Nutrition, Health and Disease Prevention

Week 2

Atherosclerosis, Cardiovascular Disease, Stroke, Heart Attack,
Types of Fats
Magnesium and Heart Muscle
Program for Vascular Health
* https://www.youtube.com/watch?v=OHE1ig4k64M&t=9s
Atherosclerosis
Arteriosclerosis; Hardening of the arteries

- Number one killer in the US (1 million deaths per year)
- Over 40 million Americans suffer from atherosclerosis
- Cost for treatment: $259 billion annually
- Affects arteries to the heart, brain, legs, kidneys
- Millions are unaware that 80-90% of blood vessels are occluded
Atherosclerosis

- Injury allows substances to get inside the lining (oxidized fats and cholesterol, creating an inflammation)
- WBC’s flow to the site to ‘kill’ the invader which magnifies the inflammation with accumulated foam cells
 Stroke is when blood supply to brain is interrupted and produces tissue damage and impaired function

- 90% of strokes are Ischemic (dry) cause by clot, plaque
- 10% are hemorrhagic due to ruptured blood vessel
TIA’s

- Reduced blood supply to part of the brain (left vessels)
- Brief spells of unable to speak or move, goes away
- They are warning signs, cannot be ignored!
- When they happen we need to keep the anti-oxidant defenses up
Myocardial Infarction  
Heart Attack

- Same process that causes strokes cause heart attacks
- One or more arteries to the heart are blocked
- Damaged heart muscle release free radicals and can further damage heart muscle
- Increasing anti oxidant vitamins and magnesium can reduce damage

Food Sources of Magnesium
- Wheat Bran
- Almonds
- Spinach
- Cashews
- Black-eyed peas
- Oatmeal
- Peanuts
- Brown rice
How Plaque is formed

- Damage to endothelium (blood vessel lining) due to:
  - Smoking, Diabetes, Oxidation of cholesterol, Inflammation
- WBC sends macrophages ‘to the rescue’ who in turn eats the damaged cholesterol
- Macrophages become ugly foam cells that attach to each other and turn into plaque
Progression of Atherosclerosis

- Begins in early childhood
- At age 20, plaque are very visible
- Blood flow is impaired at 60-70 percent occlusion
- Begins with a small kink or injury to the lining (endothelial cells)
Homocysteine: Another contributor to damaged arterial wall

* Homocysteine is an amino acid and breakdown product of protein metabolism
* In high concentrations, has been linked to an increased risk of heart attacks and strokes.
* Elevated homocysteine levels are thought to contribute to plaque formation by damaging arterial walls and increase the risks of clot formation;
* Some evidence suggests that people with elevated homocysteine levels have twice the normal risk of developing Alzheimer’s disease.
* Blood levels of homocysteine tend to be highest in people who eat a lot of animal protein and consume few fruits and leafy vegetables, which provide the folic acid and other B vitamins that help the body rid itself of homocysteine.
Risk Factors
(Contributing factors)

- Poor Diet
- Chronic Stress
- Excess Alcohol
- Drug Abuse
- High Blood Pressure
- Smoking
- Chronic Inflammation
- High Blood Sugar (Diabetes or Insulin Resistance)
- Age
- Male
Poor Diet
Saturated Fat, Sugar, Salt, Excess Calories
Diet Deprived these of Nutrients
Chronic Stress

- High stress job is one of top 3 cause of stress
- Mental vulnerability or handling of stress
- Can damage blood vessels
- Can cause high blood pressure
Over Indulging

* Benzoapyrene (BaP), a toxic compound in cigarette smoke, lowers "good" cholesterol HDL, which helps prevent heart disease.
* Excess alcohol affects muscle functions of heart and blood vessels and reduces amount of RBC’s to the heart
Pro and Anti-inflammatory Pathways

**Omega-6 fatty acids**
- Linoleic Acid
  - (margarine, vegetable oils, shortening)
  - Production of **Pro-Inflammatory Compounds**

**Omega-3 fatty acids**
- Alpha-linolenic Acid
  - (green leafy vegetables, flaxseed, walnuts, fish)
  - Production of **Anti-inflammatory Compounds**

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Columbia University Medical Center, NY, presented evidence supporting a specific link between insulin resistance and atherothrombotic vascular disease.

Same researcher showed that macrophages with defective insulin signaling have an enhanced macrophage death pathway.
A lipid-protein molecule made by all mammals
Essential in the structural part of all our cell membranes
Most of cholesterol we eat is ‘esterified’ and poorly absorbed
Additional cholesterol is made, when there’s a lack
50% of cholesterol excreted in bowel is reabsorbed and recycled
Functions of Cholesterol

* Requires to build and maintain fluidity of cells
* Provides insulation to cells for better impulse transmission and nerve conduction
* Precursor for Vitamin D production
* As well as Steroid Hormone production
  Adrenal hormone, Cortisol, Aldosterone
* And Sex Hormones
  Progesterone, Estrogen, Testosterone
Little or no statistical evidence links reduced cholesterol to fewer heart attacks

Studies that shown cholesterol lowering drugs reduced cardiac mortality, use up antioxidants

Connection between cholesterol drugs and cancer is omitted from the PDR

Lipoprotein A, not LDL is the culprit
Lipoprotein A

- Is hereditary
- Not affected by fat intake, smoking or exercise
- Can be reduced by adequate intake of Vitamin C and B vitamin complex
2 Forms of LDL molecule:
Small - easily oxidized and appear to be more harmful
Large - may be protective against atherosclerosis, just like HDL

It is important to know and find out levels of both types

High intake of Omega 3 fats can increase the good form of LDL
A Closer Look at Crud Composition

- Oxidized LDL’s
- Infectious organisms: Chlamydia, Herpes virus and other detrimental organisms like H Pylori, Nanobacterium coated with Calcium
Prevent Plaque Formation

1. Slow down oxidation of fats and cholesterol:
   Eat more fruits and vegetables (anti oxidants)
   Drink more tea (polyphenols)
   Don’t smoke or drink heavily

2. Lower homocysteine levels
   Increase B12, B6, Folic acid

3. Decrease animal fat intake to lower cholesterol

4. Prevent Inflammation
Lowering Homocysteine Levels naturally!

Resources:
- Spinach
- Turnip greens
- Free range eggs
- Asparagus
- Garlic
- Raw nuts
- Fruits
- Black-eyed peas
- Turmeric
- Broccoli
- Exercise
- Organic brown rice
Using drugs to thin blood may produce major complications:

1. Aplastic Anemia
2. Extreme fatigue
3. Leukemia
Aspirin as Blood Thinner

- Safer than prescription drugs, but associated with:
  - Ulcer activation
  - GI hemorrhages
  - Kidney damage
  - Hemorrhagic stroke
- Does not strengthen blood vessels
Natural Blood Thinners

- Pycnogenol, Grape Seed Extract protects blood vessels from free radical damage
- Curcumin and Quercetin neutralizes free radicals
- Copper and Zinc maintains blood vessel strength
Protective Nutrients

- Vitamin E and LDL
- Omega 3 Fatty Acids
- Omega 9 fatty acid
- Vitamin C
- B Vitamins: Folic Acid, B6, B12
Focus on Anti Inflammatory Foods

- Salmon
- Cruciferous Vegetables
- Ginger
- Tea
- Whole grains
- Nuts
- Extra virgin Olive oil
- Garlic
- Berries
- Sweet Potato
- Coconut
Avoid Inflammatory Foods

- Sugars and sweets
- Common Cooking oil
- Trans Fats
- Red meat and processed meats
- Alcohol
- Refined grains
- Pop
Lots of Vitamin C

- Vitamin C enables the arterial blood vessels to expand and contract with elasticity.
- Since most forms of heart disease are caused by constricted arteries that feed the heart muscle, arterial dilation function is exactly what vitamin C does.
Experimental studies show that Vitamin E supplementation is associated with a decrease in the risk for atherosclerosis, by protecting the LDL cholesterol from oxidation.
Omega 3 & Omega 9 Fats

- Reduces inflammation
- Increases HDL
- Decrease triglycerides
- Reduce blood clotting
B Vitamins

- Folic acid and Vitamin $B_{12}$ improves vascular endothelial function by lowering homocysteine levels.
- Data support the view that lowering homocysteine, may reduce cardiovascular risk by decreasing damages to endothelial lining.
Role of Magnesium

- Low magnesium levels set the stage for Atherosclerosis
- Helps maintain smooth muscle tone and myocardial excitability
- Vasodilator
- Anti-inflammatory
- Anti-ischemic
- Anti-arrhythmic
Prevent & Treat Cardiovascular Disease

- Control or Lose weight
- Eat clean whole foods
- Don’t Smoke
- Exercise daily
- Massage therapy
- Control blood sugar
- Regular screening
- Rest and relax and sleep
- De stress: Meditate, Yoga, Qi Gong, Tai Chi

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Any Form of Exercise
Not these exercises
OHNNHHMMMM

Effective stress buster
- Deep relaxation
- Increases your self awareness
- Experience higher energies
- Enhance your health

Feel peaceful

Have clarity and focus

Raise how powerful you are
I love Questions!