

# VETERINARY TECHNICAL DATASHEET

Cleft Palate (CP); originally found in Nova Scotia Duck Tolling Retriever



Mutation Found In :Nova Scotia Duck Tolling Retriever

## Disorder Type

- Skeletal

## Disease Severity

- Moderate/severe

## Background

Cleft palate (CP) is a birth defect encountered in several breeds. The palate is the roof of the mouth separating the oral cavity and nasal passages. A CP occurs when the two sides of the palate fail to come together and fuse during embryonic development. This forms an opening between the mouth and nasal passages. An inherited form of CP associated with a small lower jaw is known to affect the Nova Scotia Duck Tolling Retriever.

## Key Signs

- Cleft palate
- Shortened mandible

## Clinical Description

A CP is an abnormal hole in the roof of the mouth (palate) which results in an opening between the nasal passages and the oral cavity through which milk passes when an affected puppy is nursing. The defect, present from birth, allows milk to flow into the nasal passages which will then either spill out of the nostrils while nursing or may cause the puppy to gag out the milk from its lower respiratory tract. These feeding difficulties lead to decreased growth and frequent chronic infections with a greatly increased risk of developing aspiration pneumonia.

## Mode of Inheritance

- autosomal recessive

## Gene Name

- DLX6

## Next Steps

Puppies suffering from severe CP are unlikely to survive through puppyhood without proper treatment. A CP can be operated on when a puppy is 3 to 4 months old. Puppies with severe clinical signs may need tube feeding to survive until the operation can be performed.

## References

Wolf ZT, Leslie EJ, Arzi B, Jayashankar K, Karmi N, Jia Z, Rowland DJ, Young A, Safra N, Sliskovic S, Murray JC, Wade CM, Bannasch DL. A LINE-1 Insertion in DLX6 Is Responsible for Cleft Palate and Mandibular Abnormalities in a Canine Model of Pierre Robin Sequence. PLoS Genet10:e1004257, 2014.