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Top 10 Food Strategies to Reduce Heart Disease Risk

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February 28, 2024

Top 10 Strategies

1. Protect the nitric oxide on-demand system in arteries
2. Nurture the gut microbiome
 - *Balancing calorie usage, TMAO*
3. Shut off long-term inflammation sources
 - *Visceral fat, Lipopolysaccharides*
4. Counteract with anti-inflammatory food
5. Keep the flow of cholesterol traffic exit
6. Maintain the sodium safety valve in the kidneys
7. Color your plate with anti-oxidants
8. Avoid overworking body's insulin
9. Calories: Chew more, Drink less
10. Weave social connections around healthy food

Lining of arteries

Strategy # 1. Protect nitric oxide on-demand system.

What is it?

- Lining of arteries are made of cells (endothelia) that produce nitric oxide on demand.
- Nitric oxide opens the girth of arteries to let in more oxygenated blood when in demand (e.g. shoveling)
- Injury to the lining from food impacts nitric oxide availability when in dire need.

How?

- Avoid high-fat meals (animal and plant-origin)
- Avoid or minimize cooking oil (all types of oils)

Gut bacteria

Strategy # 2. Nurture the gut microbiome.

What is it?

- Gut microbiome refers to friendly gut bacteria
- When thriving, such bacteria govern how much of the calories we consume are used up vs being stored as fat.
- Having enough friendly bacteria in the gut reduces production of harmful TMAO that results in heart attacks and strokes.
- TriMethylAmine N-Oxide (TMAO) is a byproduct of bacterial breakdown of animal foods consumed (sources of L-Carnitine and Choline).

How to maintain enough friendly bacteria in the gut?

Increase dietary fiber by adding more: Leafy greens, vegetables, beans/lentils, wholegrains

Long-term inflammation

Strategy # 3. Shut off sources of long-term inflammation.

What is it?

- Excess calories build harmful visceral fat that increases long-term inflammation in the body.
- Food related injury to the lining of gut results in release of harmful Lipopolysaccharides (LPS) from the unfriendly gut bacteria.

How?

- Mindful eating to pay attention to feeling hungry vs no longer hungry vs uncomfortably full. This helps to avoid excess calories.
- Choose nutrient-dense food over caloric-dense.
- Minimize high fats, high sugars in diet that can injure the gut lining and release LPS from unfriendly bacteria.

Long-term inflammation

Strategy # 4. Counteract with anti-inflammatory food.

What is it?

- Inflammation is reaction of body to an insult/injury. It usually involves high number of white blood cells and their messenger molecules.
- In the arteries, long-term inflammation build blood clot and eventually breaks open its lid to initiate a heart attack.

How to counter long-term inflammation?

- Same approach as to nurture gut microbiome and in addition....
 - Flax powder (source of omega-3 fats and dietary fiber)
 - Walnuts (source of omega-3 fats and dietary fiber)
 - Leafy greens (source of omega-3 fats and dietary fiber)

High cholesterol

Strategy # 5. Keep the flow of cholesterol traffic exit.

What is it?

- Excess cholesterol is diverted away from circulation by ‘secondary’ bile acids in the gut and eliminated in the stools.
- Having enough healthy bacteria allows for enough secondary bile acids to flow to keep the excess cholesterol exiting from the body naturally via stools.
- When this exit system is overwhelmed due to too much fats coming in via meals, the system starts to store the cholesterol/fat in the liver, again diverting it away from arteries.

How to facilitate exit of excess cholesterol?

Enhance the effect of friendly bacteria’s production of secondary bile acids by increasing dietary fiber: Leafy greens, vegetables, beans/lentils, wholegrains (e.g., rolled oats)

High blood pressure

Strategy # 6. Maintain kidneys' sodium safety valves.

What is it?

- Kidneys and their blood circulation has an intricate system of sensing the sodium level in circulation and maintaining it at a steady state.
- Like a safety valve, kidneys will let out any excess blood sodium and push the excess out through the urine.
- Failure of the sodium safety valves in the kidneys are responsible for high blood pressure in 3 out of 4 individuals.
- Higher intake of dietary potassium (in someone with normal functioning kidneys) also helps with sodium safety valve

How ?

- Leafy greens and fruits are high in potassium.
- Increase dietary fiber to assist friendly gut bacteria by adding: Leafy greens, vegetables, beans/lentils and wholegrains
- Avoid consuming excess sodium/table salt

Anti-oxidants

Strategy # 7. Color your plate with anti-oxidants.

- Anti-oxidants donate an electron to slow down unpaired, high-energy electron (“oxidants”) that can cause damage to lining cells of arteries.
- Anti-oxidants also prevent the platelets from getting too sticky and form blood clots.

How?

- Colorful fruit and vegetables
- Leafy greens
- Cacao
- Green tea
- Herbs, and spices

Insulin

Strategy # 8: Avoid overworking body's insulin

- High intake of fats, sugars, and animal protein can injure gut lining, promote long-term inflammation, and lead to high blood sugar.
- Body's insulin system responds to the high blood sugar by pouring more insulin into the circulation.
- High blood levels of insulin injures the lining of arteries and also increases blood pressure.

How?

- Consume less fats
- Avoid sugars and processed carbohydrates such as pastries and white bread/rice.
- Minimize or avoid animal protein

Chewing for health

Strategy # 9. Calories: Chew more, Drink less.

What?

- Chewing food instead of drinking it allows for the salivary enzymes to work on the food.
- Chewing food with high natural content of nitrates, breaks down the nitrates to nitric oxide.
- This nitric oxide help maintain the health of arteries.

How?

- Plant-foods high in natural nitrates: spinach, Bok choy, lettuce, carrots

Social connectedness

Strategy # 10. Weave social connections around healthy food.

What ?

- Social connectedness has been shown to reduce inflammation and improve health.

How?

- Maintain regular and meaningful interactions with friends and/or family members.
- Event better, integrate healthy food in these get togethers!

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