



Always consult with a veterinarian that you feel comfortable with before diagnosing or treating any disease on your own. This information is for reference only.

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## Trapped Neutrophil Syndrome

### Issue Description

*Seen in Border Collies, which is an immune dysfunction resulting in multiple infections and failure to thrive in pups. TNS is a hereditary disease where the bone marrow produces neutrophils (white cells) but is unable to effectively release them into the bloodstream. Affected puppies have an impaired immune system and will eventually die from infections they cannot fight. Once thought to be rare, it is now believed that the disease goes undiagnosed for several reasons. Even when looking, blood counts do not always show lower than normal neutrophil (white blood cell) counts. Because it is an autoimmune-deficiency disease, young puppies present a variety of symptoms depending upon what infections they fall prone to. Thus many cases are not properly diagnosed and have just been thought to be "fading puppies". The age of onset varies depending on which infection is involved at the time. Most puppies become ill before leaving the breeder but some do not have symptoms until later. Most affected puppies die or are euthanised by about 4 months of age.*

### Other Names

TNS

### Causes

The genetic defect leading to the disease has been identified.

### Symptoms

Signs include fever, lameness, loss of appetite and diarrhea. Blood tests show low number of neutrophils (a type of white blood cells released from the bone marrow) causing inability to fight infections and general failure to thrive.

### Diagnosis

By DNA testing, the responsible mutation can be shown directly. This method provides a very high accuracy test and can be done at any age. It offers the possibility to distinguish not only between affected and clear dogs, but also to identify clinically healthy carriers. This is an essential information for controlling the disease in the breed, as carriers are able to spread the disease in the population, but can not be identified by means of common laboratory diagnostic.

### Treatment

There is usually a good response to long-term corticosteroid treatment. However, care is required to avoid adverse effects associated with corticosteroid use. It is also imperative that medications are not withdrawn abruptly as a second remission may not always be achievable.

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