

How do you make the perfect sled dog?

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This is a team of sled dogs. Credit: Huson et al., BMC Genetics

Over the last few hundred years, Alaskan sled dogs have been bred to haul cargo over Arctic terrain and, more recently, for racing. Now, researchers writing in the open access journal *BMC Genetics* have identified the contributions different breeds have made to the speed, endurance and work ethic of Alaskan sled dogs.

Heather Huson and Elaine Ostrander, from the National Institutes of Health, Bethesda, USA, worked with a team of researchers to carry out [genetic analysis](#) in 199 sled dogs and 681 purebred dogs from 141 different breeds.

Huson said, "The Alaskan sled dog comprises several different lineages, optimized for different racing styles - long or short distance. We sought to identify breed composition profiles associated with expertise at specific tasks, finding that the Alaskan Malamute and Siberian Husky contributions are associated with enhanced endurance; Pointer and Saluki are associated with enhanced speed and the Anatolian Shepherd has a positive influence on work ethic".

The researchers sampled sled dogs from eight kennels, rating them for speed, endurance, and work ethic, using established criteria specified for the distinct racing styles of sprint and distance. These attributes were correlated with [genetic information](#) taken from each dog and compared to likely ancestral breeds. Speaking about the results, Huson said, "The Alaskan sled dog presents a case in which a genetically distinct breed of dog has been developed through the selection and breeding of individuals based solely on their athletic prowess.

Interestingly, this continual out-crossing for athletic enhancement has still led to the Alaskan sled dog repeatedly producing its own unique [genetic signature](#). Indeed, the Alaskan sled dog breed proved to be more genetically distinct than breeds of similar heritage such as the Alaskan Malamute and Siberian Husky".

More information: A genetic dissection of breed composition and performance enhancement in the Alaskan sled dog, Heather J Huson, Heidi G Parker, Jonathan Runstadler and Elaine A Ostrander, BMC Genetics (in press) www.biomedcentral.com/bmcgenet/

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