

# VETERINARY TECHNICAL DATASHEET

Sensory Ataxic Neuropathy, (SAN)



Mutation Found In :Golden Retriever

## Disorder Type

- Nervous system

## Disease Severity

- Severe

## Background

Sensory Ataxic Neuropathy (SAN) is a slowly progressive neurologic disorder causing uncoordinated movements and impaired balance, that was first found in Golden Retrievers. A genetic variant in the same location has been found in Akitas, but it has not been shown to cause any clinical signs. The mode of inheritance is mitochondrial and is inherited through the maternal lines. Hence the clinical significance of this mutation in dogs that lack maternal Golden Retriever ancestry is not yet clear.

## Key Signs

- Ataxia
- Dysmetria
- Difficulty maintaining balance

## Clinical Description

Dogs with SAN begin to exhibit evidence of the condition between 2 to 8 months of age. However, many dogs with the genetic disease variant will never go on to develop clinical signs of the disease. In dogs with the disease variant that do develop clinical disease, the clinical signs appear insidiously, with affected dogs exhibiting ataxia and dysmetria. Decreased spinal reflexes and abnormal postural reactions are also seen, though they are not accompanied by muscle atrophy. Disease progression is slow but euthanasia is often elected while the dog is still a juvenile. SAN has only been found to cause disease in Golden Retrievers and when inherited through the maternal lines, and it should be noted that the variant is a risk factor meaning that not all Golden Retrievers with copies of the variant will go on to exhibit clinical signs. Akitas have been found to have an alternative genetic variant in the exact same location as the mutation identified in Golden Retrievers. While the two mutations cannot be distinguished by the technology used in this test, the Akita variant is neutral and does not cause the condition, so dogs inheriting this neutral variant are not affected. Therefore, the clinical significance of this disease variant in dogs where it has not been inherited through maternal lines of Golden Retriever ancestry is not yet clear.

## Mode of Inheritance

- mitochondrial

## Gene Name

- tRNATyr

## Next Steps

The wellbeing of dogs clinically affected with Sensory Ataxic Neuropathy should be monitored closely as the disease progresses. Euthanasia is usually elected on welfare grounds when clinical signs become severe as there is no cure for affected dogs.

## References

Jäderlund KH, Orvind E, Johnsson E, Matiasek K, Hahn CN, Malm S, Hedhammar A. A neurologic syndrome in Golden Retrievers presenting as a sensory ataxic neuropathy. *J Vet Intern Med.* 2007 Nov-Dec; 21(6):1307-15.

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