Steroid responsive meningitis and arteritis (SRMA)

What is SRMA?
Steroid responsive meningitis-arteritis (SRMA) in dogs is an 'immune-mediated' or 'auto-immune' condition where inflammation occurs in the blood vessels in the outer covering of the nervous system (the meninges). The condition most likely occurs because the dog's immune system produces antibodies against a normal body protein causing inflammation. In SRMA this is a protein expressed by the walls of blood vessels in the meninges.
Despite extensive research we are not able to say why some dogs develop SRMA. Several studies have been performed looking at possible triggers including demographic, social, environmental, and medical factors. Breed was the only significant predisposing factor (see breeds listed below). Of particular importance, one study specifically evaluated risk associated with vaccination and identified no correlation between type or timing of vaccination and risk of developing SRMA. It is most likely that a complex interaction of genetics and the dog's environment contribute to developing the condition.
There is no infection with this condition and the condition is therefore not contagious.

Which pets experience SRMA?
SRMA is diagnosed most commonly in dogs between 6-18 months of age, although dogs as young as 3 months and as old as 9 years have been reported with it. SRMA can occur in any breed but is most common in Beagles, Border Collies, Boxers, Bernese Mountain Dogs, Jack Russell Terriers, Weimaraners and Whippets.

What are the signs of SRMA?
Two different forms of SRMA may occur: **acute** and **chronic**. The main clinical signs of the acute form of SRMA are spinal pain, a stiff gait, reluctance to move the neck, a hunched back and often a fever. The pain is often worse in the neck but can also be present to some extent throughout the spine. In all but the most severe cases the neurological examination will be normal. Most dogs will have a reduced appetite and be reluctant to exercise. Inflammation can affect other parts of the body including the joints which can cause a stiff and stilted gait. Some dogs with SRMA can have inflammation of other inner body surfaces, like the covering of the heart (potentially causing abnormal heart rhythm), lungs and abdominal contents, causing the development of some fluid and episodes of diarrhoea and vomiting.

How is SRMA diagnosed?
The diagnosis of SRMA is made by taking a thorough history of your dog's clinical signs followed by a physical and neurological examination. A diagnosis is normally made on the basis of firstly excluding other causes of spinal pain (like bone, muscle or soft tissue infections, immune-mediated joint disease, or trauma to the neck) with blood tests and either X-rays or advanced imaging such as MRI or CT. A spinal fluid sample is collected from the neck or lower back (or both) in a sterile manner under general anaesthesia. The cells in the spinal tap are examined for large numbers of a specific type of inflammatory cell which allows us to make a diagnosis.

Measurement of inflammatory markers in the spinal fluid and blood such as C-reactive protein (CRP) IgA levels have been used to aid in the diagnosis of SRMA. Assessment of these inflammatory markers can be useful in distinguishing SRMA from other diseases that

can cause similar clinical signs. Serum CRP in particular can also be useful in monitoring for treatment efficacy and relapse.

What treatment options are available?
The main treatment for SRMA is suppression of the immune system with drugs, particularly high doses of corticosteroids like prednisolone. The administration of high doses of steroids by injection or orally usually results in significant and rapid improvement or resolution of the clinical signs. The steroid dose is then reduced slowly over the course of several months until the stimulus for the immune system has gone. Side effects are often seen with steroid use include increased thirst and hunger, increased urination and weight gain. Dogs can be more reluctant to exercise, pant more and are at increased risk of infections (respiratory, urinary). Occasionally additional medications are required to aid suppression of the immune system, or to allow us to reduce the steroid dose without fear of relapse. All medications can be given to your pet at home.

What is the prognosis?
Overall, the prognosis for SRMA is fair to good. The majority of dogs (80-100%) respond to initial treatment with immunosuppressive corticosteroids. While the initial response rate is excellent approximately one third of dogs will suffer at least one relapse during their lifetime. Some dogs will experience multiple relapses despite appropriate treatment. Relapse typically occur when steroid treatment comes to an end with clinical signs recurring a median of 8-28 days following discontinuation of treatment. There are also reports of dogs relapsing up to 1.5 – 2 years after discontinuation of treatment. Fortunately, a large proportion of dogs that suffer a relapse will positively respond to re-initiation of immunosuppressive therapy. Dogs that suffer a relapse may be successfully weaned off of treatment after long-term therapy; however, some will require a degree of life-long therapy to control their disease.