



Top Cardiology Tip #41

Top Cardiology Tip: 41

by Janet Olson, DVM, DACVIM (Cardiology)

No, you didn't miss the first 40 top cardiology tips. But, 41 is the number to remember and refers to resting respiratory rates in dogs with left sided congestive heart failure.

Resting respiratory rates are a valuable tool in helping diagnose and manage left sided congestive heart failure. In fact, elevated resting respiratory rates are the earliest sign of left sided heart failure in dogs and cats. In 2009 a presentation at the ACVIM forum indicated that a resting respiratory rate higher than 35 breaths per minute in a dog is highly suggestive of heart failure. A more recent study by Rishi, published in 2012 revealed that the diagnostic accuracy increased even more at a cutoff of 41 breaths per minute.

How to utilize resting respiratory rates for your patients with heart disease.

To Help Diagnose Left Sided Congestive Heart Failure

- 1) When heart disease is first recognized (i.e. new murmur in an asymptomatic patient) discuss resting respiratory rates with your client. Show them how to do it and what a normal range should be (12 to 20 breaths per minute). Have them obtain a baseline for their dog and then have them routinely check it once a month.
- 2) When they come in for their annual wellness visits, ask them what the average resting respiratory rate has been.
- 3) If they notice a consistent and persistent rise in their dogs resting respiratory rate, particularly if the rate exceeds 41 breaths per minute, they should bring them in for an evaluation to include a physical examination and thoracic radiographs to confirm the diagnosis.
- 4) If heart failure is detected at this early stage, therapy can be initiated and a crisis avoided.

To Help Monitor Progression of Disease and to Adjust Therapy

- 1) Once left sided congestive heart failure has been diagnosed, the owners should be provided with a log to keep track of their dog's resting respiratory rate on a daily basis.
- 2) The goal with therapy is to maintain a resting respiratory rate < 30 breaths per minute.
- 3) Owners can use this guideline to know when to be concerned and how to effectively communicate to you the status of their patient by phone. In many patients, using this guideline, therapeutic adjustments can be made by phone.

SEE BELOW FOR A CLIENT HANDOUT. PLEASE PRINT OUT AND PROVIDE TO YOUR CLIENTS!

Monitoring Resting Respiratory Rates

RESTING RESPIRATORY RATES FOR MONITORING AND MANAGEMENT OF LEFT SIDED CONGESTIVE HEART FAILURE

Resting respiratory rates are a valuable tool for determining if your pet is developing fluid in its lungs secondary to left sided congestive heart failure. In fact, elevated resting respiratory rates are the earliest sign of left sided congestive heart failure. If the disease process is recognized at this early stage, appropriate therapy can be initiated before the onset of a stressful and often costly respiratory crisis.

What is a resting respiratory rate? It is the rate, or times per minute, that your dog or cat breathes in one minute, while at complete rest - NOT when your pet is playing or excited - NOT when it is panting - NOT after it has just eaten or is settling down from a walk. The resting respiratory rate should be taken when your pet is completely relaxed and resting, or even sleeping. To obtain a resting respiratory rate, watch your dog or cat take a breath in and then exhale. That is one breath. Count how many breaths he/she takes in 15 seconds. Then take that number and multiply it by 4 to get the breaths per minute ($15 \times 4 = 60$ seconds).

When do I check the resting respiratory rate?

- 1) If your dog or cat has been diagnosed with heart disease but is not currently having any clinical signs, it would be of tremendous value to determine your pet's normal resting respiratory rate. In the future, if the rate consistently increases to above 35 or 40 breaths per minute at rest, you should have him/her evaluated at your veterinary hospital within 24 to 48 hours which would include a physical examination and x-rays of his/her chest. If a diagnosis of left sided congestive heart failure is made, appropriate therapy will be initiated.
- 2) If your dog or cat has been diagnosed with left sided congestive heart failure and has already begun therapy, monitoring resting respiratory rates can help you determine, at home, how well they are responding and if adjustments to therapy may be needed. If you are concerned about your pet's status, you should contact your veterinary clinic. They will ask you what your pet's resting respiratory rate is. This provides your vet with an objective measurement by which to make further recommendations. They may recommend you give an extra dose of a diuretic and see how your pet responds, or they may ask that you bring your pet in for further assessment and care.

Worried about your pet's heart disease? Take a deep breath, then count theirs. Early intervention and close monitoring is the key to helping your pet breath easy and live longer.



RESPIRATORY RATE LOG

Normal value: 10 to 20 breaths per minute

Values of concern: greater than 40 breaths per minute

PATIENT NAME:

DATE	TIME	RESPIRATORY RATE