

Imerslund-Gräsbeck Syndrome (IGS)

Affected breeds: Australian Shepherd, Border Collie

Also known as **Cobalamin Malabsorption**, affected pups typically fail to thrive and have anaemia, poor appetite, poor growth, weakness and intermittent diarrhoea. The non-specific nature of these signs probably means that the condition often goes undiagnosed. The basis for the disease is an inherent inability to absorb vitamin B12 in the digestive tract; these clinical signs can be ameliorated by regular injections of vitamin B12. Failure to treat leads to irreversible neurological damage.

IGS is caused by a recessive genetic mutation. This means that dogs which carry the mutation ("CARRIERS") are normal but will pass the mutation on to an average of 50% of their offspring. Puppies which inherit two copies of the mutation will have IGS ("AFFECTED").

This test is particularly useful for breeders:

- To identify carriers among their breeding stock so that they can avoid CARRIER X CARRIER mating combinations which would risk AFFECTED puppies.
- To conclusively confirm Imerslund-Gräsbeck Syndrome

This test will be reported as:

CLEAR : no evidence of the IGS mutation

CARRIER : carries one copy of the defect, which will be passed to 50% of offspring

AFFECTED : carries two copies of the defect, and will have IGS

The genetic status of dogs can be used to predict breeding outcomes when different combinations are mated:

AFFECTED X AFFECTED = 100% AFFECTED

AFFECTED X CARRIER = 50% AFFECTED, 50% CARRIER

AFFECTED X CLEAR = 100% CARRIER

CARRIER X CARRIER = 25% AFFECTED, 50% CARRIER, 25% CLEAR

CARRIER X CLEAR = 50% CARRIER, 50% CLEAR

CLEAR X CLEAR = 100% CLEAR

References

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