

What is an 'Innocent or Physiological 'Murmur in a Boxer dog?

Boxer dogs are known to have a higher incidence of murmurs than many other breeds, but how do Innocent or physiological murmur's fit in?

An Innocent murmur is the same as a physiological flow murmur, juvenile murmur and puppy murmur, which is a murmur without any pathology within the heart. i.e. the dog needs to have normal cardiac anatomy. A normal heart.

If the cardiac anatomy is normal, why do we get a murmur? A murmur can be heard when there is turbulent blood flow within a heart chamber. For innocent physiological murmurs this turbulence is usually in the outflow tracts leaving the right or left ventricle out through the pulmonary artery and Aorta accordingly. From a Cardiologist's perspective, this means the murmur should be heard at the heart base; but this is also the area where we would expect to hear a murmur of pulmonic stenosis or subaortic stenosis.

The innocent murmurs are usually quiet, **Soft and low intensity murmurs**, graded 1 to 3 / 6 although most are grade 1 or 2 in my experience.

So what do you do with a puppy that is thought to have an innocent murmur? A paper in the Netherlands reported of 330 puppies heart screened by stethoscope, between 6-10 weeks old, by a cardiologist who detected 97 murmurs... all low grade 1-2 / 6 Soft murmurs. It is relatively common, but as this paper suggested It is not always well recognised by first opinion veterinary surgeons. With soft quiet puppy murmurs the best option is allow time for the pup to grow and then have them listened to again; I normally suggest 4 weeks later, say at 14-16 weeks old.

If the murmur is still present and the client is worried, we can either use ultrasound to scan the dog's heart or wait another 4-6 weeks and review at that point.

Innocent puppy murmurs are all low grade and soft in sound; any **Harsh or higher intensity murmurs** are more likely Sub Aortic stenosis or other congenital heart disease. If you think of the size of a puppy and the size of an adult dog and their corresponding heart size and growth required, it is not surprising that murmurs can be found.

It is one of the reasons that any heart testing by Cardiologists for a scheme states the dogs must be over 12 months of age so the evaluation will be of an adult heart.

You can have the puppies checked earlier so you have an idea of their heart status before but one of the issues with Subaortic stenosis is that it can get worse during the first 12 months. This means a quieter murmur in a young pup can develop to be much louder by 12 months of age.

But remember there are other issues that can cause murmur in older dogs (and younger dogs) as well that are not related to abnormal cardiac structure:

High temperatures and fever

Pregnancy

High Cardiac outputs for various reasons

Any disease that changes blood viscosity which could be anaemia or low blood protein levels.

Athletic heart older dogs: Boxers are usually very fit but dogs with huge amounts of exercise and 'exercise training' similar to Human athletes or horses they can develop enlarged heart chambers, changes in muscle function related to physiology and not disease, and again can have physiological or innocent murmurs.

The best plan to have one of your dog's heart tested / auscultated (listened to) by stethoscope then make sure they are fit and well, non-pregnant and ideally not in season. Try to keep them calm(!) or allow to settle down beforehand.

Puffing and panting makes it more difficult for the cardiologist to listen and in my opinion the extra sounds heard can complicate heart murmur grading and possibly give a worse result.

A quiet, cold air conditioned room is the best environment for listening to Boxer, with a nice calm dog..... We can all dream and real life is not always like that!

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