The Impact of Diet on Heart Disease

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WHO WE ARE

Introduction to Stronger U

Nutrition coaching company

Change the way the world views food!

Started by Founder and CEO Mike Doehla in April 2015

Served 40,000 members in 50+ countries

Topics We'll Cover

- What is American Heart Month and why is it important?
- What is heart disease and how prevalent is it?
- What are the risk factors for developing heart disease?
    - Can we impact our risk?
- What is the role of diet in the development of heart disease?
    - What about exercise, sleep and stress?

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American Heart Month

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#OurHearts
are healthier together

February is American Heart Month

Share how your hearts are healthier together.

National Heart, Lung, and Blood Institute

THE heart TRUTH

February is American Heart Month

- Department of Health and Human Services, National Heart, Lung and Blood Institute
  - Raise awareness about heart disease being a leading cause of death in the US
  - Motivate people to adopt healthy lifestyles to prevent heart disease
  - 2021 - people with poor cardiovascular health are at increased risk of severe illness from COVID-19
- The Heart Truth
  - National Wear Red Day
  - Focused on increasing awareness specific to women

THE heart TRUTH®

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Heart Disease

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Heart Disease

- Disease of the heart and blood vessels
  - Leading cause of death for both men and women in the US
    - 655,000 deaths per year
      - 1 in 4 deaths
      - 1 person every 36 seconds
- Many different types of cardiovascular diseases
  - Coronary heart disease (CHD) is the most common type
    - Coronary arteries cannot deliver enough oxygen to the heart
  - Heart attacks are common
    - Someone has a heart attack every 40 seconds

Below are the percentages of all deaths caused by heart disease in 2015, listed by ethnicity, race, and sex.[5]

Race of Ethnic Group	% of Deaths	Men, %	Women, %
American Indian or Alaska Native	18.3	19.4	17.0
Asian American or Pacific Islander	21.4	22.9	19.9
Black (Non-Hispanic)	23.5	23.9	23.1
White (Non-Hispanic)	23.7	24.9	22.5
Hispanic	20.3	20.6	19.9
All	23.4	24.4	22.3

https://www.cdc.gov/heartdisease/facts.htm

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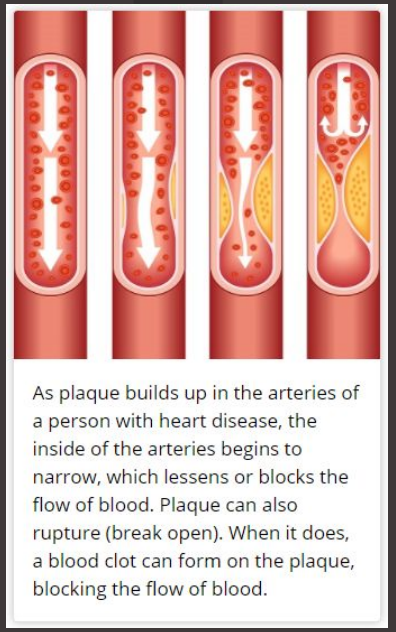
Heart Disease

- Primary underlying disease processes in heart disease
  - Atherosclerosis - plaque builds up inside your arteries overtime
    - Hyperlipidemia - high blood lipids
  - Hypertension - high blood pressure



As plaque builds up in the arteries of a person with heart disease, the inside of the arteries begins to narrow, which lessens or blocks the flow of blood. Plaque can also rupture (break open). When it does, a blood clot can form on the plaque, blocking the flow of blood.

https://www.cdc.gov/heartdisease/facts.htm

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Elevated Blood Cholesterol

- Cholesterol
  - Waxy substances essential for
    - Cell growth and maintenance
    - Production of sex hormones and nerves
- Can be obtained by the diet
  - Meat, poultry and dairy products
- Body manufacturer enough for its needs
- Elevated levels associated with increased risk for
  - Mortality and morbidity from heart disease

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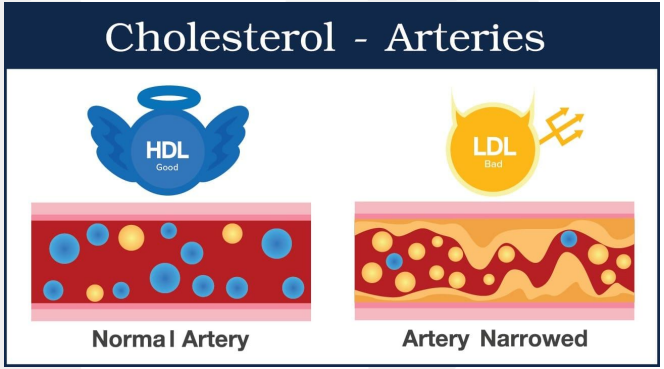
Elevated Blood Cholesterol

- Body's response to excessive cholesterol
  - Deposit unused cholesterol on inner walls of arteries
  - Over decades atherosclerosis can develop

- Low-density lipoprotein (LDL)
  - "Bad" cholesterol
  - Transports cholesterol to periphery
  - High affinity for sticking to artery walls

- High-density lipoprotein (HDL)
  - "Good" cholesterol
  - Transports cholesterol back to liver (trash collector)



https://www.murraycountymed.org/cholesterol-the-good-the-bad-the-ugly/

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Blood Cholesterol

- Influenced by
  - Diet
    - Saturated fat, trans fat, fiber
      - Increase total and LDL cholesterol
  - Weight
    - Being overweight increases total and LDL cholesterol
    - Weight loss
      - Decreases total and LDL cholesterol
      - Increase HDL
  - Exercise
    - Physical activity can lower LDL and increase HDL

High Blood Pressure

- High Blood Pressure
  - BP > 140/90mmHg
- Increases risk
  - Heart attack, stroke, heart failure
- Prevalence
  - Increases with age
    - 5% of 18-28 year olds; 68% of 80+ year olds
  - Race/ethnicity
    - Highest rates in African American and Hispanic men and women
  - Increase with overweight/obesity

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High Blood Pressure

- Over time
  - Damages arterioles (small arteries)
    - Thicker and less elastic
- With physical exertion
  - Aterioles in brain, heart, kidney can close, rupture, leak
    - Stroke, heart attack, renal accident
- Coupled with atherosclerosis
- Hypertension is present in
  - 69% of people with 1st heart attack
  - 77% of people with 1st stroke

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High Blood Pressure

- Often can be controlled by
  - Diet
    - DASH diet
    - Salt reduction in salt-sensitive individuals
  - Weight loss
  - Weight control
- Medication if necessary

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Risk Factors for Heart Disease

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Heart Disease Risk Factors

Risk Factors That Can Be Managed

You can control or treat these risk factors with lifestyle changes and your healthcare provider's help:

- High blood pressure
- Smoking
- High blood cholesterol
- Lack of regular activity
- Obesity or overweight
- Diabetes

Risk Factors You Can't Control

You can't change these risk factors:

- Age
- Gender
- Heredity (family health history)
- Race
- Previous stroke or heart attack

https://www.goredforwomen.org/en/know-your-risk/risk-factors

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Risk factors you CAN manage

- Behavioral risk factors
  - Eating habits
  - Physical activity
  - Sleep
  - Stress
  - Smoking
- Health conditions
  - High blood pressure
  - High cholesterol and triglycerides
  - Overweight and obesity
  - Diabetes
  - Metabolic Syndrome

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Diet and Lifestyle Behaviors

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Diet Recommendations to Reduce Risk

- Blood cholesterol
  - Reduce saturated and trans fat
  - Increase soluble fiber
  - Calorie balanced to maintain a healthy weight
- High blood pressure
  - Reduce sodium
  - Adequate potassium
  - Calorie balances to maintain a healthy weight

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Saturated Fat

- Raises LDL cholesterol more than any other component in your diet
- Consumption
  - Average US adult - 11% calories from saturated fat
  - Recommendation - <6% calories from saturated fat
    - About 11-13 grams per day for a 2000 calorie diet
- Saturated with hydrogen
- Solid at room temperature
  - Fatty cuts of meat, poultry skin, whole milk dairy, lard, coconut and palm oil, butter

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Saturated Fat

- Reduce saturated fat in your diet by
  - Limit intake of red meat
  - Limit intake of full fat dairy
    - Choose skim milk, low-fat or fat-free dairy intakes
  - Limit fried foods
  - Cook with healthy oils such as vegetable oils

- Recent recommendations
  - Replace saturated fat with unsaturated and Omega-3 fats
    - Walnuts, sunflower seeds, flax seeds, fish

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Trans Fat

- Created in a lab by adding hydrogen to liquid vegetable oils to make them solid
- Raises LDL and reduces HDL
- Commonly found in
  - Fried foods, baked goods such as pastries, pizza dough, pie crust, cookies and crackers
- Required on food labels since 2006
  - Many restaurants and food manufacturers have removed from products
- Recommendation is to remove from diet

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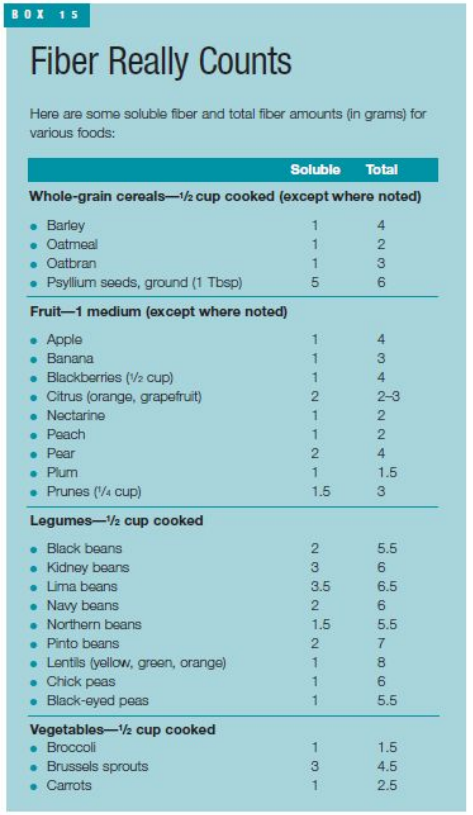
Soluble Fiber

- Fiber overall helps with weight management
- Dietary soluble fiber decreases total and LDL cholesterol
  - Soluble fiber sources
    - Fruits, vegetables, legumes
  - Increases fecal loss of cholesterol by binding bile salts and cholesterol in the intestine
    - Blocks absorption

- Recommendation
  - Total fiber
    - 21-25 grams per day for women; 30-38 grams per day for men
  - Soluble fiber
    - At least 5-10 grams of soluble fiber



BOX 15

Fiber Really Counts

Here are some soluble fiber and total fiber amounts (in grams) for various foods:

	Soluble	Total
Whole-grain cereals—½ cup cooked (except where noted)		
• Barley	1	4
• Oatmeal	1	2
• Oatbran	1	3
• Psyllium seeds, ground (1 Tbsp)	5	6
Fruit—1 medium (except where noted)		
• Apple	1	4
• Banana	1	3
• Blackberries (½ cup)	1	4
• Citrus (orange, grapefruit)	2	2–3
• Nectarine	1	2
• Peach	1	2
• Pear	2	4
• Plum	1	1.5
• Prunes (¼ cup)	1.5	3
Legumes—½ cup cooked		
• Black beans	2	5.5
• Kidney beans	3	6
• Lima beans	3.5	6.5
• Navy beans	2	6
• Northern beans	1.5	5.5
• Pinto beans	2	7
• Lentils (yellow, green, orange)	1	8
• Chick peas	1	6
• Black-eyed peas	1	5.5
Vegetables—½ cup cooked		
• Broccoli	1	1.5
• Brussels sprouts	3	4.5
• Carrots	1	2.5

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DASH Diet

- Developed by research sponsored by the National Institutes of Health
  - Dietary Approaches to Stop Hypertension (DASH)
  - Purpose - to lower blood pressure
  - Also reduced risk for
    - Heart disease, come cancers, kidney stones, diabetes
  - Effective for weight loss
- Recommended by
  - NHLBI, American Heart Association, Dietary Guidelines for Americans

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DASH Diet

- Rich in
  - Fruits, vegetables, low or non-fat dairy, whole grains
  - Potassium, magnesium, calcium, fiber
    - Help reduce blood pressure
- Moderate levels
  - Lean meats, healthy fats
- Lower in
  - Sodium
    - Meet 2300 mg/d recommendation
      - Some may see benefit with reducing to 1500mg/d

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THE SALTY SIX

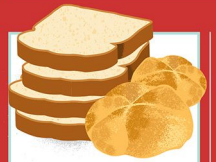
DID YOU KNOW?

American Heart Association.
life is why

THESE SIX POPULAR FOODS CAN ADD HIGH LEVELS OF SODIUM TO YOUR DIET[1]

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.

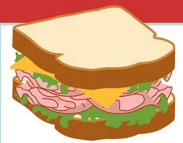


1 BREADS & ROLLS

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.

2 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.



3 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.

4 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.

5 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.

6 CHICKEN

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.

[1]Quader ZS, Zhao L, Gillespie C, et al. Sodium Intake Among Persons Aged ≥2 Years — United States, 2013–2014. MMWR Morb Mortal Wkly Rep 2017;66:324–238. DOI: http://dx.doi.org/10.15585/mmwr.mm6612a3.

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DASH Diet

Type of food	Number of servings for 1600 - 3100 Calorie diets	Servings on a 2000 Calorie diet
Grains and grain products (include at least 3 whole grain foods each day)	6 to 12	7 to 8
Fruits	4 to 6	4 to 5
Vegetables	4 to 6	4 to 5
Low fat or non fat dairy foods	2 to 4	2 to 3
Lean meats, fish, poultry	1.5 to 2.5	2 or less
Nuts, seeds, and legumes	3 to 6 per week	4 to 5 per week
Fats and sweets	2 to 4	limited

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Eating Recommendations Summary

- Base of diet
  - Fruits, vegetables, whole grains, fat-free/low-fat dairy, protein rich foods (fish, lean meats, nuts, seeds, soy, legumes), unsaturated fats (oils, nuts, seeds, fish, avocado)
- Limit
  - Saturated fat, trans fat, added sugars, alcohol

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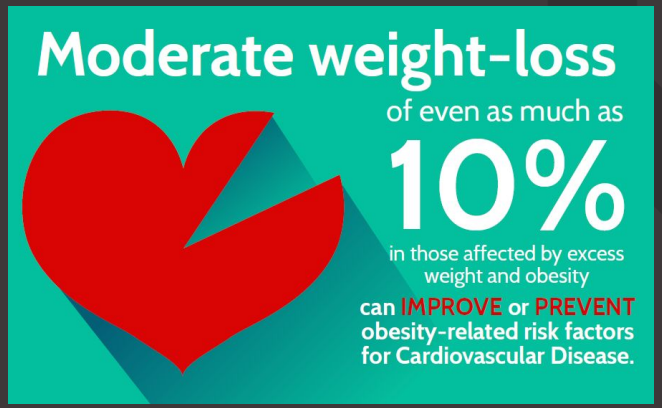
How does weight impact heart disease?

- Obesity is associated with
  - High blood pressure
  - High blood lipids
  - Diabetes or insulin resistance
  - Elevated levels of fibrinogen and C-reactive protein



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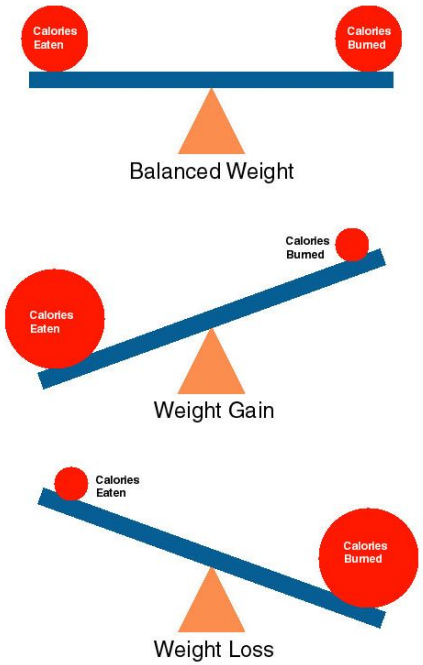
Weight and Energy Balance



https://myobrain.com/nutrition-essentials/meal-frequency-energy-balance

Diet	How It Works	Why It Works
Macro Counting/IIFYM	Track and eat a specific amount of each macro (carbs, fat, protein)	Creates a calorie deficit
Keto Diet	Eat almost 0 carbs, high fat and moderate protein	Creates a calorie deficit
Intermittent Fasting	Eat for only a certain number of hours per day	Creates a calorie deficit
Paleo Diet	Eat no processed food or dairy	Creates a calorie deficit
Low Carb Diet/Atkins	Eat high protein, moderate fat, low carb	Creates a calorie deficit
Weight Watchers	Eat a certain number of "points" that represent an amount of food	Creates a calorie deficit

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Physical Activity

- Physical activity increases HDL levels
- Moderate-intensity aerobic activity
  - At least 150 minutes can lower cholesterol and high blood pressure
  - Walking, swimming, bicycling, yard work, etc.
- Strength training
  - Reduce muscle and bone loss
  - At LEAST 2x/week working every major muscle group
- Daily movement
  - Non-exercise activity thermogenesis (NEAT)

https://health.gov/our-work/physical-activity/current-guidelines/scientific-report

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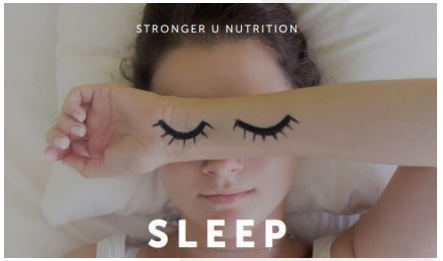
Sleep

- Most adults need 7-8 hours of sleep per night

- Getting adequate sleep
  - Reduces hunger
  - Reduces stress
  - Allows for better decision making
  - Related to improved blood glucose control
  - Impacts weight control and body composition
  - Blood pressure is reduced while sleeping



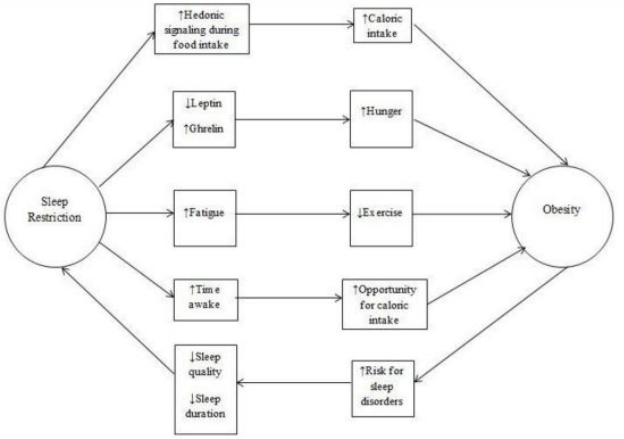


Figure 1 Summary of proposed mechanisms that stimulate the relationship between sleep deprivation and obesity.

Cooper CB, *et al. BMJ Open Sport Exerc Med* 2018;**4**:e000392. doi:10.1136/bmjsem-2018-000392

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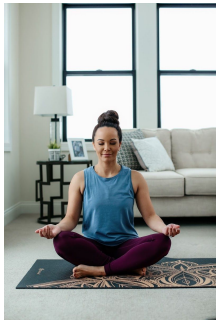
Stress

- Hormones and habits related to stress can both have an impact on heart disease
- Stress management techniques
  - Regular exercise, walking
  - Balanced diet
  - Meditation, yoga
  - Sleep
- Positive mindset



Real Life Application

HOW TO DEAL WITH STRESS IN A HEALTHY WAY.

The good news is there are lots of healthy coping mechanisms you can adopt that can support your goals.

PAUSE	SUPPORT	DISTRACT	BALANCE
Put the food/drink down and tune into the cause behind the urgent and indulgent behavior. Take 4 deep breaths and identify the exact emotions you feel. Identify how the act of consuming the indulgent food/drink will take away or decrease the stressful situation at hand.	Call a friend, family member, or other supportive individuals to help you process your stressful thoughts and emotions.	Identify non-food related activities to distract yourself; exercise, gardening, cleaning, reading, journaling, and/or other hobbies. Practice gratitude and focus on what you can control.	Engage in mindful eating practices where you eat in response to hunger and stop eating when you are full.

THE GREATEST WEAPON AGAINST STRESS IS OUR ABILITY TO CHOOSE ONE THOUGHT OVER THE OTHER.

-William James

Behavioral impacts of chronic stress:

consumption of high fat, salt and sugary foods.

likelihood of drinking alcohol and smoking.

sedentary behavior leading to fewer calories burned

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Smoking Cessation

- 30% of all heart disease deaths in the US are attributable to cigarette smoking
  - Strongly dose-related
- Increases risk of heart disease by
  - Increasing blood pressure
  - Decreasing exercise tolerance
  - Decreasing HDL
  - Increasing tendency for blood to clot
  - Introducing toxic components into circulation
- Risk decreases as soon as smoking stops and decreases further as time goes on

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#OurHearts

track our health stats together

Heart disease is largely preventable, yet many Americans remain at risk of getting it.

- Make a plan with a friend to get heart healthy and track your progress.
- Remind each other to keep a log of your blood pressure numbers, weight goals, and physical activity, and if you have diabetes, your blood sugars. The log will help you stay on a heart-healthy track.

#OurHearts

are healthier together

NIH National Heart, Lung, and Blood Institute

THE heart TRUTH®

Tying It All Together

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In Summary

- Heart disease is prevalent in the US
- Risk factors
  - Some cannot control
  - Many that you can
- Lifestyle behaviors
  - Healthy eating
  - Physical activity
  - Maintain a healthy weight
- Know your risk

Looking for support?

- Awareness and accountability are key for making changes
- Get an objective look at your habits
- Envision and achieve success!

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Thank You!

Looking for more information?

info@strongeru.com

https://strongeru.com/

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