

FACTORS That Affect Blood Pressure

- 1. Cardiac Output
- Rate of fluid output
- Stroke volume X heart rate
- $70\text{ml} \times 75 \text{ bpm} = 5250 \text{ ml/min}$
- *How many liters?*

FACTORS That Affect Blood Pressure

- 2. Blood Volume
- Blood cells & plasma proteins, nutrients & gases, electrolytes
- 92% water with solutes
- ~ 5 Liters

FACTORS That Affect Blood Pressure

- 3. Peripheral Resistance
- Friction between blood & vessels
- Smooth muscle in walls of arteries
- Vasoconstriction
- Vasodilation

FACTORS That Affect Blood Pressure

- 4. Viscosity
- Physical property of fluid
- State of being thick, sticky & semifluid in consistency
- High viscosity
- Low viscosity

CARDIAC CONDUCTION SYSTEM

- Intrinsic regulating system
- Beats without direct stimulus from nervous system
- ANS innervates heart, but only to increase or decrease the time it takes to complete the cardiac cycle

CARDIAC CONDUCTION SYSTEM

- Self- excitability
- ability to spontaneously & rhythmically generate action potentials
- ~70-80 x per minute



CARDIAC CYCLE

- SA node (pacemaker)
 - Sinoatrial node; causes atria to contract!!
- AV node
 - Atrioventricular node; conduct impulse to bundle
- AV bundle (Bundle of His)
 - Goes down the septum
 - Divides into branches beneath endocardium
- Left & right bundle branches
 - Give rise to fibers into & up/around myocardium
- Purkinje fibers (conduction myofibers)
 - Ventricles contract!!!!

ECG/EKG Electrocardiogram

- Records electrical impulses that stimulate the heart to contract
 - Body fluids conduct electrical currents
- Doctors can assess cardiac rhythms & conduction patterns



ECG/EKG Electrocardiogram

- Records depolarization & repolarization
- Wave of dep. moves toward electrode
 - Positive deflection (wave) on paper



ECG/EKG Electrocardiogram

- P wave
 - Depolarization of atria
- QRS complex
 - Depolarization of ventricles
- T wave
 - Repolarization of ventricles (electrical)



RISK FACTORS IN HEART DISEASE

- Characteristics, symptoms or signs in a person free of disease that are statistically associated with excessive rate of development of heart disease

RISK FACTORS

- 1. high blood cholesterol level
- 2. high blood pressure
- 3. cigarette smoking
- 4. obesity
- 5. lack of regular exercise
- 6. diabetes
- 7. genetic predisposition
- 8. sex
- 9. age