

Congestive Heart Failure

Congestive Heart Failure is the inability of the heart to pump enough blood to the rest of the body. Blood does not get pumped out efficiently, and consequently pools in the heart.

Statistics

How many people die each year of CHF?

287,000 people

Myth: Only men suffer from CHF

Fact: Over 50% of sufferers are women

What are your odds of getting it?

CHF deaths far exceed cancer, HIV

Lifetime risk – 20% (men and women)

Life expectancy

-approximately 5 years

Overall median survival

-1.7 years in men

-3.2 years in women

Risk Factors

High cholesterol levels in blood

Diabetes

Physical inactivity

Obesity

Smoking

Poor diet

High blood pressure (Hypertension)

Treatment

Heart transplantation

Mechanical assistance

Total artificial heart

The Veterinary Black Bag Program

Project Goals:

- Develop Veterinarian's Black Bags (VBBs) of instructional items and pamphlets for middle school teachers to support classroom visits by local veterinarians.
- Provide professional development for veterinarians and teachers on how to use items in the VBBs
- Promote inquiry-based thinking about health-related subjects while emphasizing the value of biomedical research and promoting careers in science.



PEER

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<http://peer.tamu.edu/VBB/Summary.asp>

Heart Disease

Veterinarian's Presentation



The instruction in this module includes:

Presentation on Heart Disease

Follow-up lessons on:

Human Heart Function

Heart Research

Heart Function Inquiry

Basic Anatomy

Arteries – Carry blood away from the heart

Veins – Carry blood to the heart

Capillaries – Site of gas exchange

Heart Rate

•A slower rate tends to move more blood per beat. Why?

More time for chambers to get filled with venous blood.

•Fast rates tends to move more total blood. Why?

More beats per unit of time.

Though less blood is pumped per beat, the high beat rate will usually move more blood volume in total.

•But very fast rates are not efficient and may even be dangerous. Why?

At high beat rates, there is not enough fill time for the chambers.



Tendon-like cords connect valves to walls of the heart and help hold the valves shut during contraction

The Heart and Heart Diseases

The Heart as a Pump

The heart works as a pump, forcing blood forward into the arteries

Blood returns to the heart in veins. Veins have valves.

What is the function of the valves?

Look in the diagram at the direction of the blood flow and how the valves close

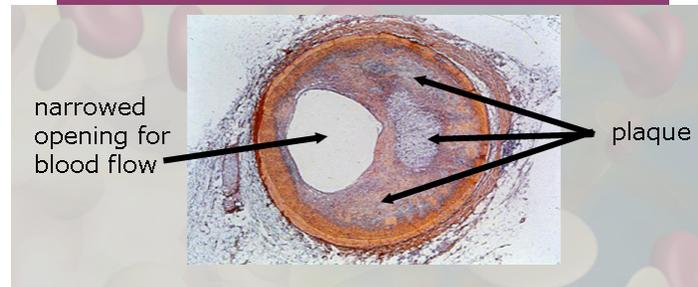


Causes of Heart Attacks

Genetics: it can run in families

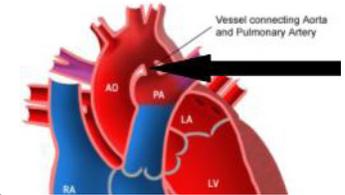
Diet: too much fat and cholesterol

Not enough vigorous exercise



Patent Ductus Arteriosus (PDA)

An arterial shunt called the ductus arteriosus is open in the fetus to prevent blood from being pumped into fluid filled lungs, but should close when the fetus is born. PDA occurs when the shunt does not close within 10-18 hours after birth, and blood does not get pumped to the lungs properly.



In Dogs

PDA is the most common canine congenital (present at birth) heart problem, and affects 5 out of 1000 dogs, in any size or breed.

In Humans

The estimated incidence is from 6 to 20 out of every 100,000 live births, and is increased in children who are born prematurely. It occurs twice as often in girls as in boys.

Management Options

- Observation and monitoring
- Medications may be prescribed to reduce blood pressure, maintain normal heart rhythm, and prevent fluid overload.
- Surgical repair
 - Ligating (suturing closed) the artery
- Catheter based occlusion
 - Placing a “coil” inside the artery to stimulate closure