Ch 42.2 Notes

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Vocab

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Cardiac Cycle: One complete sequence of pumping and filling the heart with blood

Systole: The contraction phase of the cardiac cycle

Diastole: The relaxation phase of the cardiac cycle

Cardiac Output: The volume of blood each ventricle pumps per minute

Heart Rate: The number of beats per minute

Stroke Volume: The amount of blood pumped by a ventricle in a single contraction

Atrioventricular (AV) Valve: Lies between each atrium and ventricle

Semilunar Valves: Located at the two exits of the heart

Heart Murmur: The sound made when blood squirts backward through a defective valve

Sinoatrial (SA) Node: A group of autorhythmic cells located in the wall of the right atrium

Electrocardiogram (ECG or EKG): Electrodes placed on the skin to record the currents

Atrioventricular (AV) Node: A relay point that makes impulses are delayed for about 0.1 second before spreading to the heart apex

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Notes

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Coordinated cycles of heart contraction drive double circulation in mammals

Need to get oxygen everywhere in the body

Heart

Always working

* 70-75 beats/minute= average

Structure: 4 chambers

* 2 upper: atria (blood enters)
* 2 lower: ventricles (blood leaves)

Cardiac cycle (one “beat” = fill/pump)

* Systole= contracts= pumps blood
* Diastole= relaxes= fills with blood

Heart (flow of blood)

Blood from BODY into RIGHT ATRIA (superior/inferior vena cava)

Blood pushed from RIGHT ATRIA into RIGHT VENTRICLE

RIGHT VENTRICLE pushes blood into LUNGS (pulmonary artery)

Blood from LUNGS into LEFT ATRIA (pulmonary vein)

Blood pushed from LEFT ATRIA into LEFT VENTRICLE

LEFT VENTRICLE pushes blood into BODY (aorta)

Cardiac output

Graphical user interface

Description automatically generated with medium confidence

Valves prevent backflow

Atrioventricular valve

* Between atrium and ventricles
* Closed by pressure from ventricle contraction

Semilunar valves

* At two exits of heart
* Opened by pressure from ventricle contraction
* Closed by BP in aorta/PA

Maintaining the beat

Sinoatrial node

* Wall of right atrium
* Pacemaker
  + Rate/time of contraction
* Electrical impulses
  + Gap junctions
  + Contract atria
  + Stimulate AV node

Atrioventricular node

* Contract ventricles once atria empty
* Purkinje fibers

Sympathetic vs Parasympathetic

Sympathetic

* Fight/flight
* Adrenal glands= epinephrine
* Increase temp also increases HR

Parasympathetic

* Rest/digest