving size: 1 cup raw leafy veggies, ½ cup cooked raw or 100% juice

Example: 1 cup of spinach, ½ cup carrots, broccoli, asparagus, collard greens, or salsa
Does not include: starchy veggies (potatoes, peas, & corn)



2. Fruits

Goal: 4-5 servings daily

Serving size: 1 medium fruit (apple, peach), ½ cup fresh, frozen or unsweetened canned fruit (“In its own juices”)

Example: ½ cup berries, melon, & avocado



3. Whole Grains



Goal: 3 + servings daily

Fiber needs:

Men: 35-40 grams daily

Women: 25-30 grams daily

Serving size: 1 slice bread, 1 cup dry cereal, ½ cup rice,

pasta, hot cereal

Example: Choose “Whole Wheat” bread or pasta & ½ cup of oatmeal or brown rice

4. Low-Fat Dairy

Goal: 2-3 servings daily

Serving size: 1 cup (8 oz) milk or ¾ cup (6 oz) yogurt, 1 oz cheese (4 dice together)

Example: Skim or 1% Milk & low fat yogurt!



5. Fish & Shellfish

Goal: 2+ servings weekly

Serving size: 3.5 oz (deck of cards)

“Fatty Fish”: Salmon, Tuna, Trout, Herring, Sardines, Mackerel

Other Lean Protein Sources: Grilled, baked, roasted, or broiled chicken & fish, turkey breast, eggs, beans & lentils



6. Nuts & Seeds

Goal: 4-5 servings weekly

Serving size: 1 oz (a small handful)

Example: 23 almonds or 30 pistachios
Contains healthy fats, minerals, and protein!



7. Vegetable Oils (Unsaturated fats)

Goal: 2-6 servings daily

Serving size: 1 teaspoon oil; 1 tablespoon vegetable oil spread

Best choices: Olive, Canola, Safflower, Peanut, or Soybean oils.

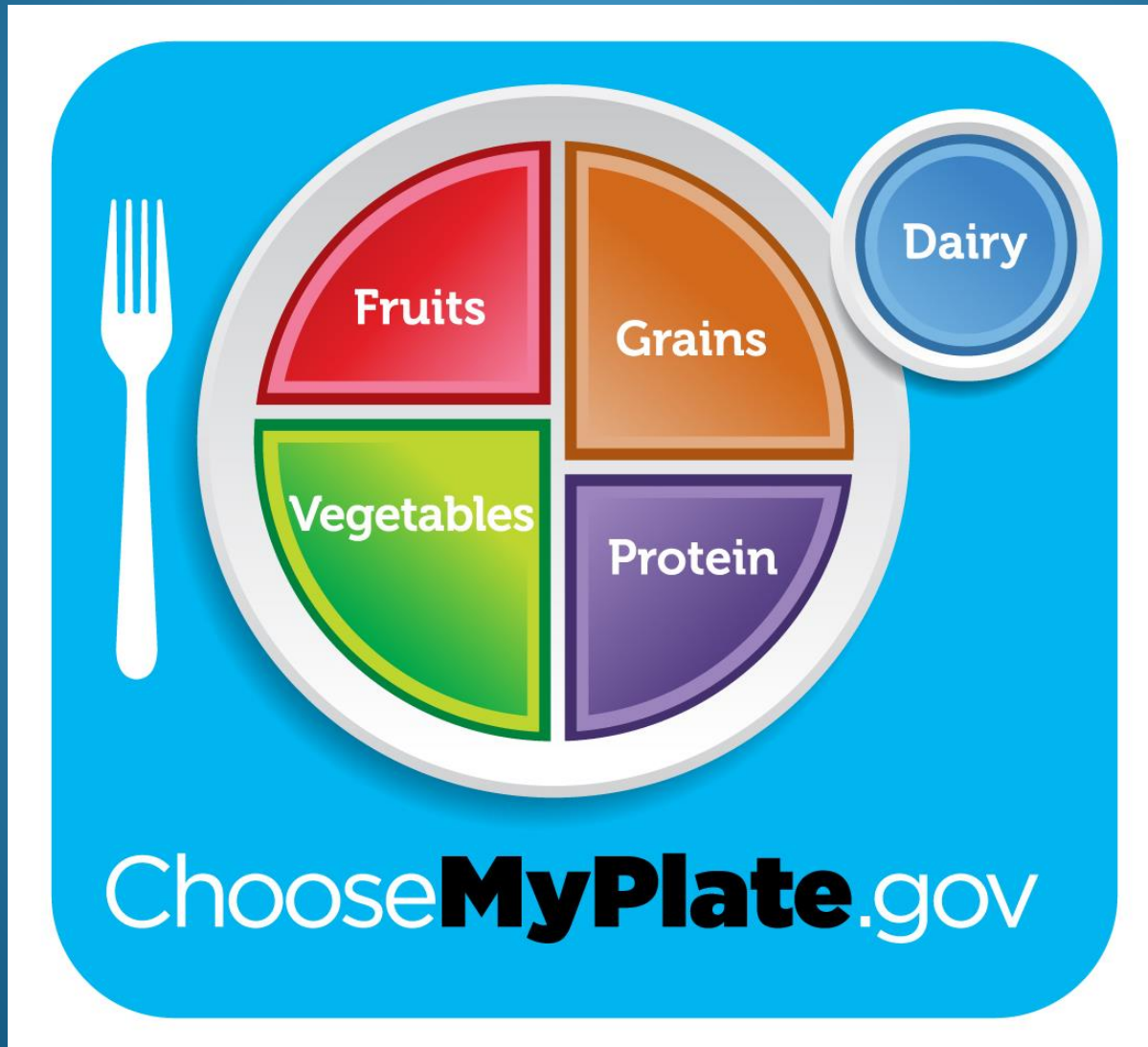
Aim for “Liquid” fat vs. “Solid” fat



Avoid: *trans*-fats, listed as “partially hydrogenated oils”

Limit: lunchmeat and cured meats (bacon), sugary beverages, sweets & baked goods made with “refined grains”.

USDA My Plate



Choose **MyPlate**.gov

Fiber Sources

- Legumes
- Fruits and vegetables
- Oats
- Whole-grain breads
- Some cereals
- Whole-wheat pasta
- Barley
- Brown rice
- Seeds and nuts
- Popcorn

A Prospective Study of Breakfast Eating and Incident Coronary Heart Disease in a Cohort of Male US Health Professionals:

- Data was collected on the eating habits of health professionals ages 45-82 years of age in a 16 year follow up beginning in 1992.

Results:

- After adjusting data for demographic, diet, lifestyle and CHD risk factors,
 - Men who skipped breakfast had a **27% higher risk** of CHD compared with men who did not.

Theory:

- Timing of the meal may be directly responsible for the metabolic effects that may lead to CHD.
- Eating habits may be a proxy for specific foods more likely to be consumed at certain times of the day.

Types of Fat

- Cholesterol
- Saturated fat:
 - Trans fat
 - Coconut oil
- Unsaturated fat:
 - Monounsaturated fat
 - Polyunsaturated fat
- Triglyceride

Examples of foods with saturated fat are:

- Fatty beef
- Lamb
- Pork
- Poultry with skin
- Beef fat (tallow)
- Lard and cream
- Butter
- Cheese
- Other dairy products made from whole or reduced fat (2%) milk

In addition, many baked goods and fried foods contain high levels of SFA. Some plant based oils, such as palm, palm kernel oil and coconut oil, also contain primarily SFA, but do not contain cholesterol.

Trans Fat

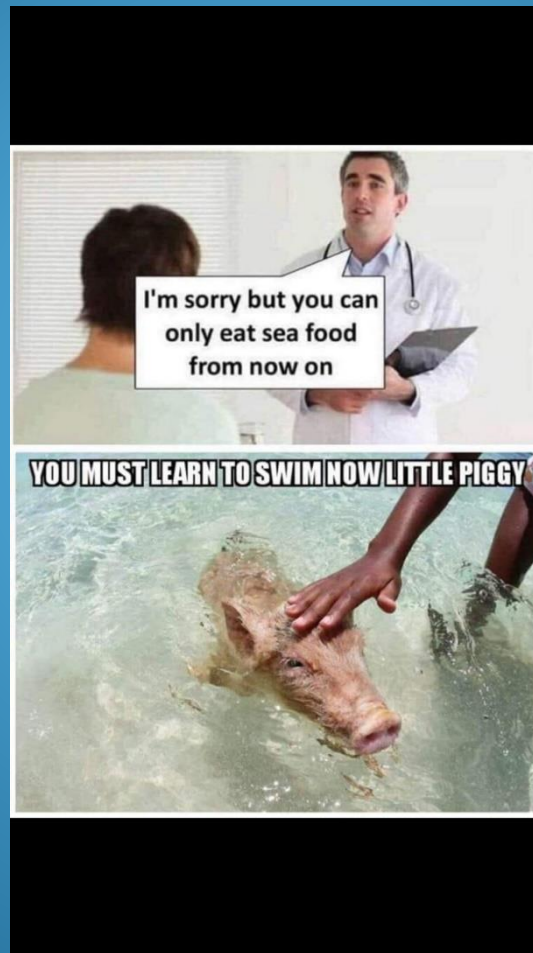
- *Trans* fats arise mainly from the industrial (partial) hydrogenation of unsaturated fats in oils to increase shelf life. In 2013 The USDA determined that partially hydrogenated oils are not longer GRAS in human food.
- Many restaurants and FF outlets use trans fats to deep fry foods because they can be used many times in commercial fryers.
- Some *trans* fat occurs naturally and are produced in the gut of some animals and foods made from these animals (full fat dairy and meat products) may contain small quantities of these fats.
- ***Trans* fats raise LDL cholesterol** and current guidelines support an association between a reduction trans fat and reduced CVD risk. Food labels have to indicate amount if over 0.5 **g/serving**
- Daily intakes should be as low as possible. Avoid processed foods with partially hydrogenated oils, use tub margarine over stick or butter, limit donuts, cookies, muffins, pies, and cakes; and avoid commercially fried foods.

Healthier Fats

- The American Heart Association recommends eating fish at least twice a week:
 - One serving is 3-4 ounces (oz)
 - 3 oz is the size of a deck of cards

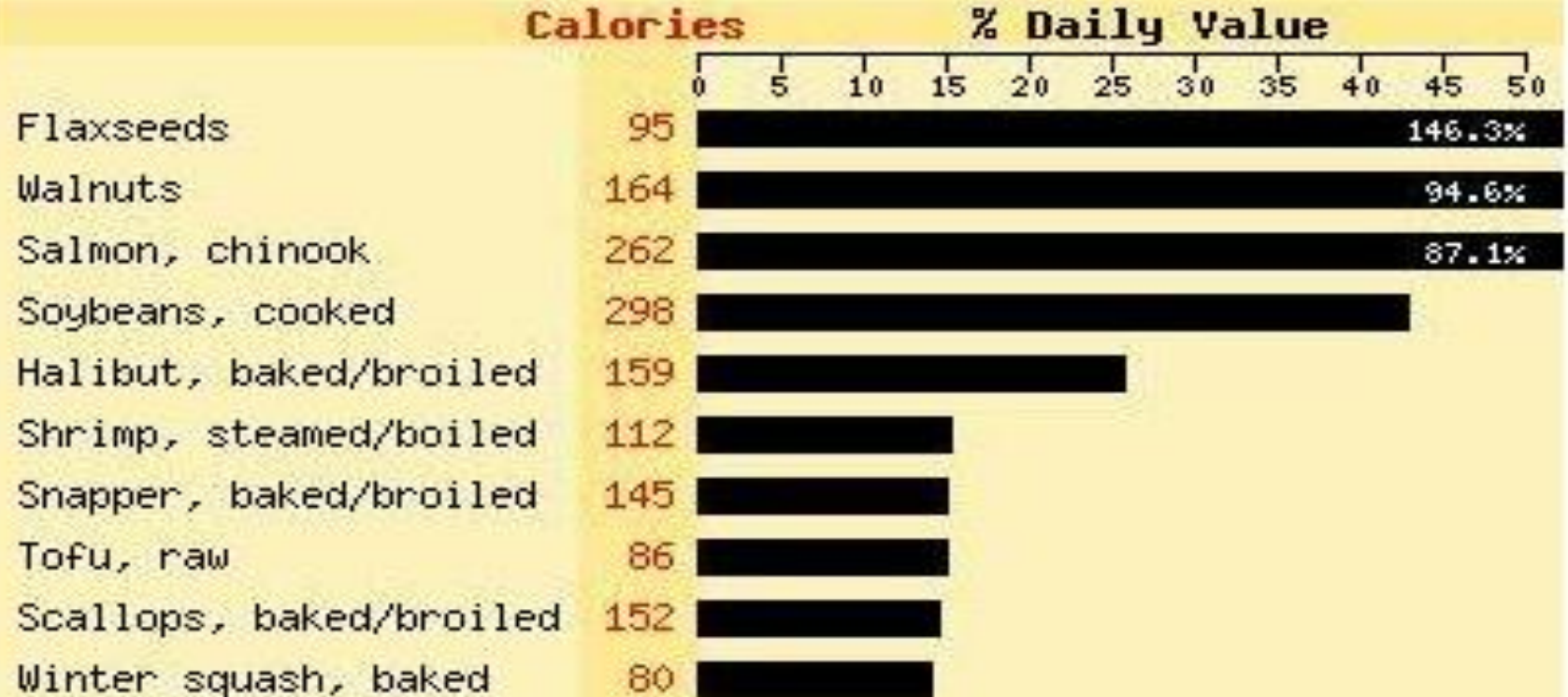


Not this kind of fish!



Where Do I Find Omega-3 Fatty Acids?

World's Healthiest Foods rich in Omega 3 Fatty Acids



What Is the Difference Really?



Help Your Health, Save Your Life

Chicken Breast (Fried)	Calories	Total Fat	Saturated Fat	Cholesterol	Sodium
With skin and breading	320	14 g	5 g	145 mg	1130 mg
Without skin or breading	130	2 g	0 g	90 mg	520 mg
SAVE	190	12 g	5 g	55 mg	610 mg

g=gram, mg=milligram

KFC Nutrition Guide

http://www.kfc.com/nutrition/pdf/kfc_nutrition.pdf



Healthy For Good™

THE FACTS ON FAT

The American Heart Association recommends replacing bad (saturated) fats with good (unsaturated) fats as part of a healthy eating pattern.

LOVE IT

UNSATURATED
(POLY & MONO)



- Lowers rates of cardiovascular and all-cause mortality
- Lowers bad cholesterol & triglyceride levels
- Provides essential fats your body needs but can't produce itself



LIMIT IT

SATURATED



- Increases risk of cardiovascular disease
- Raises bad cholesterol levels



LOSE IT

ARTIFICIAL TRANS FAT,
HYDROGENATED OILS
& TROPICAL OILS



- Increases risk of heart disease
- Raises bad cholesterol levels

Triglycerides

- Limit/avoid alcohol:
 - Beer, wine, or hard liquor
- Limit sugar:
 - Candy and regular soda
 - 40 g (10 tsp) of extras/day
- Eat fewer carbohydrates:
 - Breads
 - Cereals
 - Rice and pasta
 - Fruit juice
 - Etc

Do Not Drink Alcohol Excessively

One drink is equal to:

- 12 fluid ounces (fl oz) of beer or wine cooler
- 5 fl oz of wine
- 1.5 fl oz of 80-proof liquor

Moderate drinking is defined as:

- No more than one drink per day
for women
- No more than two drinks/day
for men



Drinking more than three drinks/day has a detrimental effect on the heart

Benefits of a Plant-Based Diet

1. Lose weight
2. Lower cholesterol
3. Reduce risk of heart disease



Components of a Vegetarian Diet



High Blood Pressure and Cardiovascular Risk

- High blood pressure, defined as $\geq 130/80$ mmHg (in people age <60):
 - 77.9 million - or 1 out of every 3 - American adults.
- Pre-hypertension (120/80 to 130/80 mmHg):
 - ~ 1 in 2 American adults
- CVD risk approximately doubles with each 20/10 mmHg



Salt Reduction to Prevent Hypertension and Cardiovascular Disease: JACC State-of-the-Art Review

Feng J He ¹, Monique Tan ², Yuan Ma ³, Graham A MacGregor ²

Affiliations + expand

PMID: 32057379 DOI: [10.1016/j.jacc.2019.11.055](https://doi.org/10.1016/j.jacc.2019.11.055)

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Abstract

There is strong evidence for a causal relationship between salt intake and blood pressure. Randomized trials demonstrate that salt reduction lowers blood pressure in both individuals who are hypertensive and those who are normotensive, additively to antihypertensive treatments. Methodologically robust studies with accurate salt intake assessment have shown that a lower salt intake is associated with a reduced risk of cardiovascular disease, all-cause mortality, and other conditions, such as kidney disease, stomach cancer, and osteoporosis. Multiple complex and interconnected physiological mechanisms are implicated, including fluid homeostasis, hormonal and inflammatory mechanisms, as well as more novel pathways such as the immune response and the gut microbiome. High salt intake is a top dietary risk factor. Salt reduction programs are cost-effective and should be implemented or accelerated in all countries. This review provides an update on the evidence relating salt to health, with a particular focus on blood pressure and cardiovascular disease, as well as the potential mechanisms.



What Can I Do To Improve My Blood Pressure?

Modification	Recommendation	Approximate SBP Reduction Range
 Weight reduction	Maintain normal body weight (BMI=18.5-24.9 kg/m ²)	5 mm Hg
 DASH eating plan	Diet rich in fruits, vegetables, low fat dairy and reduced in fat	11 mm Hg
 Restrict sodium intake	<1500 mg of sodium per day	5-6 mm Hg
 Physical activity	Be more physically active. Aim for at least 90 to 150 minutes of aerobic exercise per week.	5-8 mm Hg
 Moderation of alcohol consumption	No more than 2 drinks/day for men and 1 drink/day for women	4 mm Hg

BP = Blood pressure, BMI = Body mass index, SBP = Systolic blood pressure, DASH = Dietary Approaches to Stop Hypertension



American
Heart
Association.

Ranges According to 2017 Hypertension Clinical Practice Guidelines
Recommendations for Treatment and Management of Hypertension

DASH diet

6-8

servings per day
of whole grains

4-5

servings per day
of vegetables

4-5

servings per day
of fruits

2-3

servings per day of
fat-free or low-fat dairy

4-5

servings per week of
nuts, seeds, legumes

6

Less than
servings per day of
lean meat, poultry, fish

5

Less than
servings per week
of sweets

2-3

servings per day
of fats and oils



Source: National Heart, Lung and Blood Institute

The DASH diet (Dietary Approaches to Stop Hypertension) has been shown to help lower blood pressure and prevent heart disease, stroke, diabetes and even some forms of cancer. It focuses on eating more fresh fruits and vegetables.

This is a guide to how much of each food group you should eat every day, based on eating 2,000 calories per day.

UKHealthCare
Gill Heart Institute

Why Reduce Sodium?

- For a healthier blood pressure
- Extra sodium increases calcium losses



Ways to Decrease Sodium

- Do not add salt
- Use more fresh fruits, vegetables, and meats
- Season food with herbs rather than salt-based seasonings
- Try using lower-sodium products
- Watch out for condiments
- Rinse canned foods that contain salt with water (use a strainer)



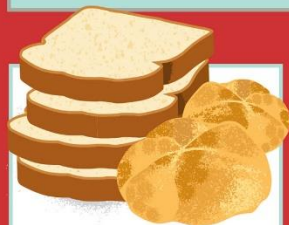
DID YOU KNOW?

THESE SIX POPULAR FOODS CAN ADD HIGH LEVELS OF SODIUM TO YOUR DIET¹

The American Heart Association recommends that you aim to eat less than 1,500 mg of sodium per day.



When you see the Heart-Check mark on a product, you know the food has been certified to meet nutritional criteria for heart-healthy foods, including sodium.



BREADS & ROLLS

Some foods that you eat several times a day, such as bread, add up to a lot of sodium even though each serving may not seem high in sodium. Check the labels to find lower-sodium varieties.

1



COLD CUTS & CURED MEATS

One 2 oz. serving, or 6 thin slices, of deli meat can contain as much as half of your daily recommended dietary sodium. Look for lower-sodium varieties of your favorite lunch meats.

2



PIZZA

A slice of pizza with several toppings can contain more than half of your daily recommended dietary sodium. Limit the cheese and add more veggies to your next slice.

3



POULTRY

Sodium levels in poultry can vary based on preparation methods. You will find a wide range of sodium in poultry products, so it is important to choose wisely.

4



SOUP

Sodium in one cup of canned soup can range from 100 to as much as 940 milligrams—more than half of your daily recommended intake. Check the labels to find lower sodium varieties.

5



SANDWICHES

A sandwich or burger from a fast food restaurant can contain more than 100 percent of your daily suggested dietary sodium. Try half a sandwich with a side salad instead.

6

NEW LABEL / WHAT'S DIFFERENT

Servings:
larger,
bolder type

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
<small>% Daily Value*</small>	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* 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.

Serving sizes
updated

Calories:
larger type

Updated
daily
values

Actual
amounts
declared

New
footnote

New:
added sugars

Change
in nutrients
required

% DV=Percent Daily Value

Terms used on food labels:

- **Sugar:** high fructose corn syrup or corn syrup, agave nectar, beet sugar, dextrose, honey, barely malt syrup or dehydrated cane juice, etc.
- **Salt:** sodium benzoate, disodium or monosodium glutamate (MSG). Sodium nitrate is in hotdogs, lunch meats, etc. It is used to preserve fish and meats and control bacteria.
- **Trans fats:** mainly partially hydrogenated oil and hydrogenated oil.

AHA Weighs in on Sugar

Dietary Sugars Intake and Cardiovascular Health

A Scientific Statement From the American Heart Association

Rachel K. Johnson, Lawrence J. Appel, Michael Brands, Barbara V. Howard, Michael Lefevre, Robert H. Lustig, Frank Sacks, Lyn M. Steffen, Judith Wylie-Rosett

and on behalf of the American Heart Association Nutrition Committee of the Council on Nutrition, Physical Activity, and Metabolism and the Council on Epidemiology and Prevention

Originally published 24 Aug 2009 | <https://doi.org/10.1161/CIRCULATIONAHA.109.192627> | Circulation. 2009;120:1011–1020

[Other version\(s\) of this article](#) ✓

Abstract

High intakes of dietary sugars in the setting of a worldwide pandemic of obesity and cardiovascular disease have heightened concerns about the adverse effects of excessive consumption of sugars. In 2001 to 2004, the usual intake of added sugars for Americans was 22.2 teaspoons per day (355 calories per day). Between 1970 and 2005, average annual availability of sugars/added sugars increased by 19%, which added 76 calories to Americans' average daily energy intake. Soft drinks and other sugar-sweetened beverages are the primary source of added sugars in Americans' diets. Excessive consumption of sugars has been linked with several metabolic abnormalities and adverse health conditions, as well as shortfalls of essential nutrients. Although trial data are limited, evidence from observational studies indicates that a higher intake of soft drinks is associated with greater energy intake, higher body weight, and lower intake of essential nutrients. National survey data also indicate that excessive consumption of added sugars is contributing to overconsumption of discretionary calories by Americans. On the basis of the 2005 US Dietary Guidelines, intake of added sugars greatly exceeds discretionary calorie allowances, regardless of energy needs. In view of these considerations, the American Heart Association recommends reductions in the intake of added sugars. A prudent upper limit of intake is half of the discretionary calorie allowance, which for most American women is no more than 100 calories per day and for most American men is no more than 150 calories per day from added sugars.

Dietary Sugar Intake and Cardiovascular Health

AHA recommends decreased intake of added sugars to no more than:

- **100 calories per day for women; 150 calories per day for men.**

What we know:

- In 2001-2004 the usual intake of added sugars for Americans was 22.2 teaspoons/day (355 cal).
- Sugar sweetened beverages are the main source of added sugars.
- Evidence from observational data: Increased sugar sweetened beverage intake is associated with greater energy intake, higher body weight, and lower intake of essential nutrients.

Sleep Durations and Cardiovascular Health

Sleep duration and quality is being emphasized for cardiovascular health:

- AHA recommends 7-9 hours per night for adults as the ideal average
- Helps reduce elevated blood pressure

Improve quality by:

- Reducing blue light exposure before bedtime
- Avoiding caffeine at night
- Drinking your fluids earlier in the day

Summary

Latest evidence for the role of diet in CVD supports:

- Cardioprotective Eating Plan
 - Mediterranean Diet
 - Decrease consumption of processed meats
- Not skipping meals
- Limit added sugars to no more than: 100 calories per day for women and 150 calories per day for men.
- Aim for two fish servings per week or incorporate non marine sources of omega-3's
- Include 2-3 servings of calcium rich foods per day and limit calcium supplements
- Avoid salt shaker and limit processed foods or foods in cellophane packages.
- Aim for 7-9 hours of sleep per night for adults.

Eating Tips

- Eat every 3-4 hours.
- Have a little protein every time that you eat.
- Eat $\frac{1}{2}$ as much twice as often and chew twice as long.
- Aim to eat healthy 80-90% of the time.
- Eat until you are 80% full.
- Have 3 bites of dessert.
- Limit alcohol to 1 drink or less for women and 1-2 drinks or less for men.

Eating Tips (Continued)

- Increase your water (or no calorie fluid) intake to at least 64 oz/day (UNLESS YOU ARE ON A FLUID RESTRICTION).
 - (Take your weight in #s divided by 2 to get oz needed per day. ie: if you weighed 200#s/2 =100oz/day)
- Make changes in your lifestyle (food and exercise) that you can do the rest of your life.
- Safe weight loss is 1% of your body weight/week.
- Consider using Myfitnesspal or Loselt to track your food and activity level.

I'M EATING
TWICE AS MANY
VEGETABLES
AS I USED TO!

TWO TIMES
NOTHING
IS STILL
NOTHING!



GLASBERGEN

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“Eat less and exercise more? That’s the most ridiculous fad diet I’ve heard of yet!”