

# Communicable & Noncommunicable Diseases



# Chapter 23

## Pathogen Song

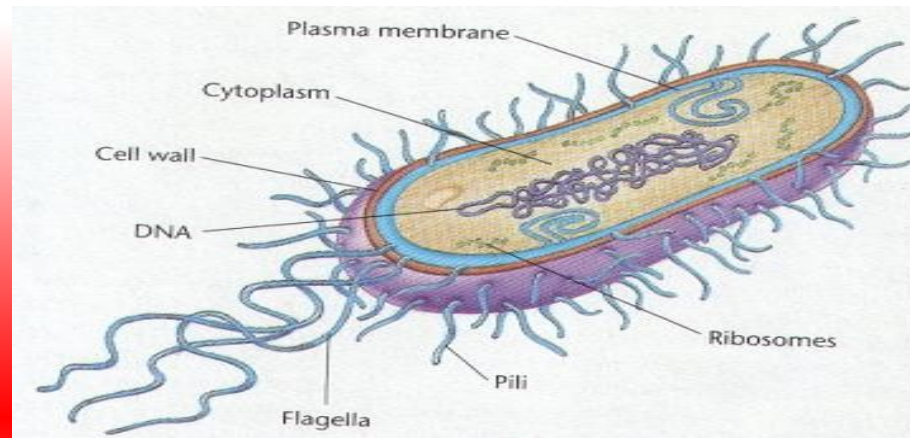
A. Communicable Disease- spread from one living organism to another or through the environment

1. Pathogen- a microorganism that is capable of producing disease



illustration: Don Smith

- a. bacteria- single celled organisms that are neither plants nor animals



- b. virus- the smallest pathogen; a piece of genetic material surrounded by a protein coat

- c. fungi- plantlike organisms that can cause diseases; Athletes foot and ringworm



- d. parasite- lives on or in another organism, known as the host; pubic lice or head lice

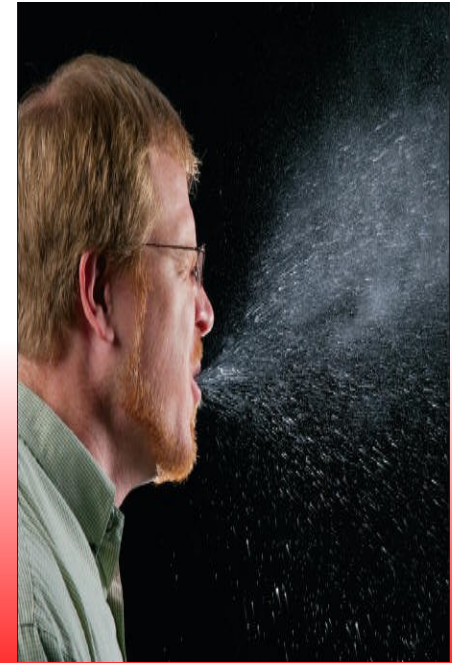


- e. protozoa- a simple one-celled organism that can cause infection; often live in water



## 2. How Diseases Spread

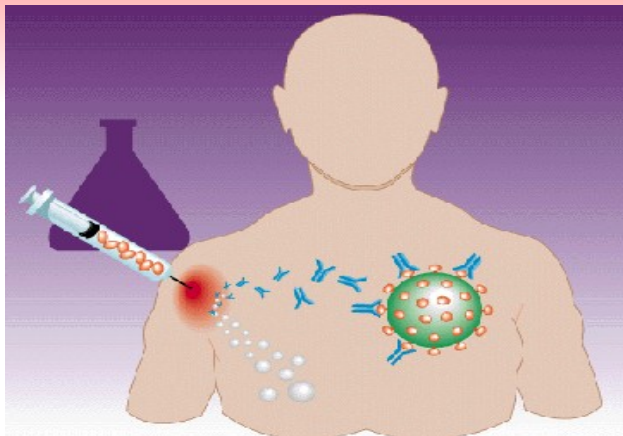
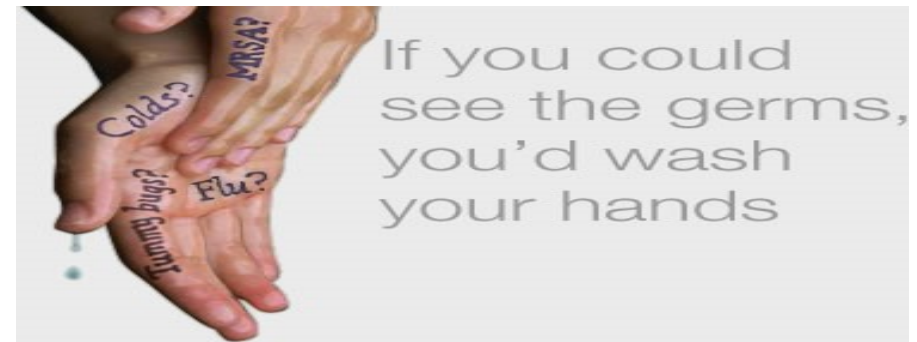
- a. direct contact- person to person
- b. puncture wounds- tetanus
- c. childbirth
- d. infected animals
- e. contaminated objects
- f. vectors- an organism that carries pathogens to others,  
such as flies, mosquitoes, & ticks
- g. food and water
- h. airborne transmission





### 3. Taking Precautions

- a. wash your hands
- b. protect yourself from vectors
- c. don't share
- d. cover your mouth
- e. abstain from sexual contact
- f. stay fit
- g. avoid all drugs
- h. vaccine- a preparation of dead or weakened pathogen injected into the body



#### 4. Communicable diseases caused by bacteria

#### Bacterial Meningitis

a. strep throat- can lead to heart damage if left untreated

b. meningitis- bacterial or viral

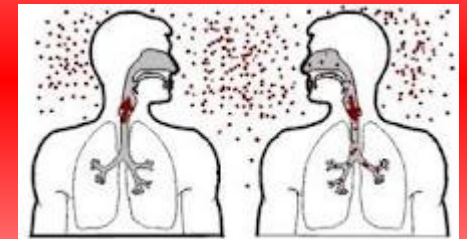
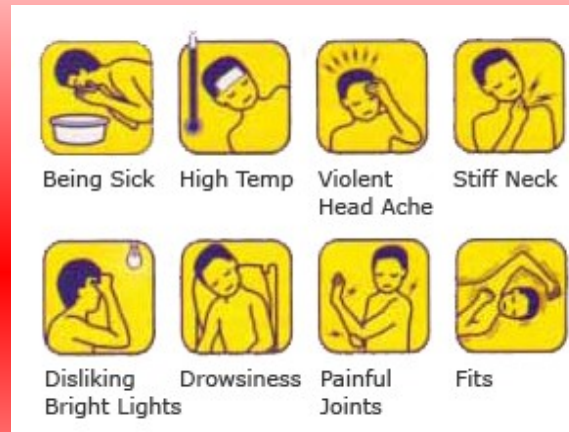
c. tetanus- lockjaw

d. conjunctivitis (pinkeye)

e. Lyme disease

f. pneumonia- bacterial or viral

g. most bacterial diseases are treated with antibiotics





## 5. Communicable diseases caused by a virus

### Virus Crisis

a. common cold- no vaccine available

b. influenza (flu)- has a vaccine

c. hepatitis- inflammation of the liver; most common types are A, B, C;  
vaccine available for types A & B

d. mononucleosis- no vaccine available

e. measles- has a vaccine

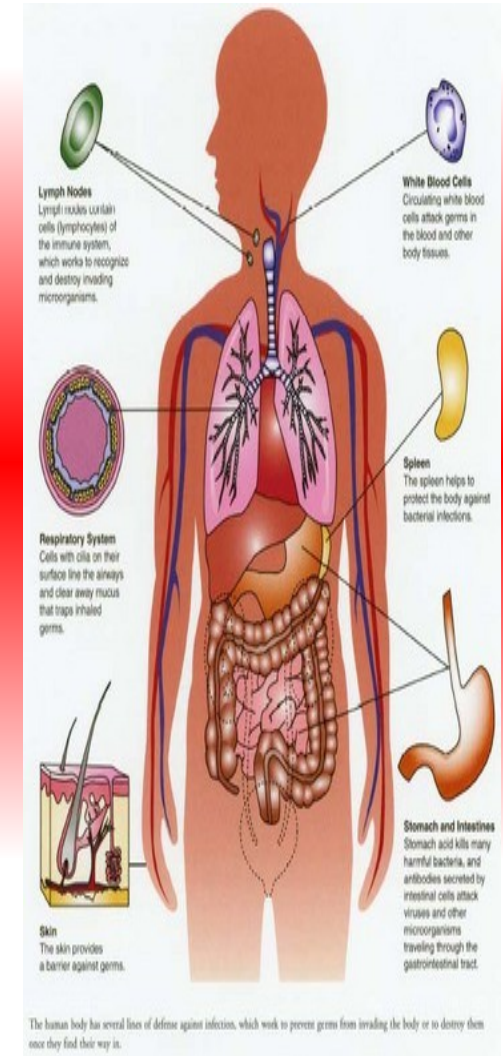
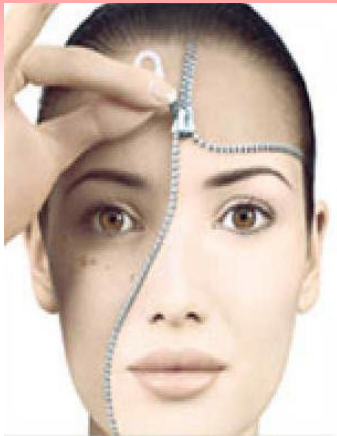
f. chicken pox- has a vaccine



## 6. Fighting communicable diseases

a. physical barriers- skin, mucous membranes, cilia

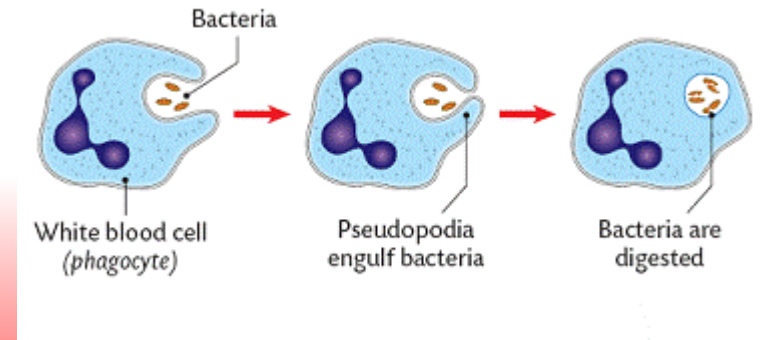
b. chemical barriers- tears, saliva, gastric juices



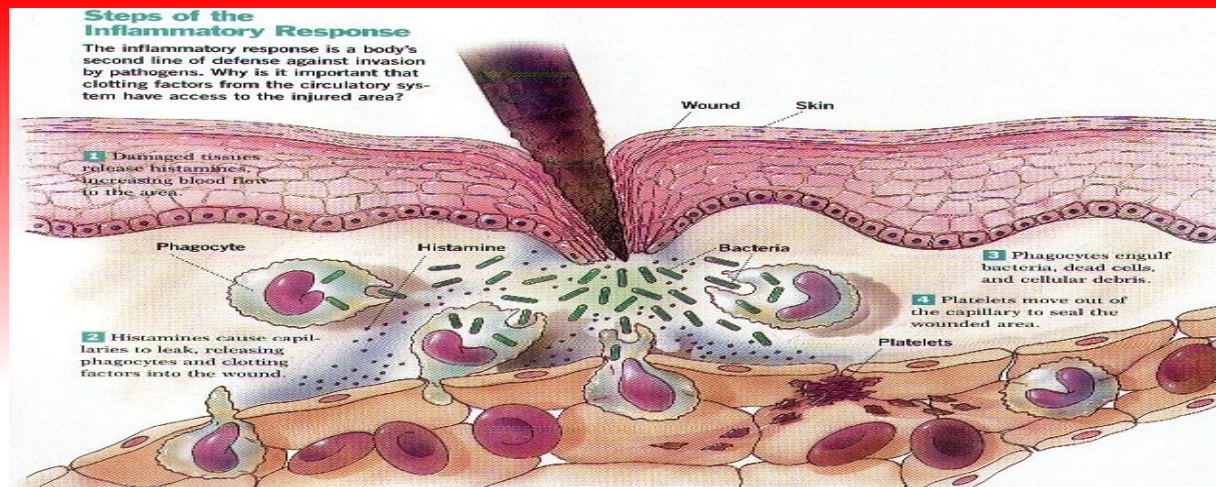
c. the immune system- your best ally in the fight against communicable diseases

## Immune System

### Immune System Animation



1. inflammatory response- a reaction to injury or infection that causes redness and swelling



2. immune response- a defense response to certain pathogens; this produces immunity- the state of being protected against a disease

7. Emerging Infections- those that have increased or threaten to increase in the future

a. Avian influenza- caused by a virus that occurs in birds

b. H1N1 virus- respiratory virus normally found in pigs

c. Salmonella & E. coli- bacteria that sometimes live in animals' intestinal tracts; spread by contaminated food

d. Mad Cow Disease- also called bovine spongiform encephalopathy; caused by prions which eat away at the brain



# Chapter 25

B. Noncommunicable diseases- not transmitted by another person, vector, or the environment

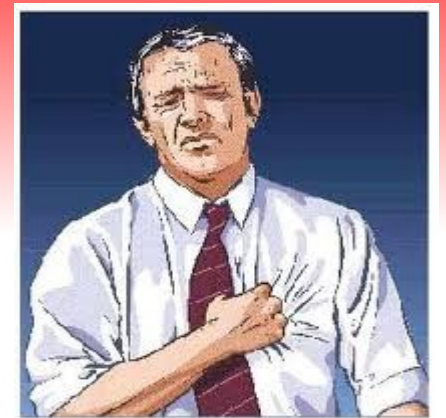
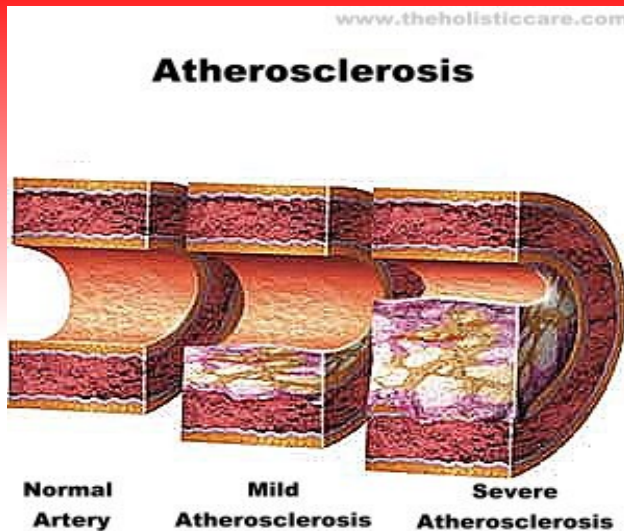
1. Cardiovascular disease (CVD)- affects the heart or blood vessels

a. hypertension- high blood pressure; called a “silent killer.”

Hypertension

b. atherosclerosis- disease characterized by accumulation of fatty substances called plaques on artery walls

Atherosclerosis



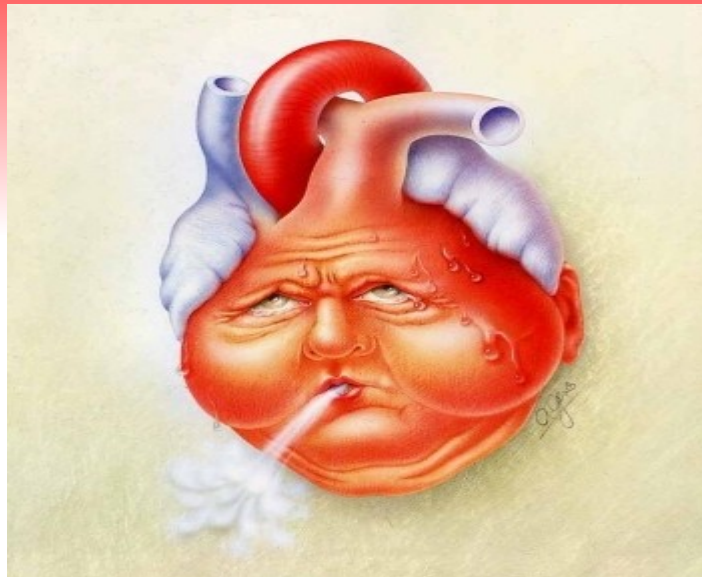
c. angina pectoris- chest pain resulting from insufficient oxygen

- d. arrhythmia- irregular heartbeats where heart may skip a beat or beat very fast or very slowly
- e. heart attack- a reduced or blocked blood supply causes heart damage

Heart Attack Grill



- f. congestive heart failure- when the heart gradually weakens and can no longer maintain its pumping rate or force

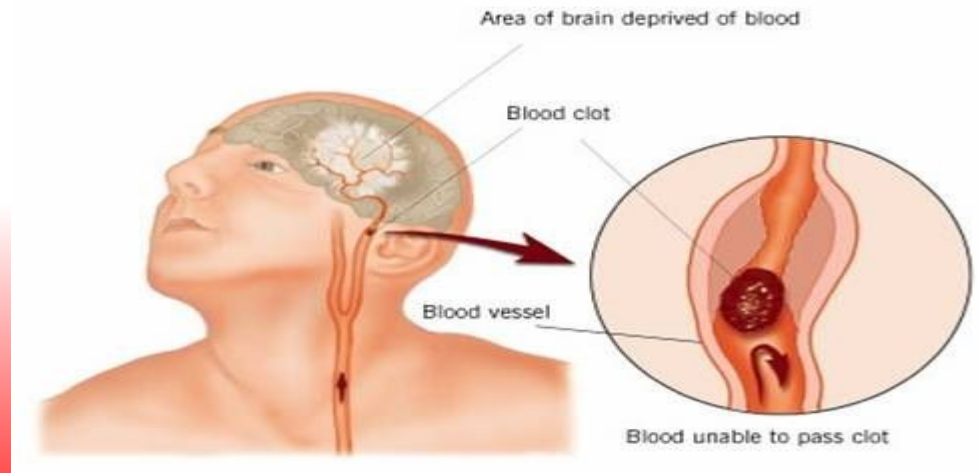


Congestive Heart Failure



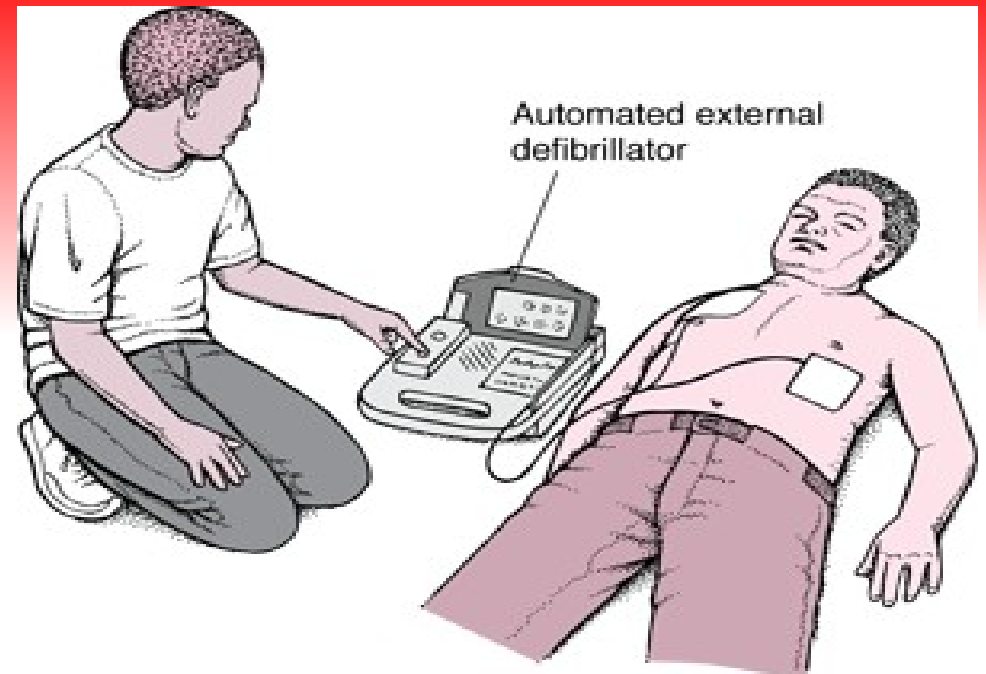
g. stroke- an acute injury in which blood flow to the brain is interrupted

## Stroke



h. cardiac arrest- heart stops beating in a rhythmic way due to an electrical problem

## Cardiac Arrest



## 2. Controllable risk factors for cardiovascular disease

a. tobacco use



b. high cholesterol



c. physical inactivity



d. excess weight



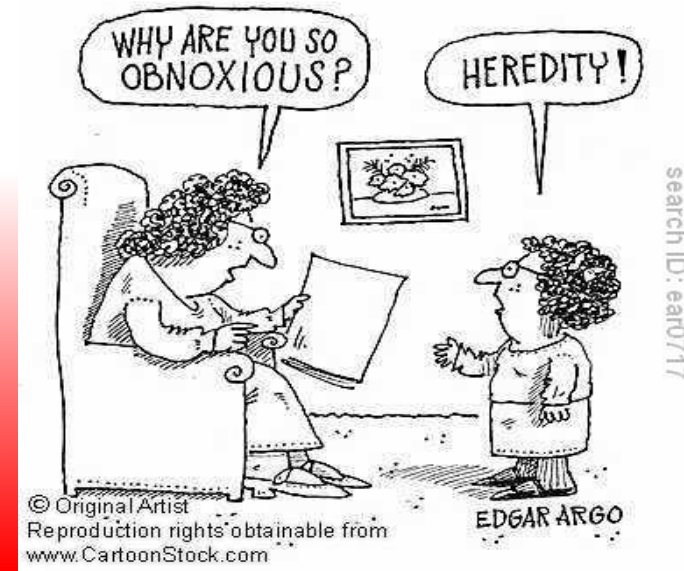
e. stress



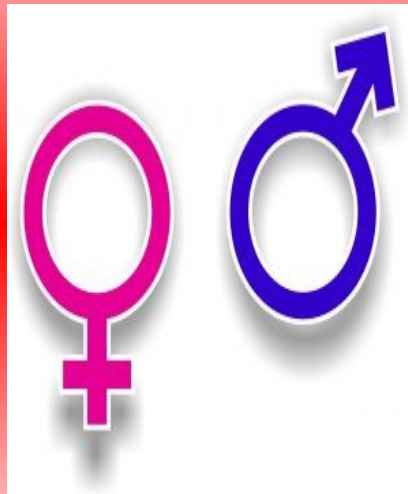
f. alcohol/other drug use

### 3. Uncontrollable risk factors for cardiovascular disease

a. heredity



b. gender



c. age

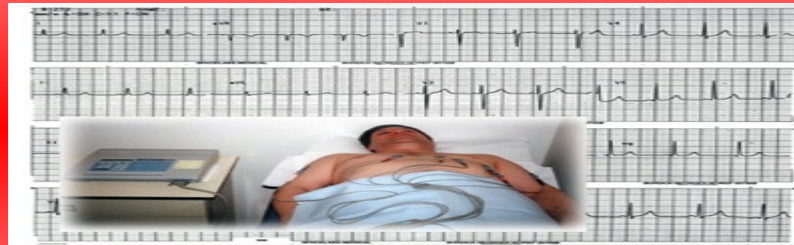


## 4. Tools used to detect cardiovascular disease

a. blood pressure checks- sphygmomanometer



b. electrocardiogram- called ECG or EKG



c. MRI



d. angiography

e. CT scan

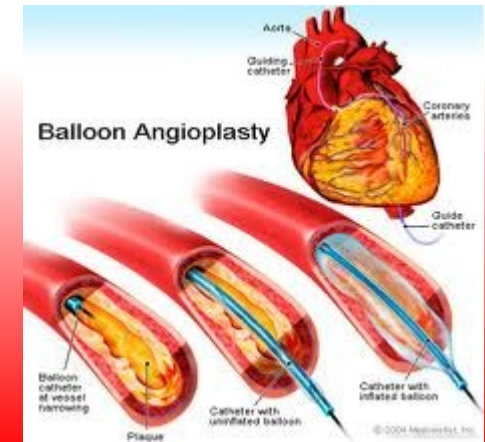


## 5. Treating cardiovascular disease

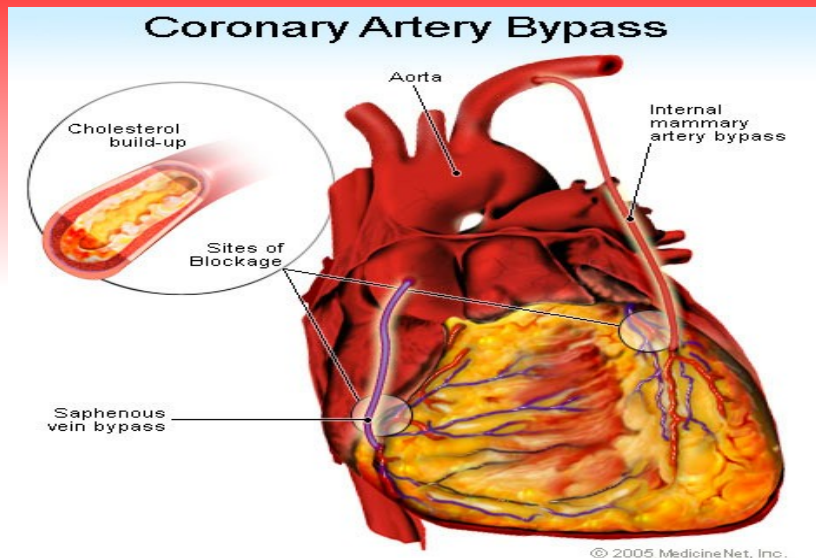
a. laser intervention- laser inserted to vaporize blockage

b. angioplasty- balloon and stent

### Angioplasty



c. coronary bypass- creates detours around blocked artery

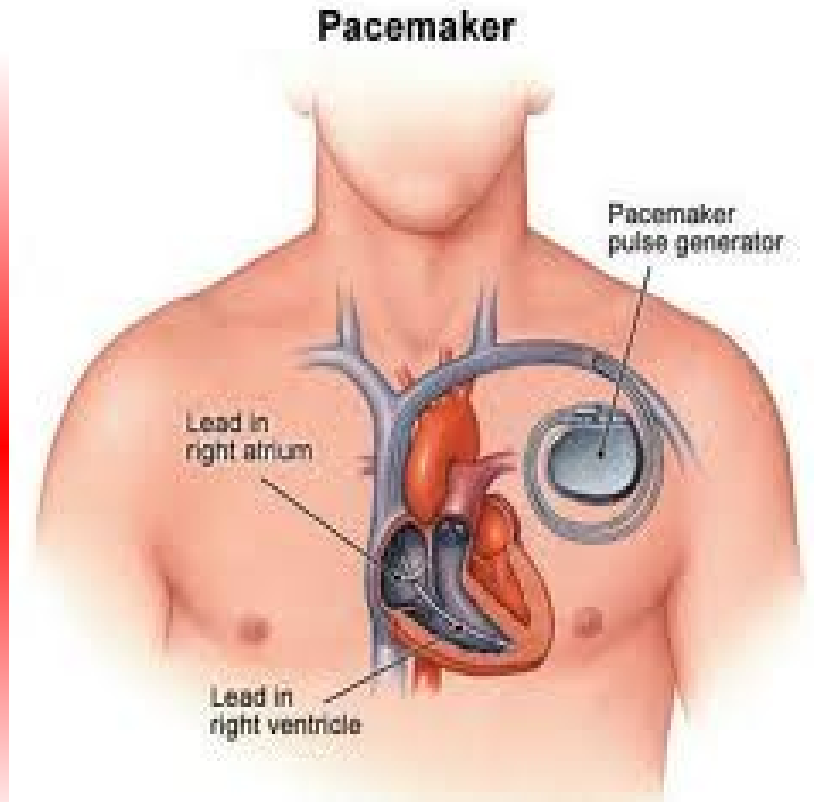


Chest Opening

Bypass Surgery



d. pacemaker- sends electrical impulses to the heart



e. transplant- from a donor or artificial heart; artificial hearts are not a permanent fix

Artificial Heart Transplant



## 6. Cancer- uncontrollable growth of abnormal cells

a. the #2 cause of death in the U.S.A.

Challenge Cancer



# Types of Cancer

**\*\*Do Not Copy\*\***

<b><u>Name</u></b>	<b><u>Number of Cases</u></b>	<b><u>Number of Deaths</u></b>
Skin	One million	8500
Breast	267,000	40,000
Prostate	230,090	29,000
Lung	173,770	150,000
Colon/Rectum	146,940	53,000
Mouth	30,000	8000
Cervix	11,000	4000
Testicle	7,000	400

- b. Tumor- abnormal mass of tissue with no natural role
  - 1. benign- a tumor that is not cancerous



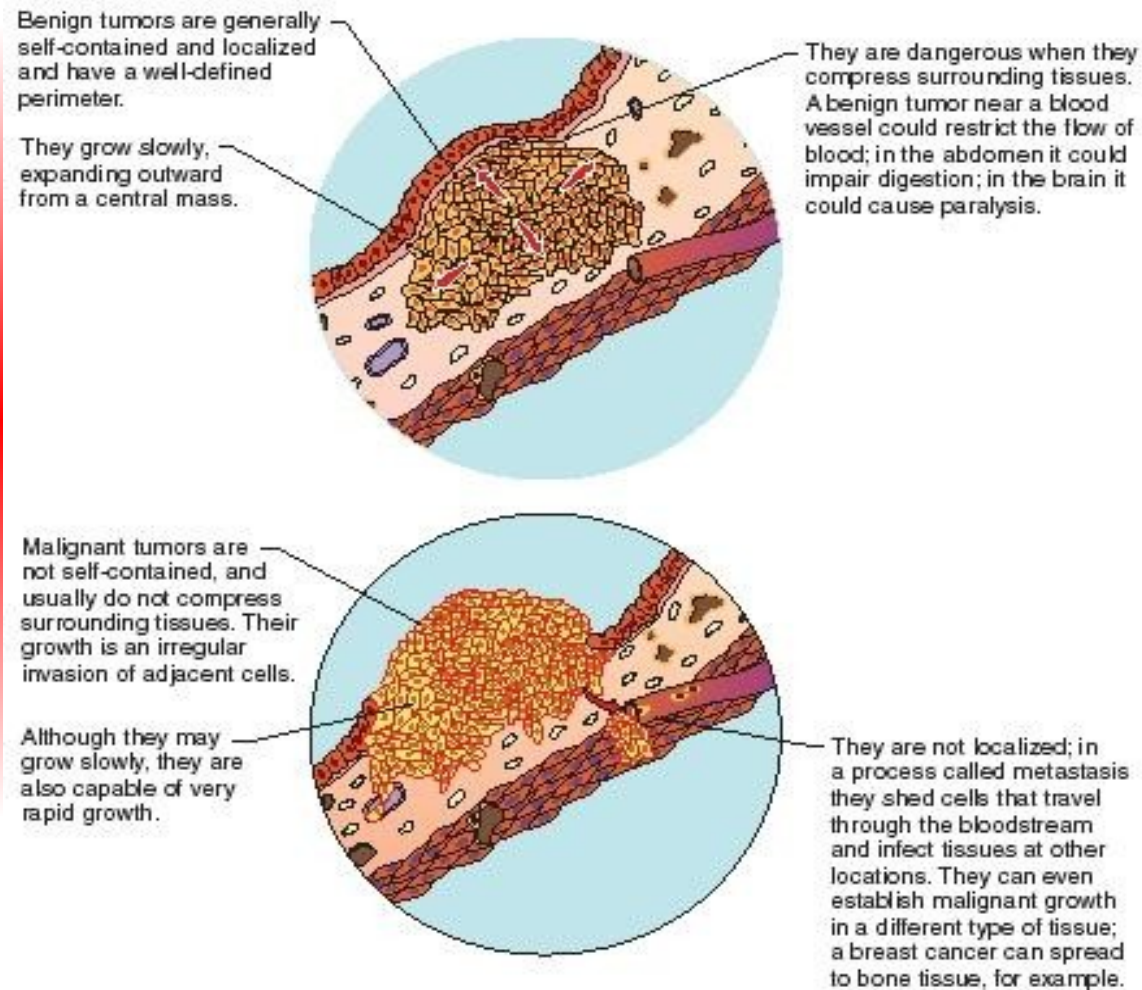
This man's tumor is the result of a rare genetic disorder called neurofibromatosis

## 2. malignant- a cancerous tumor; will metastasize (spread)

Terry Fox

Terry Fox 5:37

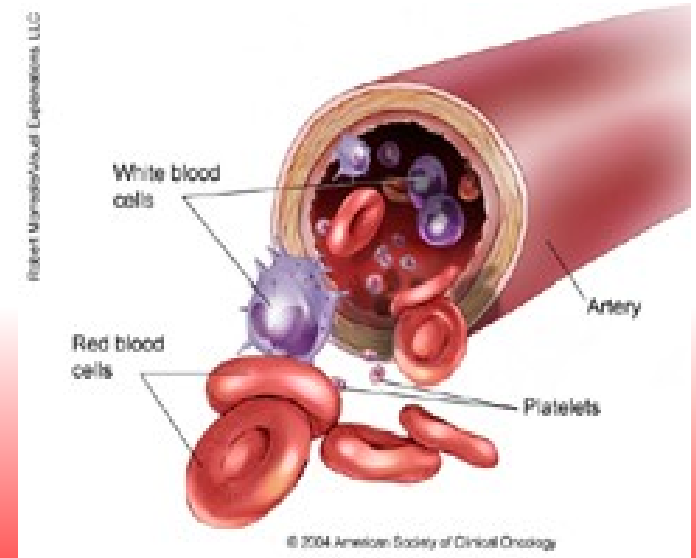
Terry Fox ESPN



## c. types of cancer

1. lymphomas- of the immune system

2. leukemias- of blood forming organs



3. carcinomas- of glands & body linings



4. sarcomas- of connective tissue



## d. The risk factors of cancer

1. damage to genes that help make cells

2. carcinogens- a cancer causing agent

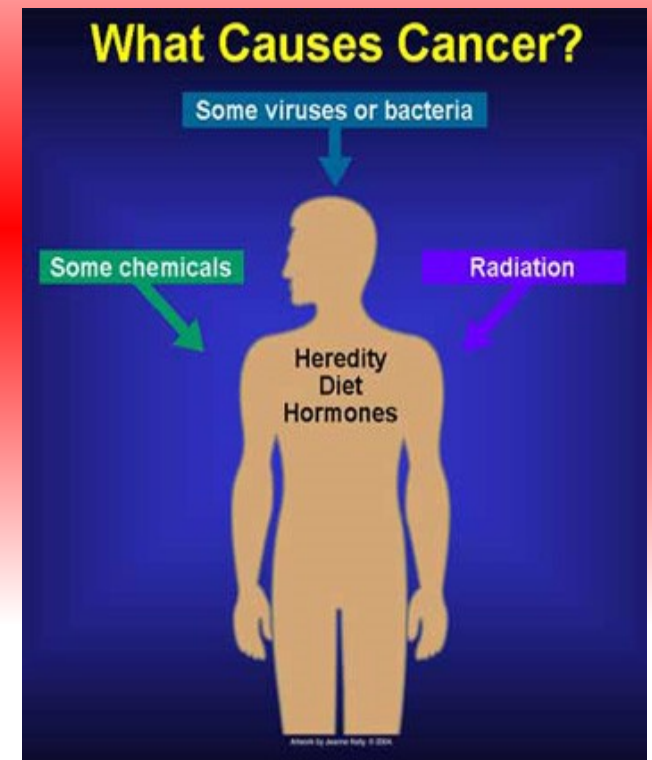
a. radiation

b. tobacco chemicals

c. UV rays

d. some viruses- HPV (an STD)

e. dietary factors



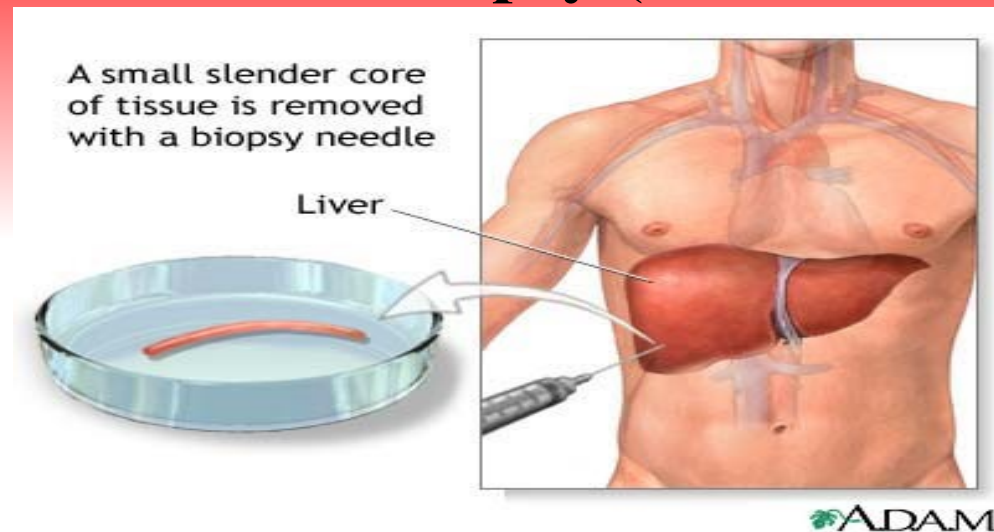


## e. Detecting cancer

### 1. self examination- should be done monthly



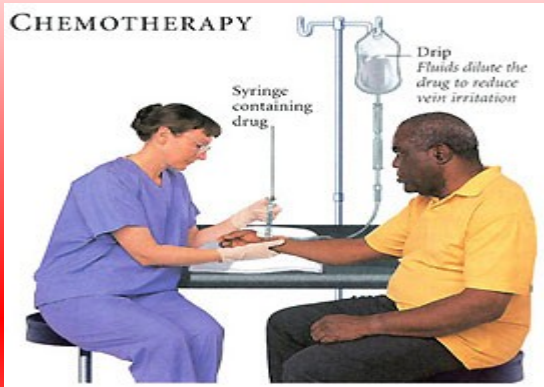
### 2. medical examination- **biopsy** (tissue examination)



## f. Treatment of cancer

1. surgery- removal of the tumor

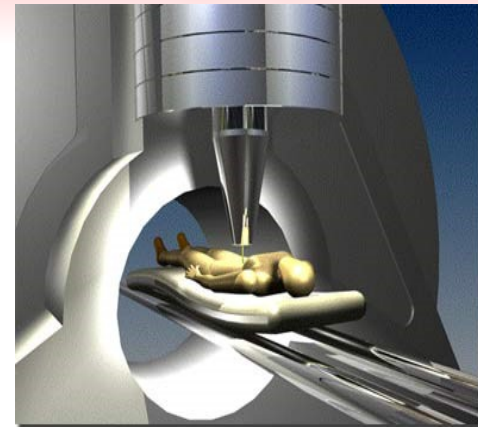
2. chemotherapy- the use of drugs, oral or IV, to kill or control cancer



3. radiation- beam fired at tumor from outside the body

4. immunotherapy- activates immune cells to recognize cancer

\*The goal is to create **remission**, a period of time when symptoms disappear



g. Reducing cancer risk

1. avoid tobacco- causes 1/3 of all cancer deaths



2. protect your skin



3. healthy, low fat diet

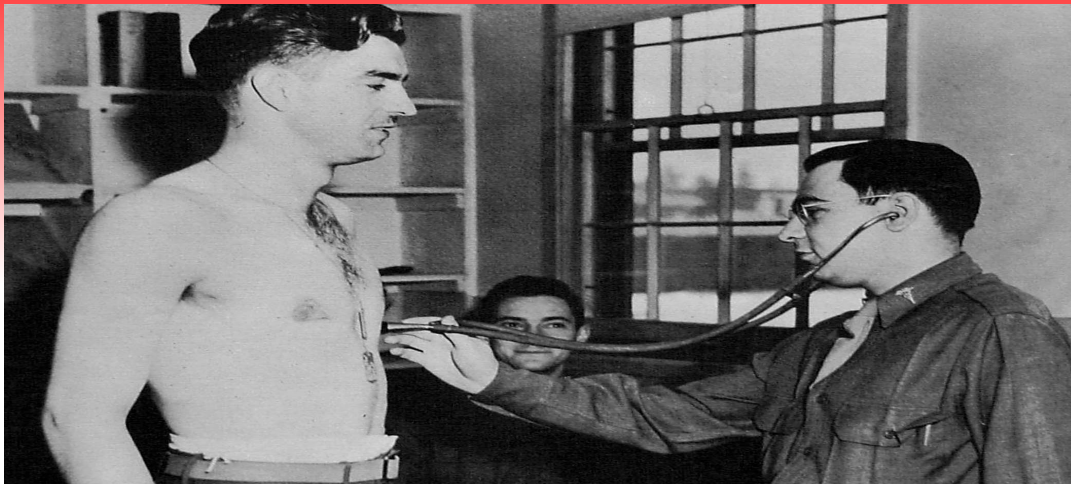
Climbing to Beat Cancer

Iditorad and Cancer

## 4. Exercise- 60 minutes per day



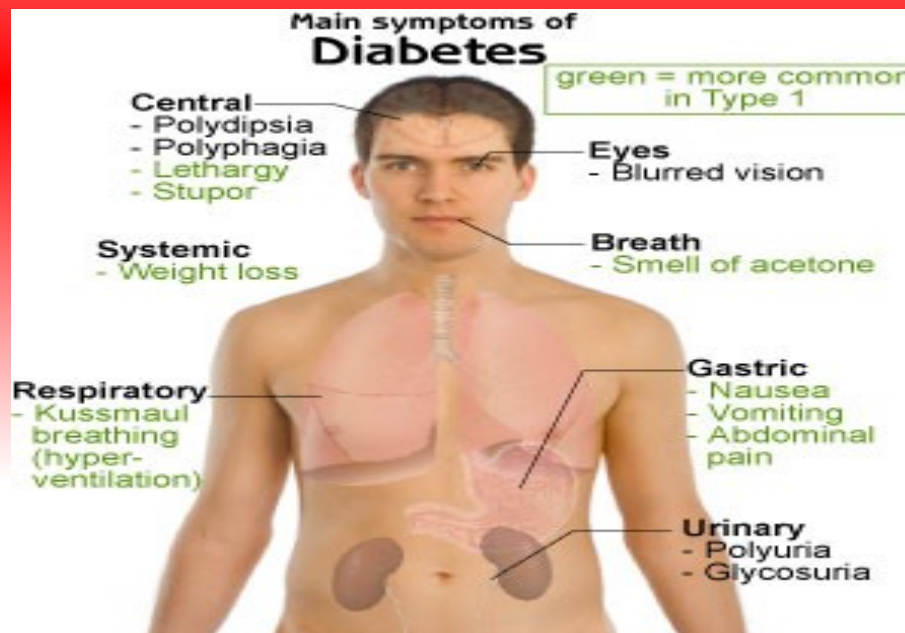
## 5. regular medical check-ups for early detection



## 6. Practice sexual abstinence

7. Diabetes- a disease that affects the way body cells convert glucose (sugar) into energy

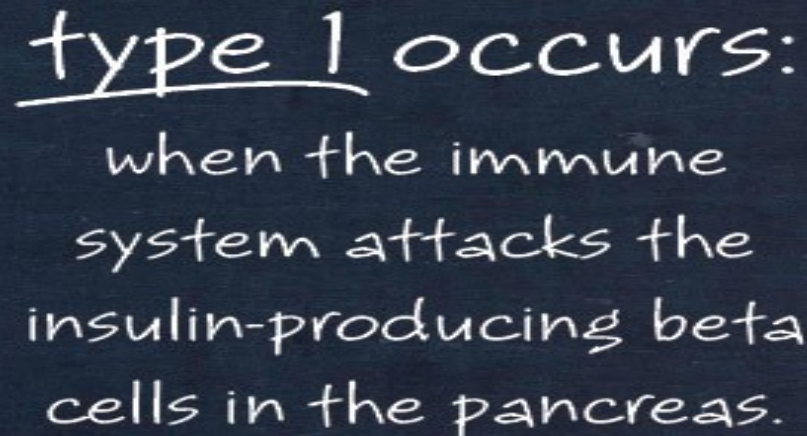
a. diabetes happens when insulin, a hormone made in the pancreas, is either not produced or not used effectively by the cells





b. Type 1 diabetes- AKA insulin dependent

1. no insulin is produced
2. usually diagnosed in children- juvenile diabetes
3. less common type- 5 to 10 percent of all cases
4. requires daily insulin injections



type 1 occurs:  
when the immune  
system attacks the  
insulin-producing beta  
cells in the pancreas.



c. Type 2 diabetes- AKA noninsulin dependent

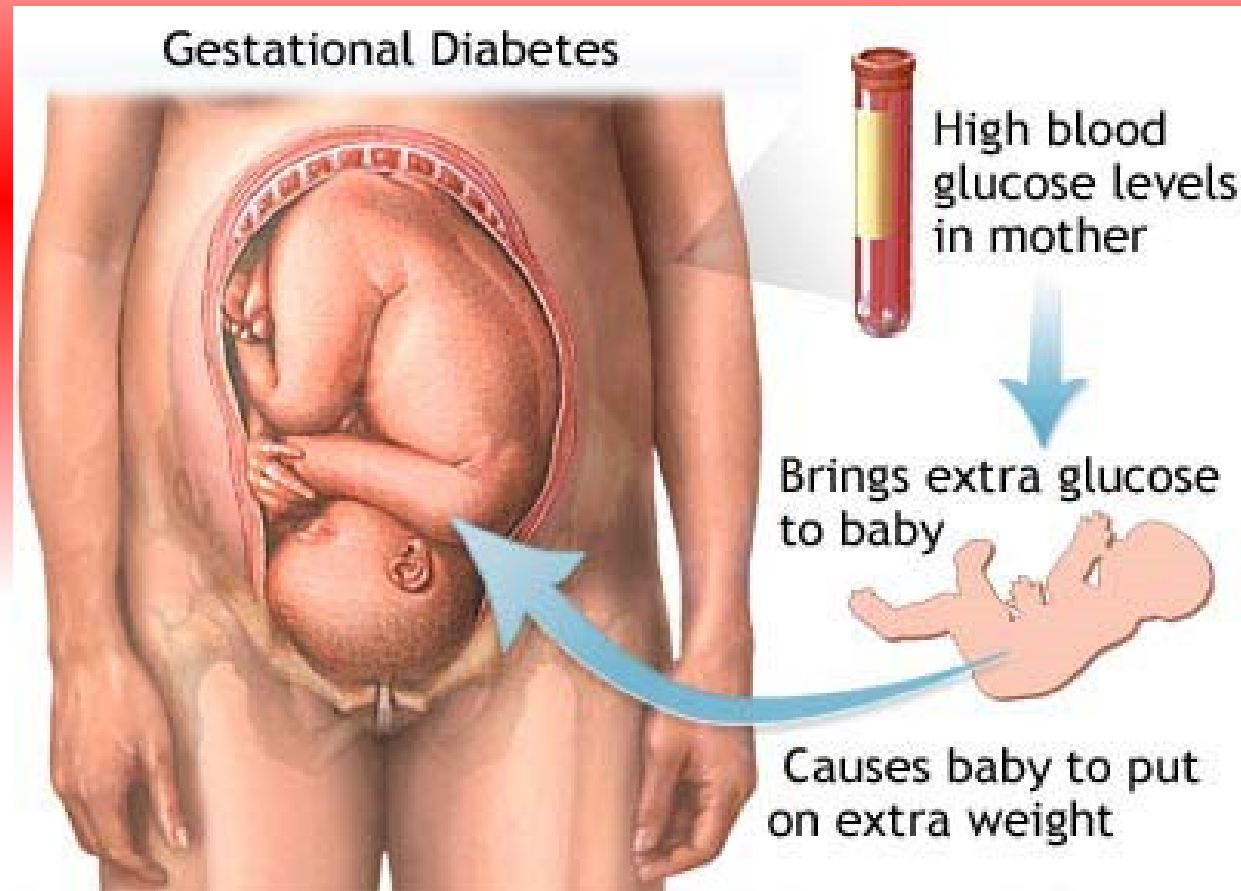
1. some insulin is produced
2. more common- 90 to 95 percent of all cases
3. usually diagnosed in adults
4. may require insulin injections in some cases
5. can be improved through diet and exercise



Being overweight and heredity  
are two risk factors for diabetes

#### d. Gestational diabetes

1. may develop in the pregnant woman
2. often goes away on its own after birth



Directions: Choose any seven items below and define them on your own paper.

- |                       |                     |                          |
|-----------------------|---------------------|--------------------------|
| 1. Pathogen           | 2. Immunity         | 3. Vaccine               |
| 4. Hypertension       | 5. Coronary bypass  | 6. Malignant             |
| 7. HPV                | 8. Angioplasty      | 9. Carcinogen            |
| 10. Type 1 diabetes   | 11. Type 2 diabetes | 12. Stroke               |
| 13. Electrocardiogram | 14. Stent           | 15. Benign               |
| 16. Vector            | 17. Cardiac arrest  | 18. Angina pectoris      |
| 19. Angiography       | 20. Insulin         | 21. Leukemia             |
| 22. Meningitis        | 23. Arrhythmia      | 24. Atherosclerosis      |
| 25. Pacemaker         | 26. Chemotherapy    | 27. Gestational diabetes |

Categorize each disease as caused by bacteria, virus, fungi, parasite or protozoan

- |                   |                   |                           |                     |
|-------------------|-------------------|---------------------------|---------------------|
| 1. Flu            | 2. Athlete's foot | 3. Tetanus                | 4. Tuberculosis     |
| 5. Measles        | 6. Head lice      | 7. Malaria                | 8. Lyme disease     |
| 9. AIDS           | 10. SARS          | 11. Pneumonia             | 12. Ringworm        |
| 13. Strep         | 14. Tapeworm      | 15. Toxoplasmosis         | 16. Trichomoniasis  |
| 17. Meningitis    | 18. Mumps         | 19. Hepatitis             | 20. Salmonellosis   |
| 21. Pertussis     | 22. E. coli       | 23. Herpes                | 24. Yeast infection |
| 25. Smallpox      | 26. TSS           | 27. Scabies               | 28. Gonorrhea       |
| 29. Syphilis      | 30. Croup         | 31. Plague                | 32. Shingles        |
| 33. Jockitch      | 34. Bronchitis    | 35. Scarlet fever         | 36. Roundworm       |
| 37. HPV           | 38. Rabies        | 39. Chlamydia             | 40. Rubella         |
| 41. Fifth disease | 42. MRSA          | 43. Necrotizing fasciitis | 44. West Nile       |

# Family Disease Assignment

Directions: Interview a family member about a disease he/she has or had AND answer the questions below. If the family member is not living any longer, you may use that example still, provided you can answer the questions. The disease can include any type of disease except every day illnesses like the cold and flu.

1. What is the disease or disorder?
2. Is it known by any other names?
3. What is the cause of the disease?
4. What are the symptoms?
5. How can you reduce the risk or prevent this disease?
6. What is the treatment or cure for this condition?
7. Where in the United States does this disease occur most often?
8. Where, around the world, does this disease occur most often?



Directions: Circle the diseases that are communicable diseases **AND** underline the diseases that are noncommunicable diseases.

1. Hepatitis A

2. Pneumonia

3. Cancer

4. Strep throat

5. Diabetes 1

6. Hypertension

7. Hepatitis B

8. Common cold

9. Atherosclerosis

10. Mononucleosis

11. Meningitis

12. Arthritis

13. Stroke

14. Influenza (flu)

15. Diabetes 2

Directions: Circle the diseases that are viral **AND** underline the bacterial diseases.  
Place a star next to any disease that can be bacterial OR viral. Place an  
X next to the diseases that are caused by neither bacteria or virus.

1. Influenza

2. Common Cold

3. Strep throat

4. Hepatitis C

5. Athlete's foot

6. Measles

7. Tuberculosis

8. Chicken pox

9. Mononucleosis

10. Hepatitis A

11. Salmonella

12. AIDS

13. Meningitis

14. Mad Cow disease

15. Pneumonia

16. Jock itch

17. Malaria

18. Mumps

Directions: Circle the diseases that can be properly treated with antibiotics.

- |                          |                         |                      |
|--------------------------|-------------------------|----------------------|
| 1. Common cold           | 2. Viral pneumonia      | 3. Strep throat      |
| 4. Tuberculosis          | 5. Hepatitis A          | 6. Hepatitis B       |
| 7. Mononucleosis         | 8. Measles              | 9. Influenza         |
| 10. Chicken pox          | 11. Bacterial pneumonia | 12. Viral meningitis |
| 13. Bacterial meningitis | 14. Hepatitis C         | 15. AIDS             |

Directions: Circle any term that relates to communicable diseases and underline any term that relates to noncommunicable diseases. If you believe a term applies directly to both types of diseases, place a star next to it.

- |                     |                   |                  |
|---------------------|-------------------|------------------|
| 1. Carcinogen       | 2. Virus          | 3. Fungi         |
| 4. Tumor            | 5. Antibiotics    | 6. Vectors       |
| 7. Self-examination | 8. Vaccine        | 9. Immune system |
| 10. Angioplasty     | 11. Remission     | 12. Insulin      |
| 13. Direct contact  | 14. Excess weight | 15. Heredity     |
| 16. Food and water  | 17. Pacemaker     | 18. Tobacco      |