



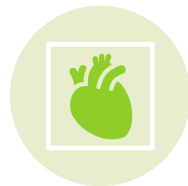
THE CARDIOVASCULAR AND RESPIRATORY SYSTEMS

ANIMAL AROMATHERAPY SPECIALIST CERTIFICATION LEVEL 2 TRAINING – PRESENTED BY JANET ROARK, DVM

THE CARDIOVASCULAR & RESPIRATORY SYSTEMS - AGENDA



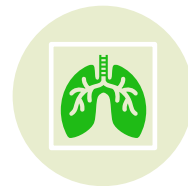
INTRODUCTION



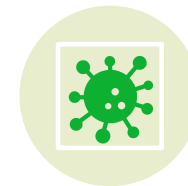
OVERVIEW OF
CARDIOVASCULAR
SYSTEM



CARDIOVASCULAR
PRINCIPLES OF
THERAPY



OVERVIEW OF
RESPIRATORY
SYSTEM



RESPIRATORY
SYSTEM PRINCIPLES
OF THERAPY



NEOPLASIA

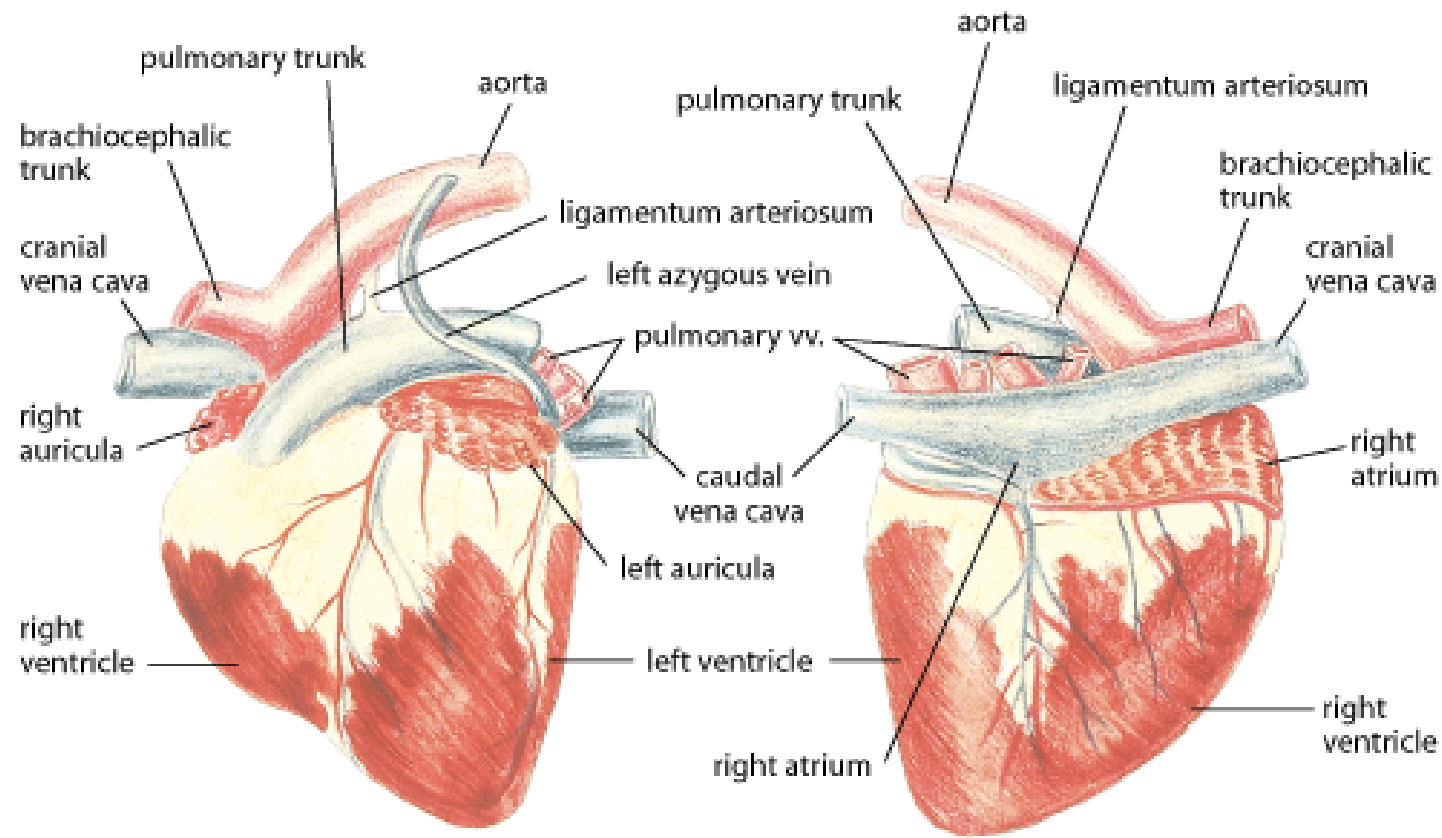


QUESTIONS?

-
- The Cardiovascular system, or Circulatory System, consists of the heart, veins, arteries and capillaries
 - Houses the blood which is comprised of red blood cells, white blood cells and platelets, and lymphatics.
 - Functions: This system supports the entire body in that it keeps blood flowing and cells healthy as it is responsible for bringing cells oxygen, nutrients, hormones, electrolytes and keeping them hydrated.
 - May also include the spleen as a reservoir of blood
-

THE CARDIOVASCULAR SYSTEM - INTRODUCTION

THE CARDIOVASCULAR SYSTEM – INTRODUCTION



Auricular aspect

Atrial aspect

SYMPTOMS POINTING TO CARDIOVASCULAR SYSTEM INVOLVEMENT

- Anorexia | inappetence
- Persistent cough
- Difficulty Breathing | increased respiratory rate or effort
- Fainting | Collapse
- Abdominal Swelling | Distention
 - Due to fluid build up from the heart condition
- Exercise intolerance
- Heart Murmur
- High blood pressure
- Abnormal heart rate
- Changes in body weight – usually weight loss
- Decreased performance
- Restlessness
- Hiding or other abnormal behaviors | Behavior changes
- Weakness
- Bluish tinge to the skin
- Swelling of the legs
- Jaundice
- Bloody mucous

INFORMATION HELPFUL TO OBTAIN WITH THE CARDIOVASCULAR SYSTEM

- Complete history including
 - Current medications and supplements
 - Appetite
 - Diet (any recent changes?)
 - Changes in body weight
 - Previous illness or injury
 - Changes in behavior
- Physical Exam | Observations
 - Stress in the home?
 - Recent changes?

- Veterinary Testing
 - Bloodwork
 - Radiographs
 - Ultrasound | Echocardiography
 - Auscultation
 - Pulses
 - ECG
 - Etc.



- 1 PERSISTENT COUGH
- 2 DIFFICULTY BREATHING
- 3 FAINTING/COLLAPSING
- 4 ABDOMINAL SWELLING/DISTENTION
- 5 LESS TOLERANCE TO EXERCISE
- 6 HEART MURMUR
- 7 CHANGE IN HEART RATE
- 8 CHANGE IN BODY WEIGHT
- 9 RESTLESS OR HIDING
- 10 LOSS OF APPETITE

🚩 = signs that should always warrant a visit to the vet



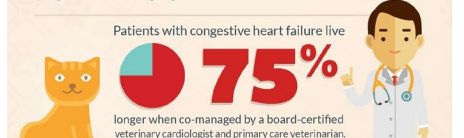
VALVULAR DISEASE AFFECTS



Heart disease usually strikes cats around 4-6 years of age, but the symptoms can be found in a cat of any age.

6 DIFFERENT KINDS OF HEART DISEASE

- VALVULAR DISEASE** - Abnormal heart valves leading to heart enlargement.
- MYOCARDIAL DISEASE** - Heart muscle becomes weak or thick.
- ARRHYTHMIAS** - Condition that causes irregular heartbeat.
- PERICARDIAL DISEASE** - Protective sac around heart fills with fluid.
- HEARTWORM DISEASE** - Heartworm infestation damages heart, lungs, and arteries.
- CONGENITAL DISEASE** - Born with a malformed heart that can lead to progressive heart enlargement.



SOURCES
1. <http://www.vetstreet.com/our-experts/understanding-heart-disease-in-dogs>
2. <http://www.vetstreet.com/our-experts/understanding-heart-disease-in-cats>
3. <http://www.vetstreet.com/our-experts/understanding-heart-disease-in-pets-and-humans-how-anything-in-common>
4. <http://www.vetstreet.com/our-experts/understanding-heart-disease-in-pets-and-humans-how-anything-in-common>

COPYRIGHT 2016 CVCAVETS.COM | ALL RIGHT RESERVED

RESTING HEART RATES IN ANIMALS – NORMAL

Species	BPM (Beats Per Minute)
Cat	120-140
Dog	70-120
Horse	28-40
Goat Sheep	70-80
Chicken (adult)	250-300
Chick	350-450
Guinea Pig	200-300
Hamster	300-600
Mouse	450-750
Rat	250-400
Rabbit	180-350
Pig	70-120
Dairy Cow	48-84

CARDIOVASCULAR DISEASES | ABNORMALITIES OF THE CARDIOVASCULAR SYSTEM - MECHANISMS

- Valvular Disease – the cardiac valves fail to close or open properly (heart murmurs)
- Myocardial Disease – the heart muscle pumps inefficiently or relaxes inadequately
- Arrhythmia – the heart beats too fast, too slow, or irregularly
- Vascular Disease – the systemic vessels offer too much resistance causing an interference of blood flow
- Cardiac Shunts or Extracardiac Shunts – abnormal communication between chambers of the heart or between systemic and pulmonary circulation
- Too little or too much blood compared with the ability of the vessel to store that blood
- Parasitism of the cardiovascular system (such as heartworm disease)
- More than 10% of animals seen by a veterinarian have some form of cardiovascular disease
- Cardiac diseases may be congenital or acquired
- The most prevalent diseases of the cardiovascular system include Mitral regurgitation (dogs), Hypertrophic cardiomyopathy (HCM) in cats, Dilated cardiomyopathy (DCM) in dogs, and Heartworm disease

HEART MURMURS

- **Grade I:** extremely quiet, focal, and only heard in a quiet environment
 - **Grade II:** soft, focal, although consistently auscultated
 - **Grade III:** consistent, moderate intensity, and regional (heard throughout hemithorax)
 - **Grade IV:** consistent, loud, radiating widely without a palpable thrill
 - **Grade V:** consistent, widely radiating, with palpable thrill present
 - **Grade VI:** consistent, loud, widely radiating with palpable thrill, and audible with the stethoscope when lifted 1 cm away from the surface of the thorax
- The grade of the murmur may or may NOT correlate with the severity of disease depending on the underlying cause of the murmur.
- Regurgitation (back flow of blood)
- Constitutes >75% of heart disease in dogs

HEART MURMURS – RECOMMENDATIONS

- Give an Omega 3 supplement – dogs – 500 mg per 10 lbs body weight
- Standard Process supplement - Canine Cardiac Support
- Pet Wellbeing supplements – Young at Heart
- Oils to use: topically or aromatically - Cypress, Marjoram, Helichrysum, Spikenard, Yarrow, Ylang Ylang, Bergamot, Copaiba
- Advise on diet / weight if overweight

SUPPORTING THE CARDIOVASCULAR SYSTEM (PRINCIPLES OF THERAPY)

- Decreasing chronic stretch of myocardial fibers – sedative oils (Lavender, Geranium)
- Manage/ remove edema – diuretic oils (Lemon, Juniper Berry, Lemongrass, Cedarwood, Cypress, Sandalwood)
- Improve circulation to enhance blood flow to vital organs and decrease edema formation (Cedarwood, Cypress, Frankincense, Juniper Berry, Myrrh, Rose, Sandalwood, Lemon, Lemongrass)
- Regulate heart rate and rhythm – Antispasmodic Oils (Ylang Ylang, Melissa, Neroli, Bergamot)
- Improve oxygenation of blood – Adaptogens (Bergamot, Frankincense, Geranium, Rose, Lemon, Jasmine, Ylang Ylang); Anti-oxidants (Marjoram, Rose, Lavender, Chamomile)
- Address any underlying pathology or symptoms – Ylang Ylang if hypertensive, Rosemary if hypotensive, etc.
- Nutritional Considerations:
 - Omega 3 Fatty Acids
 - Taurine Supplementation
 - L-Carnitine – important for fatty acid metabolism
 - Coenzyme Q10 – mitochondrial energy and general antioxidant properties – dose for dogs is 30=90 mg orally twice daily.



OILS THAT MAY INTERFERE WITH SOME HEART MEDICATIONS

- Supplements (Young at Heart, Canine Cardiac Support, etc.)
- Blue Cypress
- Blue Tansy
- Yarrow
- Vitex
- Australian Sandalwood
- German Chamomile

ANEMIA

- Causes
 - Blood loss (Trauma, surgery)
 - Bleeding tumors
 - Gastric ulceration
 - External or internal parasites
 - Iron deficiency | Copper deficiency
 - Toxin exposure
 - Infection (Bacteria, virus, rickettsia, protozoa)
 - Immune mediated
 - Chronic Disease
- Essential Oil support: focus on underlying condition, also Frankincense, Copaiba, Helichrysum, Geranium, Rose, Wild Orange, Lemon, Chamomile, Ginger, Cinnamon

THE RESPIRATORY SYSTEM - INTRODUCTION

- The Respiratory system consists of the nose, nasal cavity, mouth, trachea, bronchi, bronchioles, alveoli and lungs. It also partially houses the Olfactory system, which consists of the nasal cavity, olfactory cells and receptors, the vomeronasal organ (in some species) and the olfactory bulb (in the brain) and is responsible for the sense of smell.
- Birds also have air sacs making their respiratory tract about twice the size of mammals of the same size
- This system has many functions. It delivers oxygen to the cardiovascular system to be distributed throughout the body and removes carbon dioxide. It also is a filtering organ, helps maintain acid-base balance, metabolizes bioactive substances, protects airways through warming and humidifying air, and helps with temperature regulation when panting





SYMPTOMS POINTING TO RESPIRATORY SYSTEM INVOLVEMENT

- Anorexia | inappetence
- Persistent cough
- Difficulty Breathing | increased respiratory rate or effort
- Fainting | Collapse
- Nasal Discharge
- Epistaxis (bleeding from the nose)
- Coughing up blood
- Exercise intolerance
- Changes in body weight – usually weight loss
- Decreased performance
- Hiding or other abnormal behaviors | Behavior changes
- Weakness

INFORMATION HELPFUL TO OBTAIN WITH THE RESPIRATORY SYSTEM

- Complete history including
 - Current medications and supplements
 - Appetite
 - Diet (any recent changes?)
 - Changes in body weight
 - Previous illness or injury
 - Changes in behavior
- Physical Exam | Observations
 - Stress in the home?
 - Recent changes?
- Veterinary Testing
 - Bloodwork
 - Radiographs
 - Auscultation
 - Etc.

RESTING RESPIRATORY RATES IN ANIMALS – NORMAL

Species	BPM (Breaths Per Minute)
Cat	16-40
Dog	18-34
Horse	10-14
Goat Sheep	16-34
Chicken (adult)	12-37
Guinea Pig	42-104
Hamster	100-250
Mouse	60-230
Rat	85
Rabbit	32-65
Pig	32-58
Dairy Cow	26-50

SUPPORTING THE RESPIRATORY SYSTEM (PRINCIPLES OF THERAPY)

- Hydration
- Decrease the volume and viscosity of secretions and facilitate removal – Mucolytics (Eucalyptus, Lemon, Anise, Citronella, Pines, Palmarosa, Fennel, Thyme, Cypress, Marjoram, Bergamot, Niaouli, Mints, Rosemary, Spruces, Firs)
- Control infection & inflammation – Antimicrobials (Bergamot, Rosemary, Oregano, Thyme, Clove, Cedarwood, Manuka, etc.) and Anti-inflammatory oils – Frankincense, Myrrh, Copaiba
- Improve oxygenation - Adaptogens (Bergamot, Frankincense, Geranium, Rose, Lemon, Jasmine, Ylang Ylang); Antioxidants (Marjoram, Rose, Lavender, Chamomile), Mint oils
- Address any underlying pathology or symptoms – Antispasmodics for cough, Resins for congestion, Anti-allergic oils for Allergies
- Aromatic and topical use primarily for respiratory support – internal if infection present

NEOPLASIA

- Nasal Tumors are typically malignant and aggressive – carcinomas & lymphoma
- Larynx and Trachea – oncocytoma, SCC, MCT, melanoma, osteosarcoma
- Primary lung tumors – adenocarcinoma, anaplastic carcinoma – 80% malignant
- Respiratory system tumors are often secondary (lungs)
- Cardiac tumors – not common, lymphoma
- Multi-modal treatment often necessary
- Palliative care
- Essential Oils: Anti-Cancer/ Anti-Tumoral oils; Anti-inflammatory oils; Analgesia (pain relief) oils

QUESTIONS?

