

Chapter 14 Noncommunicable Diseases

Lesson 1: Allergies and Asthma

Words to Know

- 😊 **noncommunicable disease-** a disease that cannot be spread from person to person
- 😊 **chronic-** present continuously on and off over a long period of time
- 😊 **allergy-** an extreme sensitivity to a substance
allergen- substances that cause allergic responses
- 😊 **pollen-** a powdery substance released by the flowers and some plants
histamines- the chemicals that the immune cells release to draw more blood and lymph to the area affected by the allergen
antihistamines- medicines that reduce the production of histamines
asthma- a chronic inflammatory disorder of the airways that causes air passages to become narrow or blocked, making breathing difficult
bronchodilators- are reliever medications that relax muscles around the air passages

Causes of Noncommunicable diseases

1. congenital (borne with): Hereditary factors cause some diseases ex. cystic fibrosis, sickle cell anemia, etc...
2. Life style factors: ex. diet, exercise, smoking, drug use, etc...
3. Enviromental factors: ex. toxic waste, air polution, exposure to carcinogens, etc... can cause disease such as asthma, emphysema, bronchitis, etc...

Common Allergens

- | | | |
|-------------|--------------------------|-----------|
| 😊 1. pollen | 😊 2. insect bites/stings | 😊 3. pets |
| 😊 4. food | 😊 5. plants | 😊 6. dust |

Common Allergic Reactions

1. Eyes: itchy, red, watery
2. Throat: swollen, irritated
3. Skin: rash, hives
4. Nose: runny, irritated, sneezing
5. Respiratory system: coughing, difficulty breathing
6. Digestive system: cramping, stomach pains, diarrhea

Managing Allergies

- 😊 1. avoid allergen
- 😊 2. take medication
- 😊 3. get injections



Common Triggers of Asthma

- 😊 1. dust, mold, pollen, pets
- 😊 2. physical activity
- 😊 3. air pollutants
- 4. colds and flu
- 5. weather changes
- 😊 6. stress

Managing Asthma

- 😊 1. monitor the condition
- 2. manage the environment
- 😊 3. manage stress
- 😊 4. take medications

Lesson 2: Heart Disease

words to know:

arteriosclerosis- a group of disorders that cause a thickening and hardening of the arteries

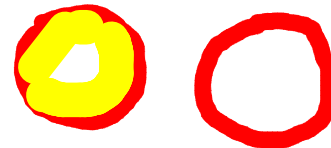
atherosclerosis- a condition that occurs when fatty substances build up on the inner linings of the arteries

heart attack- occurs when the blood supply to the heart slows or stops and the heart muscle is damaged

hypertension- a disease in which the pressure of the blood on the walls of the blood vessels stays at a level that is higher than normal

stroke- a serious condition that occurs when an artery of the brain breaks or becomes blocked

angioplasty- a surgical procedure in which an instrument with a tiny balloon, drill bit, or laser attached is inserted into a blocked artery to clear a blockage



Cardiovascular Disease Facts

- over 13 million Americans have heart disease
- causes 38% of all deaths each year
- one American dies of cardiovascular disease about every 30 seconds.
- the number of deaths have more than doubled in the last 80 years

Types of cardiovascular disease

1. Arterial disease: is the slowing or stopping of blood flow in the arteries
 - Coronary artery disease: is the slowing or stopping of blood to the heart muscle
 - Atherosclerosis: is a buildup of cholesterol and fat on inner lining of the artery walls.
 - Arteriosclerosis: is the hardening and thickening of the artery wall (the wall becomes inflexible)

2. Heart attack (myocardial infarction)

- The heart muscle does not get enough oxygen and begins to die



- Symptoms include:

- chest pain/pressure, pain in arms, jaw, back, or abdomen

- Men: cold skin, shortness of breath, vomit, pass out

- Women: back and jaw pain

3. Stroke

- The brain does not receive an adequate supply of blood

- Approximately 500,000 people are effected each year; 165,000 die

- Causes:

- 😊 -blood clots

- cerebral hemorrhage (bleeding in the brain)

- 😊 -atherosclerosis

- 😊 -aneurysm

- Affects of stroke

- paralyzes, trouble speaking, understanding speech, impaired memory difficulty writing and/or reading.

4. Hypertension (high blood pressure)

-Blood pressure: refers to the force of the blood against the walls of the arteries.

-Causes:

-constriction of arteries

-thickening of the artery walls

-lengthening of the vascular system

-life style factors (stress, diet, exercise, smoking)

-Normal BP 120/80mmhg

-High BP 130/80mmhg

Factors that lead to cardiovascular disease

Uncontrollable factors:




😊 1. Age (35-55)

😊 2. Race (Africans, Hispanics, Caucasians{whites}, Asians)

😊 3. Heredity

😊 4. Sex (male)

Controllable factors:

- 
1. Cholesterol/triglycerides (blood fats)
Three types of cholesterol
 - A. HDL -high density lipoproteins (Healthy lipoproteins) help break down bad cholesterol
 - B. VHDL -very high density lipoproteins (very healthy lipoproteins) lowers the risk of heart attack
 - C. LDL -low density lipoproteins (lousy lipoproteins) causes a buildup in the arteries
 - Triglycerides -The most common form of blood fat. It causes more LDLs to be created.
 2. Tobacco products: Causes an increase in blood pressure, leading to atherosclerosis and arteriosclerosis.
 3. Hypertension: increases cholesterol and fat buildup in the arteries
 4. Diabetes: increases the level of fat in the blood
 5. Lack of aerobic exercise: causes fat and cholesterol buildup in the arteries
 6. Overweight/over nutrition: causes stress on the cardiovascular system

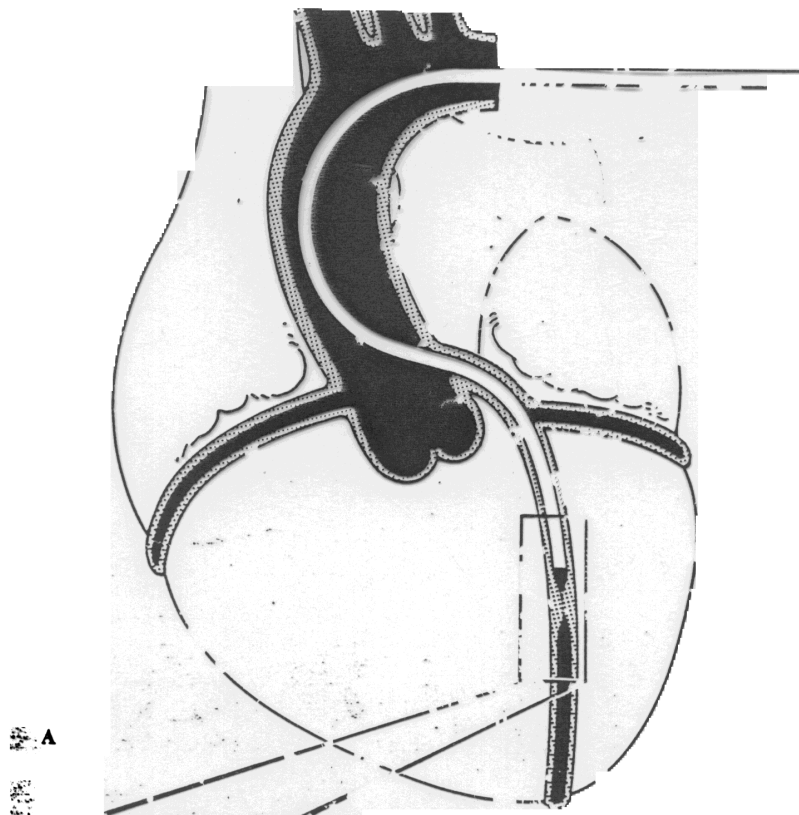
Preventing Heart Disease

- 😊 1. eat healthful foods
- 2. limit saturated fats, cholesterol, trans fats
- 😊 3. exercise
- 4. maintain a healthy weight
- 😊 5. manage stress
- 😊 6. avoid tobacco
- 7. avoid alcohol and other drugs

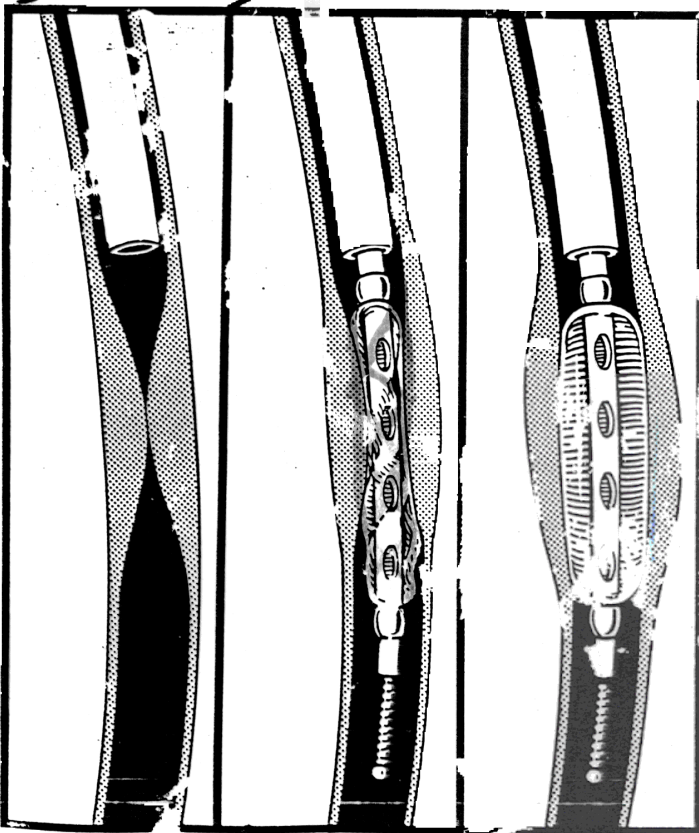
1st 60 mins (Golden Hour)

Treating Heart Disease

- 1. angioplasty: a surgical procedure in which an instrument clears a blockage in an artery
- 😊 2. medications (TPA): used to break up blood clots
- 3. pacemakers: an implanted device that controls the heart beat
- 4. internal defibrillator: an implanted device that restarts a stopped heart
- 5. bypass surgery: creates a detour around a blockage in a coronary artery
- 😊 6. heart transplant: used to replace a damaged heart



A



B

C

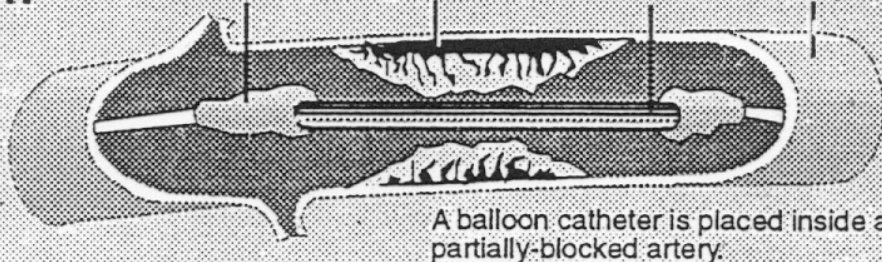
FIGURE 13-34. Principle of Coronary Angioplasty.

A, Overview illustrating positioning of guide catheter and balloon catheter within narrowed coronary artery. **B,** Details of catheter placement. Guide catheter positioned at site of narrowing. **C,** Balloon catheter passed through guide catheter and positioned within narrowed segment of artery. **D,** Balloon inflated, crushing plaque and relieving obstruction.

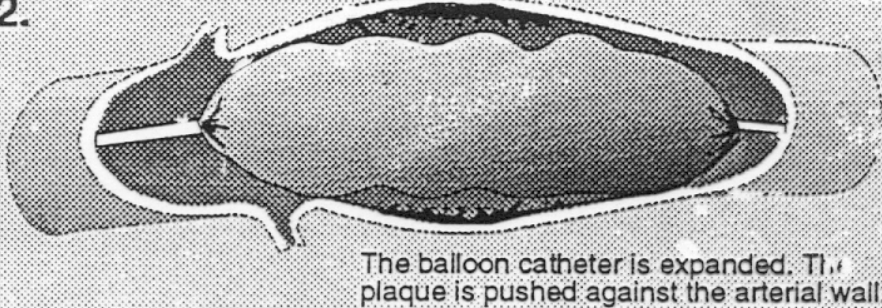
Angioplasty

Stopping heart attacks through angioplasty appears to save more lives than the lending therapy which consists of injecting clot-dissolving drugs.

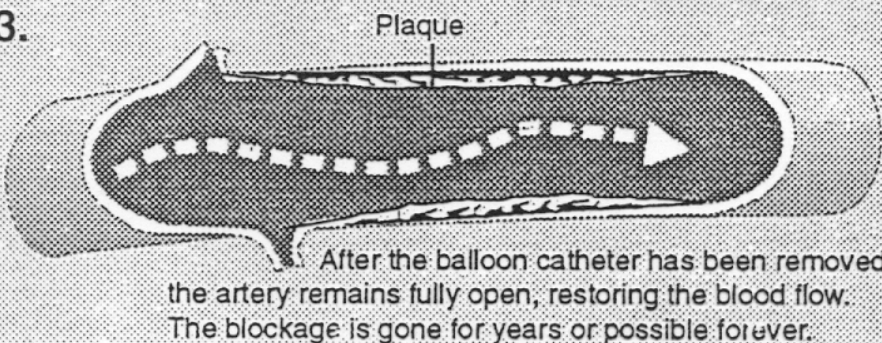
1. Balloon Catheter Plaque Balloon deflated Artery



- 2.

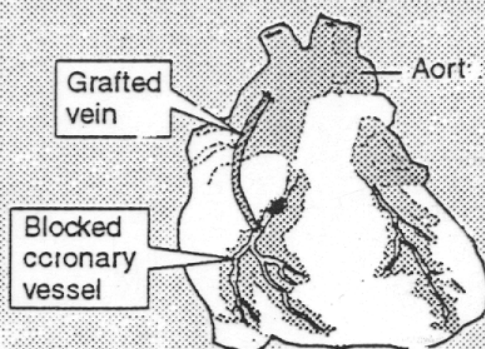


- 3.



Coronary artery bypass

Blocked coronary arteries, which carry blood to the heart from the aorta, are bypassed by using a graft of a vein from the patient's leg.



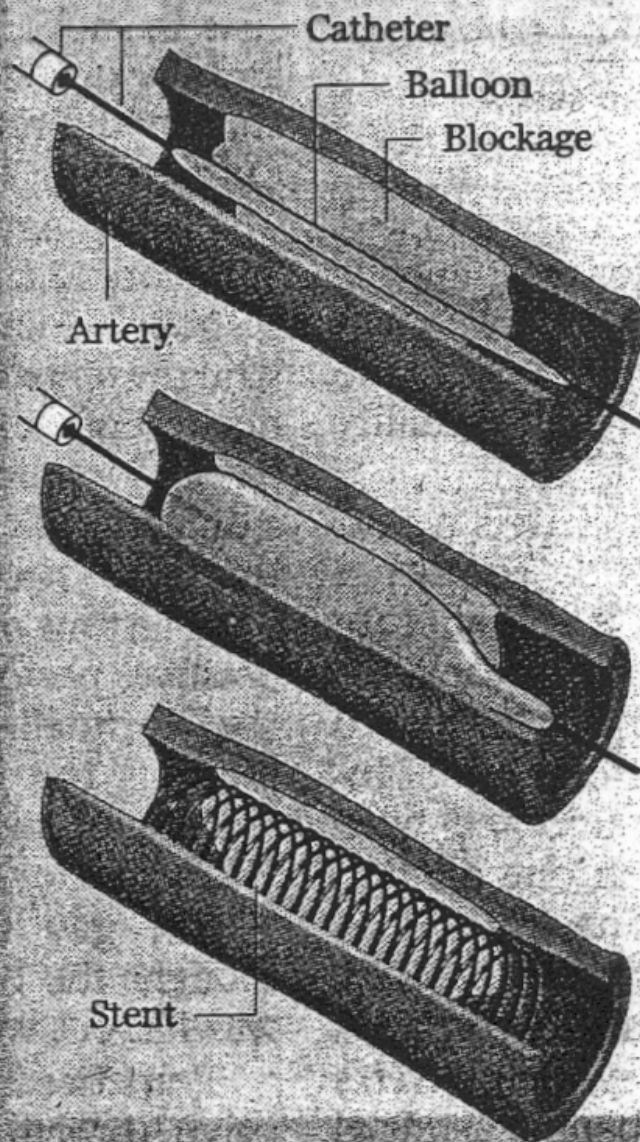
Sources: Dr. Mathew Holland, JAMA

AP/Wm. J. Castell, Tom Holmes

Repairing blocked arteries

Angioplasty is the usual treatment for the nearly 1 million heart attacks that occur in the U.S. each year. One-third of the victims do not seek care within 12 hours, when angioplasty is the most effective.

Drawing is schematic



Angioplasty

A catheter is guided through blood vessels to a clogged artery and placed across the blockage

A balloon on the catheter is inflated, opening the artery

Sometimes, a wire mesh tube - called a stent - is placed to prop the artery open

Source: American Heart Association

Associated Press





Lesson 3: Cancer

Words to Know

- 😊 **cancer-** a disease that occurs when abnormal cells multiply out of control
- 😊 **tumor-** a group of abnormal cells that form a mass
- 😊 **benign-** not cancerous, and do not spread
- 😊 **malignant-** cancerous and can spread
- metastasis-** the spreading of cancer from one area to another
- risk factor-** characteristics or behaviors that increase the likelihood of developing a medical disorder or disease
- carcinogen-** a substance that can cause cancer
- biopsy-** the removal of a sample of tissue from a person for examination
- radiation therapy-** uses X-rays or other forms of radiation to kill cancer cells
- 😊 **chemotherapy-** the use of powerful medicines to destroy cancer cells

<http://www.brainpop.com/health/diseasesinjuriesandconditions/cancer/>

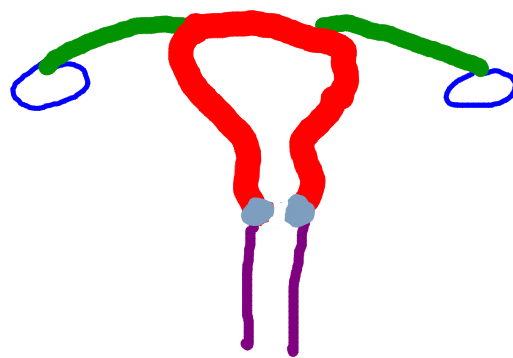
- Cancer is a collective term for over 100 different diseases.
- Cancer is the second most common killer in America.
- It attacks middle-age and older people.
- More men than women die from cancer each year, but more women get cancer than men.

Types of tumors:

- 😊 Benign tumor: is not cancerous and does not spread. It is a mass of abnormal cells enclosed in a covering.
- 😊 Malignant tumor: Is cancerous and can spread to other parts of the body

Types of cancer

1. Carcinoma: is cancer of the skin like tissues, including the skin, respiratory system and digestive system.
- 😊 2. Sarcoma: is cancer of the bones, muscles, or cartilage.
- 😊 3. Leukemia: is cancer of the blood forming organs
- 😊 4. Lymphoma: is cancer of the immune system (lymph nodes)
5. Cancer of the reproductive organs:
 - Women -cervical, ovarian, uterine cancer
 - Men -testicular cancer
6. Breast cancer: 1% of all victims are male.
7. Lung cancer



Causes of cancer

1. Tobacco products
- 😊 2. Ultraviolet rays from the sun
- 😊 3. Certain types of radiation
4. Certain minerals and chemicals used in construction and manufacturing
5. Air and water pollution
- 😊 6. A diet high in fat and low in fiber

Ways to avoid cancer:

- 😊 1. Avoid tobacco
2. Eat healthy foods (high fiber, low fat, rich in vitamins A+C)
3. Limit exposure to the sun
- 😊 4. Perform self-examinations
5. Know the seven warning signs of cancer
- 😊 6. Exercise

<http://www.brainpop.com/health/personalhealth/sunprotection/>



Seven warning signs of cancer

- 😊 1. **C**hange in bowel or bladder habits
- 😊 2. **A** sore that does not heal
- 😊 3. **U**nusual bleeding or discharge
- 😊 4. **T**hickening or lump in breast or elsewhere
- 😊 5. **I**ndigestion or difficulty in swallowing
- 😊 6. **O**bvious change in wart or mole
- 😊 7. **N**agging cough or hoarseness

Ways to treat cancer

- 😊 1. Surgery: cut out the cancer cells
- 😊 2. Radiation treatments: use x-ray radiation to kill cancer cells.
- 😊 3. Chemotherapy: uses medication to kill the cancer cells
- 4. Immunotherapy: uses medication to strengthen the immune system
- 5. Genetic engineering: changes the function of certain white blood cells to target the cancer cells
- 6. Combination therapy: uses radiation and chemotherapy to shrink the cancer and surgery to cut it out.

Check your ABCDs

- A-asymmetry: one side of a mole looks different from the other
- B-border irregularity: the edges are jagged or blurred
- C-color: the color is not uniform
- D-diameter: the diameter is greater than 6 mm



Skin Cancer

The most important risk factor is exposure to the sun.

Lung Cancer

Cigarette smoking is clearly the biggest risk factor in the development of lung cancer. Nearly 90 percent of lung cancer cases in men and 79 percent in women are related to smoking.

Cancer of the Reproductive Organs

The risk factors are varied but include age, family history of cancer, obesity, and cigarette smoking.

Breast Cancer

Age is a risk factor for breast cancer. It is more commonly found in women over 50 years old, but it also occurs in younger women and men. A family history of breast cancer is another risk factor.

Colon/Rectal Cancer

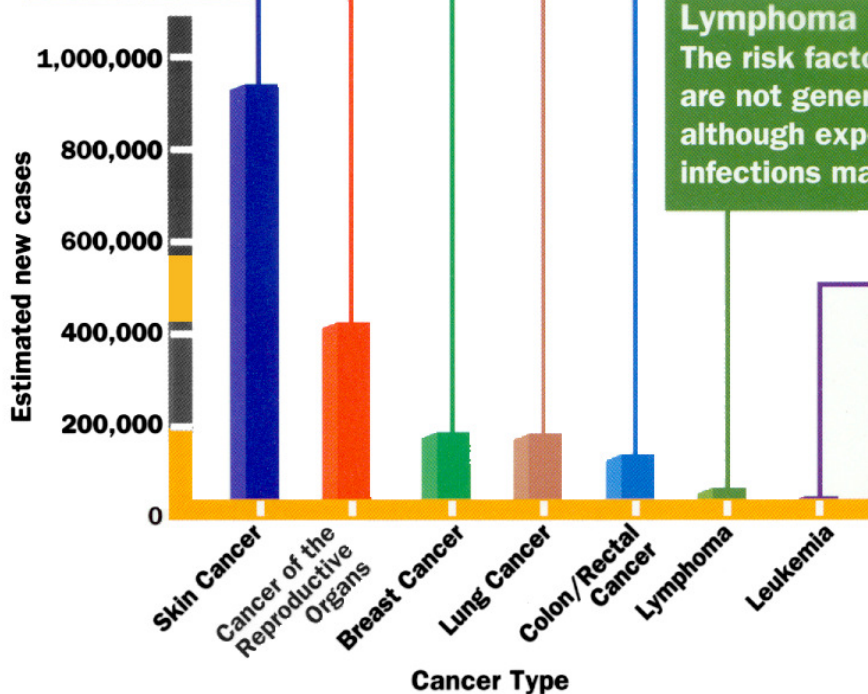
Risk factors include a high-fat, low-fiber diet and lack of exercise.

Lymphoma

The risk factors for lymphoma are not generally known, although exposure to certain infections may play a part.

Leukemia

The risk factors for leukemia are not generally known, although links have been drawn to exposure to certain types of radiation and to certain chemicals.





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<http://www.brainpop.com/health/diseasesinjuriesandconditions/allergies/>

<http://www.brainpop.com/health/diseasesinjuriesandconditions/asthma/>

Lesson 4: Diabetes and Arthritis

Words to know:

😊 **diabetes-** a disease that prevents the body from converting food into energy

insulin- a protein made in the pancreas that regulates the level of glucose in the blood

😊 **arthritis-** a disease of the joints marked by painful swelling and stiffness

osteoarthritis- a chronic disease that is common in older adults and results from a breakdown in cartilage in the joints

rheumatoid arthritis- a chronic disease characterized by pain, inflammation, swelling, and stiffness of the joints

<http://www.brainpop.com/health/diseasesinjuriesandconditions/juvenilerheumatoidarthritis/>

<http://www.brainpop.com/health/diseasesinjuriesandconditions/diabetes/>

****Arthritis:** is a disease of the joints marked by painful swelling and stiffness.

Types of arthritis

1. Rheumatoid arthritis: is a chronic disease characterized by pain, inflammation, swelling, and stiffness of the joints.
2. Osteoarthritis: is a chronic disease, common in elderly people. That results from the breakdown of cartilage in the joints.
3. Juvenile Rheumatoid Arthritis (JRA): diagnosed at 6 mos. to 16 years of age. Symptoms include swelling and pain at the joints, redness and warm to the touch.

How to cope with and treat arthritis

- 😊 1. Medication 😊 2. Painkillers 😊 3. Diet
😊 4. Exercise 😊 5. Rest 😊 6. Heat/cold treatments

****Diabetes:** is a disease that prevents the body from converting food into energy.

Types of diabetes:

1. Type I: (insulin dependant diabetes) 5-10% of the cases
-This type of diabetes usually is diagnosed during childhood or adolescence. Sufferers must take daily insulin injections.

2. Type II (non-insulin dependant diabetes) 90-95% of the cases

-This type of diabetes usually develops in people over age 40 who are over weight.

3. Gestational Diabetes: found in pregnant women and is similar to Type II Diabetes.

Signs/symptoms of diabetes:

- | | |
|-------------------------------|--------------------------------|
| 1. Excessive urine production | 2. Excessive thirst and hunger |
| 3. Unexplained weight loss | ☺ 4. Shortness of breath |
| ☺ 5. Blurred vision | ☺ 6. Dry, itchy skin |
| ☺ 7. Lack of energy | |

Ways to treat diabetes:

- | | |
|----------------------|-------------------------|
| ☺ 1. Diet | ☺ 2. Oral medication |
| 3. Medical care | ☺ 4. Insulin injections |
| 5. Weight management | |

<http://www.brainpop.com/health/diseasesinjuriesandconditions/alzheimersdisease/>

**Alzheimer's disease: is an illness that attacks the brain and affects thinking, memory, and behavior.

Symptoms:

1. Memory loss and mental confusion
2. Personality changes and mood swings
3. Altered speech





