



# Trotter or Pacer? Accurate Method to Detect Preferred Gait in Standardbred Horses

A genetic testing method to accurately (>99%) predict gait profile of Standardbred horses around the globe.

Technology No. 20180249

**IP Status:** Pending US Patent; **Application #:** 17/048,434

## Trotter or Pacer Stallion? Genetic test can predict

Prof. McCue at the University of Minnesota has developed a method to accurately predict gait profiles (pacer vs. trotter) in Standardbred horses using genetic testing. This test examines a specific set of single nucleotide polymorphisms (SNPs), and uses a conditional inference tree algorithm to predict the gait profile of a horse with **over 99% accuracy**.

The results of this test will help owners, trainers and breeders to:

- identify preferred natural gait of their horses: pacer or trotter
- plan and train their horses for suitable races
- fine-tune breeding programs with designed matings

While mutation in DMRT3 gene can be used as a necessary indicator for “gaitedness”, it is fixed in Standardbreds and is not useful to predict the preferred gait profile. It is worth noting that nearly 20% of the offspring of Standardbred trotter stallions go on to race as pacers (Cothran et al., Anim Genet. 1987).

## Phase of Development

Pilot scale demonstration in an independent population (99.4% accuracy)

## Features & Benefits

- Early prediction of preferred gait profile helps owners/trainers choose and plan for suitable races
- Accurate prediction (over 99%) using a set of genetic indicators
- No need to rely on ancestry, or physiological proxies such as back lengths/loin strength to predict the gait of the horse
- Reliable, early determination saves time, money, and other resources

- Breeders can develop effective breeding programs

## Applications

- Horse training
- Horse racing
- Diagnostic tool for equine traits
- Diagnostic tool for selective horse breeding

### Researchers

Molly McCue, DVM, MS, PhD  
*Professor, Veterinary Population Medicine*  
[External Link](http://vetmed.umn.edu) (vetmed.umn.edu)

### Publications

[\*Identification and validation of genetic variants predictive of gait in standardbred horses\*](#)  
*PLoS Genet.* , 2019 May; 15(5): e1008146.

### Ready for Licensing

This technology is now available for license! The university is excited to partner with industry to see this innovation reach its potential. Please contact us to share your business' needs and your licensing interests in this technology. The license is for the sale, manufacture or use of products claimed by the patents.

<https://license.umn.edu/product/trotter-or-pacer-accurate-method-to-detect-preferred-gait-in-standardbred-horses>