Caring for your Heart
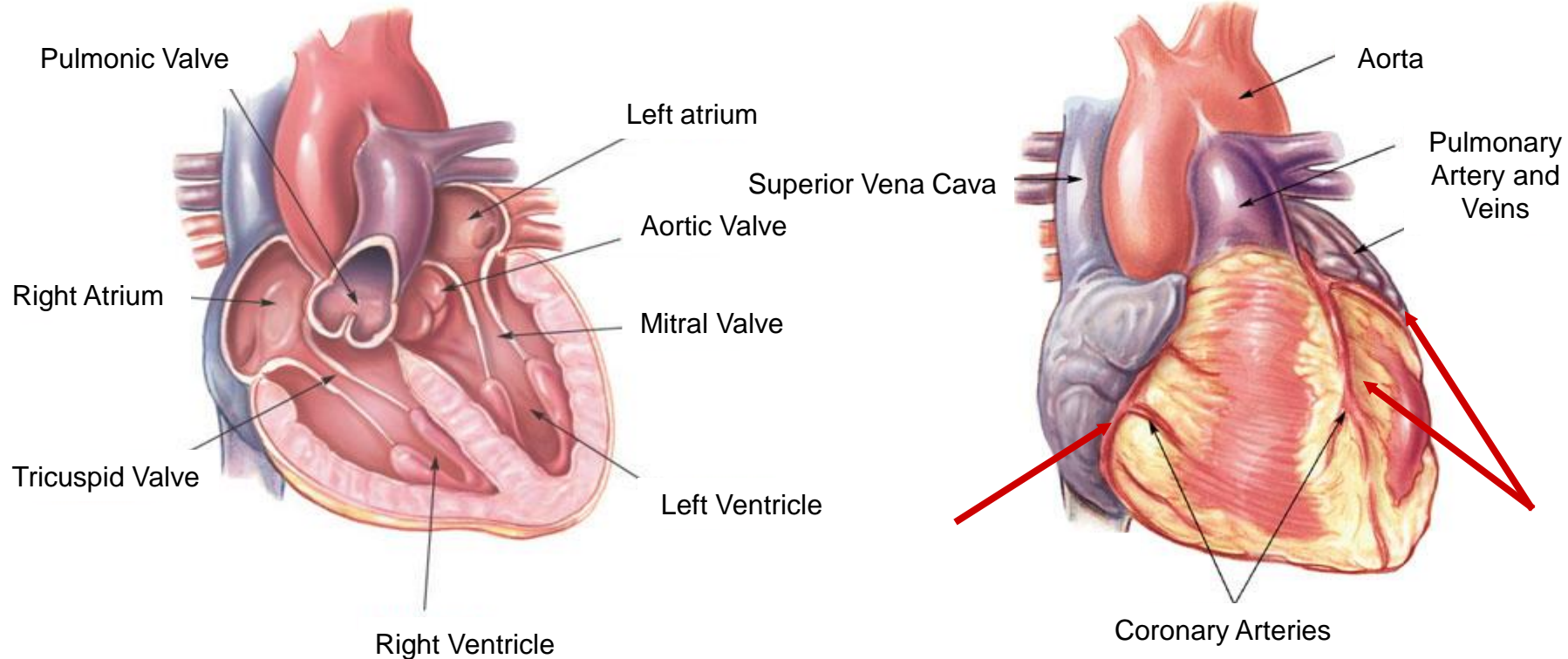
- Alycia Bennett, RN, BSN
- Maureen Tousignant, RN BSN
- Patty Ziemba, RN, BSN
- Ashley Diorio, RN, BSN
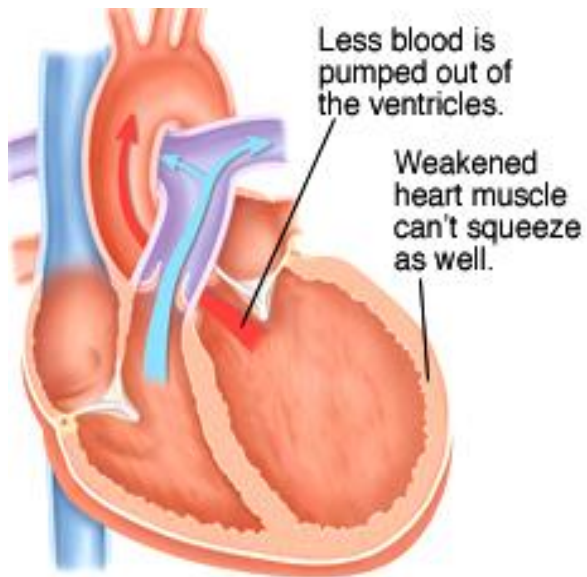
CMC
CATHOLIC MEDICAL CENTER

Structure of the Heart

Pulmonic Valve

Left atrium

Superior Vena Cava

Aortic Valve

Right Atrium

Mitral Valve

Tricuspid Valve

Left Ventricle

Right Ventricle

Aorta

Pulmonary Artery and Veins

Coronary Arteries

Coronary Arteries

Heart Failure

Less blood is pumped out of the ventricles.

Weakened heart muscle can't squeeze as well.
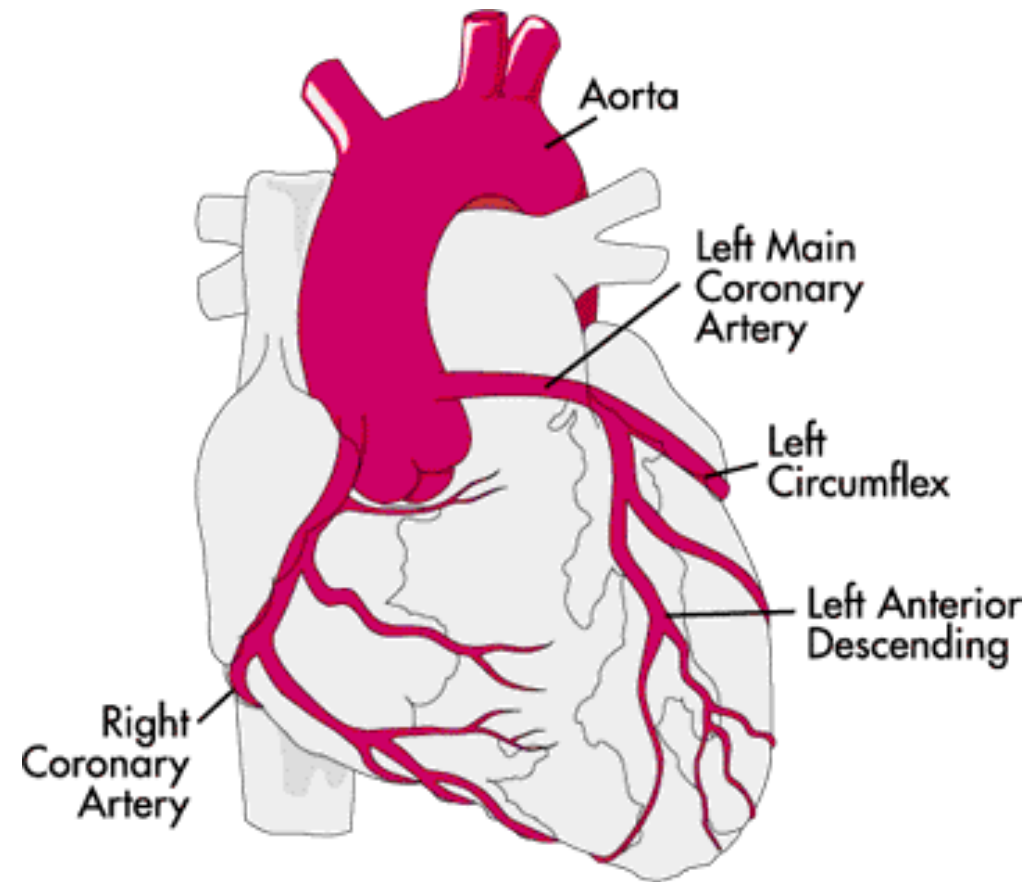
Damage to the heart muscle causes the heart to pump with less force, decreasing the amount of blood moving out of the heart

Less blood fills the ventricles.

Stiff heart muscle can't relax normally.
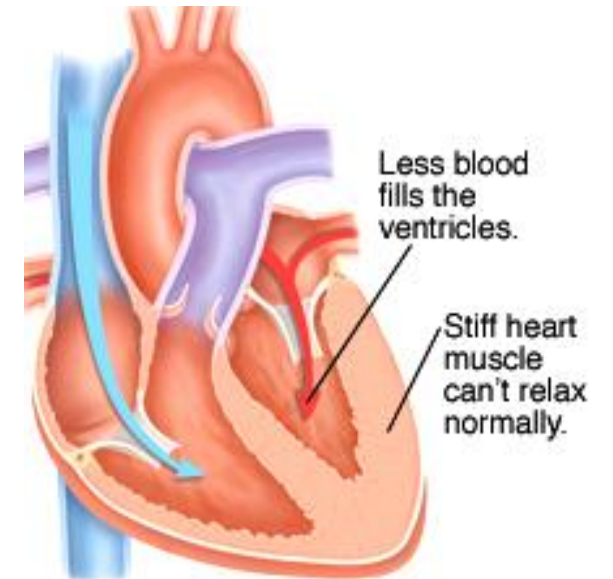
Causes of Heart Failure

Heart Failure occurs when the "pump" (heart muscle)
isn't working properly caused by:

- Coronary artery disease

- Heart attacks

- High blood pressure

- Heart muscle disease

- Heart valve disease or infection

- Heart defects from birth

- Heart damage due to alcohol, drug abuse, or medication toxicity

- Heart damage due to diabetes

- Abnormal heart rhythms
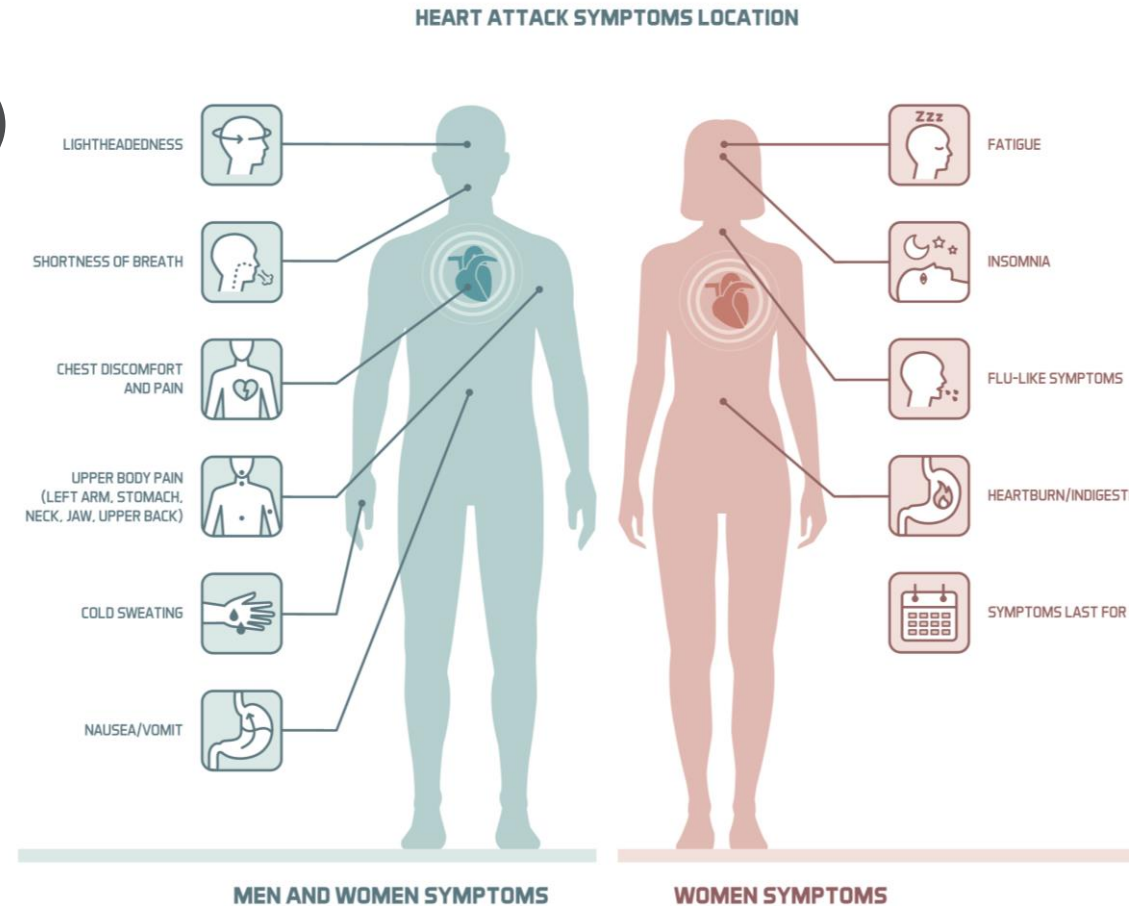
Atherosclerosis: how it begins
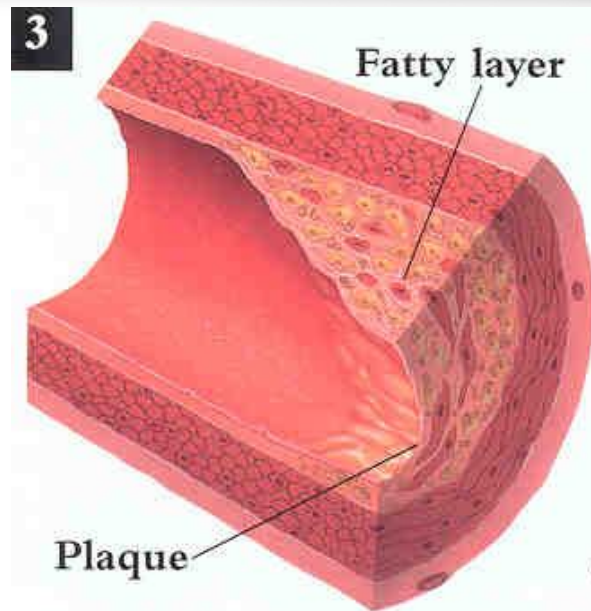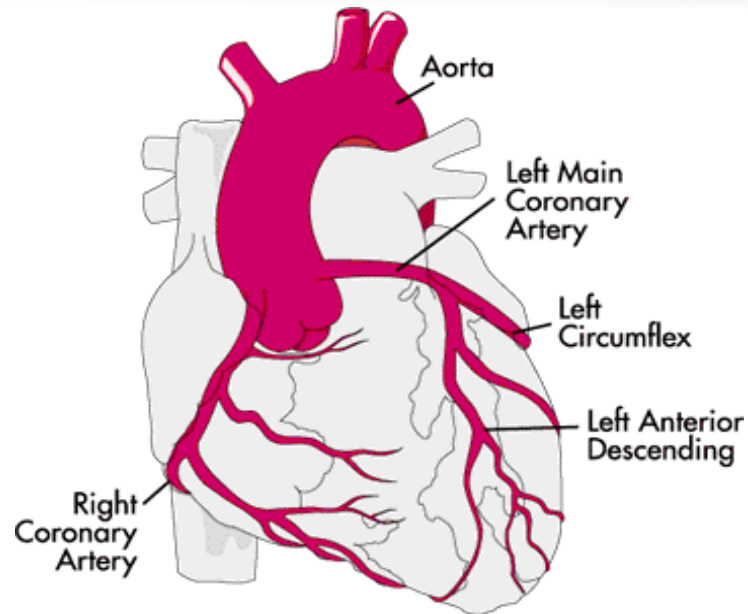
- Damage to lining (endothelium) caused by inflammation
- LDL cholesterol crosses damaged lining
- White blood cells stream in to digest LDL
- Jumble of cells become plaque which leads to reduced blood flow

Symptoms of Heart Disease

Chest discomfort (pain, pressure, tightness and/or squeezing sensation)

- Shortness of breath

- Fatigue

- Indigestion

- Nausea, Vomiting

- Dizziness, Fainting

- Sweating

HEART ATTACK SYMPTOMS LOCATION

LIGHTHEADEDNESS

SHORTNESS OF BREATH

CHEST DISCOMFORT AND PAIN

UPPER BODY PAIN (LEFT ARM, STOMACH, NECK, JAW, UPPER BACK)

COLD SWEATING

NAUSEA/VOMIT

FATIGUE

INSOMNIA

FLU-LIKE SYMPTOMS

HEARTBURN/INDIGEST

SYMPTOMS LAST FOR

MEN AND WOMEN SYMPTOMS

WOMEN SYMPTOMS

What is Angina?

- Inadequate supply of oxygen to heart muscle due to constriction of vessel or increased oxygen demand
- Does not result in damage to the muscle
- Usually relieved with rest and/or nitroglycerin–first line medicine
- Supply does NOT equal Demand!

Heart Attack

- Damage (Heart attack) occurs when muscle is deprived of blood for prolonged period of time
- Not relieved with rest or Nitroglycerin
- Requires medical attention

What to do

- Stop what you are doing/sit down
- Use Nitroglycerin under tongue
  - Up to 3 times, 5 mins apart
- Date the bottle upon opening it
- Nitroglycerin relaxes blood vessels,
  - Lowers blood pressure, reduces
  - Heart work, may relieve angina
- If no relief, Call 911 for transport to Emergency Department
- Do not drive or let anyone drive you to Emergency Department

Acute treatment of Heart Disease

- Medical treatment
  - Coronary intervention (Stent)
  - Surgical revascularization and/or valve replacement
  - Pacemaker, ICD, LVAD, heart transplant
- Medications
- Long term lifestyle management

Risk factors

Non-Modifiable
- Age
- Family History
- Gender

Modifiable
- High Blood Pressure
- Smoking
- High Blood Cholesterol
- Obesity
- Diabetes/Glucose Intolerance
- Stress
- Physical Inactivity

Hypertension

- 60 million Americans have hypertension
- Contributes to CAD & heart failure, kidney disease and stroke.
- Known as the "silent killer" because there are no symptoms.
- Blood Pressure Goal: less than 120-130/70-80
- Most important to control

Contributing factors of Hypertension

Controllable

- Excessive sodium intake
- Smoking
- Physical inactivity
- Obesity
- Stress
- Alcohol

Blood pressure medications

Common blood pressure medications include, but not limited to:

- Beta Blockers: Metoprolol, Atenolol, Bisoprolol, Carvedilol
- ACE inhibitors: Lisinopril, Enalapril, Benazepril, Ramapril
- ARBs: Losartan, Valsartan, Irbesartan
- Diuretics: lasix, Toresemide, HCTZ
- Calcium Channel Blockers: Amlodipine, Felodipine
- Vasodilators: Isosorbide

Individually determined by your medical practitioner

Smoking side effects

- Increases heart rate & blood pressure
- Oxygen replaced by carbon monoxide
- Accelerates plaque formation
- Increases platelet activity & clotting
- Depresses HDL
- 1 out of 4 heart attacks are directly related to smoking

Benefits of quitting

- 12 hrs—CO levels in blood normalize

- 2 weeks to 3 months—circulation and lung function begin to improve

- 1 yr—risk of CHD lowers 50%

- 5 yrs—risk of stroke same as nonsmoker

Strategies of quitting

- Cold Turkey
- Behavior modification courses
- Nicotine patches, gum, inhaler
- Medications: Wellbutrin, Chantix
- Acupuncture
- Hypnosis

- All forms of nicotine utilized long term can be detrimental to your health

Goal is 100% abstinence

What is Cholesterol?

- White, waxy substance produced in the liver and also found in food that we eat.

- The body needs cholesterol to make hormones, form cell membranes, and aid in digestion.

- Elevated cholesterol is a strong predictor of heart disease–we are born with an LDL of 30
-Heredity and diet contribute to increased cholesterol

- Triglycerides are fat like substances found in the blood.
-These increase with:
  - Alcohol consumption
  - Excess sugar intake
  - Increased weight
  - Lack of activity

Blood lipid profile
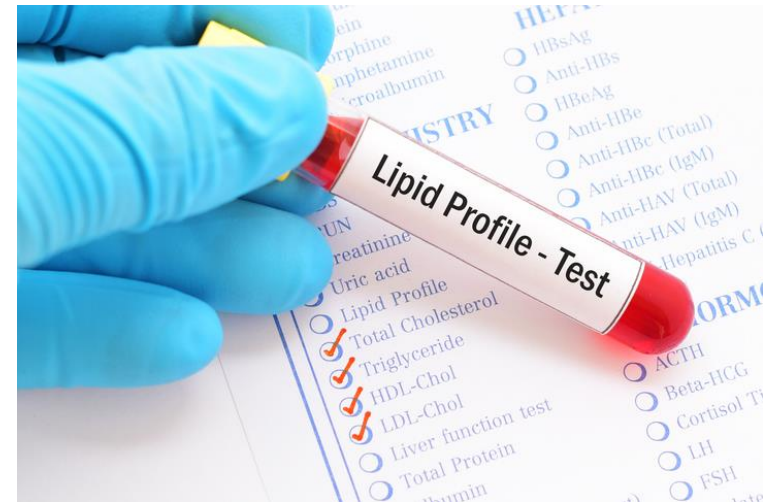
Total Cholesterol: <150

HDL   (good): at least 45 (for men)

50 (for women)

LDL   (bad): 50-70

Triglycerides: <100

(high triglycerides may be a predictor of diabetes)

12 hour fasting blood work performed 2-6 months after change in lifestyle & medication

Cholesterol lowering methods

Medications:
- Statins:
  - Atorvastatin, Rosuvastatin & others
  - Decrease inflammation & stabilize plaque
- PCSK9 inhibitors:
  - Evolcumab, Aliocumab
  - Decrease inflammation & stabilize plaque
- Selective cholesterol absorption inhibitors
  - Ezetimide
  - Blocks the cholesterol we eat.
- Resins:
  - Cholestyramine, Colestipol, Colesevelam
  - Blocks the reabsorption of cholesterol found in the bile.
- Fibric Acid derivatives:
  - Fenofibrate, Gemfibrozil
  - Lower triglycerides

Lifestyle:
- Exercise
- Healthy Diet
- Maintaining Healthy Weight

Obesity

Definition: Body Mass Index (BMI) > 30

Determined by

- Height /weight
- ideal 19-25

Associated with:

- Heart Disease
- Sleep Apnea
- Dyslipidemia
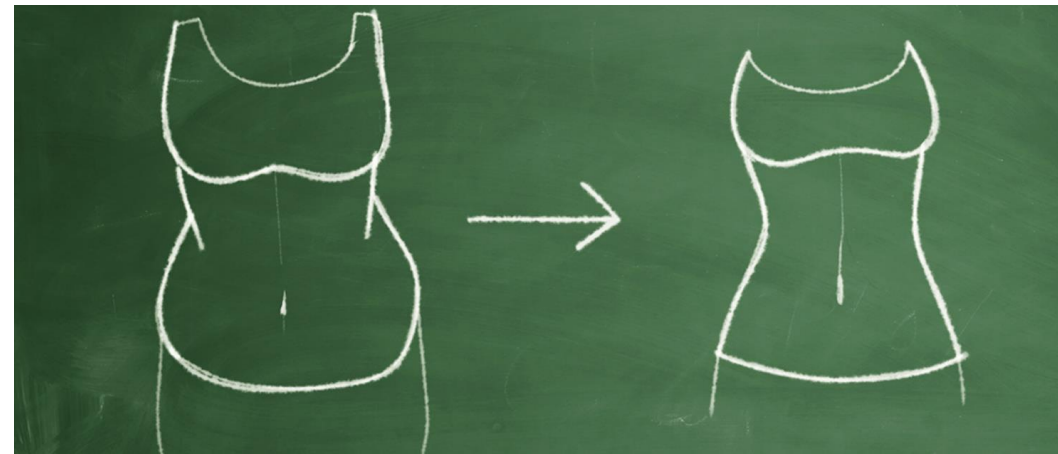- Type II Diabetes
- Cancer
- Osteoarthritis
- Hypertension

Abdominal Obesity

Goal Waist measurement
- Male <40"
- Female <35"

Belly Fat
- Increases LDL, Triglycerides, Blood Sugar
- Increases inflammation
- Increases risk for arthritis
- Increases risk for cancer

Weight management

- Diet: The most important factor in weight loss
- Healthy food choices
- Portion control
- Limit empty calories
- Regular exercise (150 minutes/week)
- 7-8 hrs of sleep

Diabetes

Type II Diabetes

- Associated with increased weight & inactivity
- Other factors include:
  - Family history
  - Age

Increases risk of:

- Heart disease
- Kidney disease
- Vascular disorders

Blood sugar goals

Blood Glucose
- Pre-meal 80-130 mg/dl
- Bed time 100-140 mg/dl

- Goal Hemoglobin A1c: <7 %

Managing Diabetes

- Monitor blood sugars
  - Keep a log
  - Monitor response to food/CHO/exercise
- Understand medications
- Control weight through healthy diet & exercise
- Work closely with healthcare team
- Consider referral for ongoing Diabetes Education

Pre-diabetes/Prevent diabetes

- Known as insulin resistance syndrome
  - Increases risk for heart disease significantly
  - Fasting Glucose 100-125mg/dl
  - A1C 5.7-6.4%
- The National Diabetes Prevention Research Study showed you can lower your risk for Type II Diabetes by 58%:
  - Losing 7% of Body Weight through healthy diet
  - Exercising 30 mins 5X /week
  - Eating 30 gm of fiber daily

Stress

- Identify your personal Stressors
- Consider readjusting priorities
- Relaxation Modalities
  - Tai Chi, Yoga
  - Meditation
  - Prayer
  - Music therapy,
  - Hobbies,
  - Recreation

- Go Fishing!!!

Physical inactivity

Most Americans do NOT get enough physical activity to prevent chronic illness

- Use large muscles (walking, biking)
- Most days of the week
- 20-60 min
- Enough to increase heart rate & breathing

Exercise is Medicine!

Summary: What can you do?

- Keep blood pressure in normal range
- Stop smoking
- Treat high cholesterol
- Control weight
- Manage diabetes
- Manage stress
- Exercise most days of the week
- Take all medications as prescribed
- Follow dietary guidelines

health, *healing* & *hope*