

Liver Related Genetics - GPT

The **GPT gene** influences a dog's baseline **ALT** (alanine aminotransferase) level.

Dogs with 2 copies of the A allele (AA) exhibit lower overall ALT levels than dogs with 1 copy (AG), who exhibit lower level than dogs with no copies (GG).

Healthy Dog

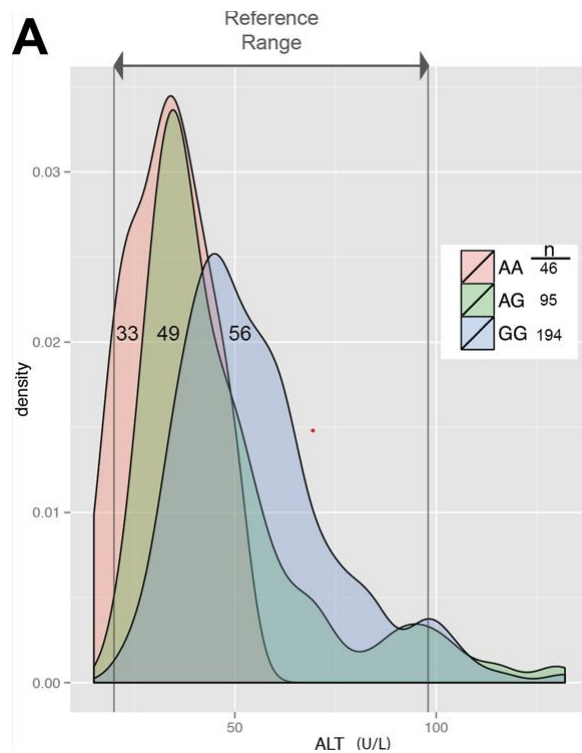


Chart A shows the normal range of ALT levels based on the GPT gene for healthy dogs.

- AA (shown in pink) average ALT is 33 U/L
- AG (shown in green) average ALT is 49 U/L
- GG (shown in blue) average ALT is 56 U/L

Dog with Liver Problem

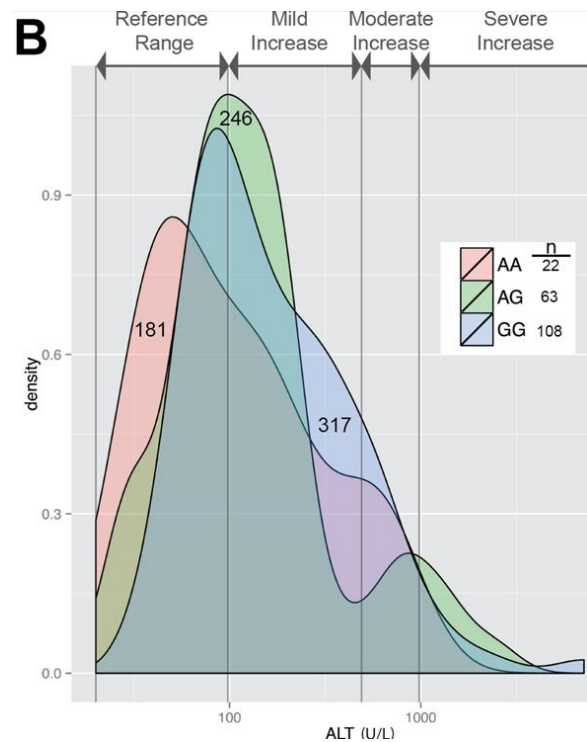


Chart B shows the same breakdown, but for dogs with liver disease or injury.

- AA (shown in pink) average ALT is 181 U/L
- AG (shown in green) average ALT is 246 U/L
- GG (shown in blue) average ALT is 317 U/L

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Why it matters

This article is for educational purposes only and does not replace professional veterinary advice.

Because ALT is a key marker of liver health, knowing a dog's GPT genotype helps veterinarians interpret ALT results more accurately. A dog genetically predisposed to lower ALT may show a smaller increase even when liver disease is present.

What about Keeshonden?

In the test results that I had available at the time of this article of 9 keeshond:

- **Eight** have one copy of the GPT A allele (AG).
- **One** has no copies (GG).

Source Material

White et al 2016

Genetic Mapping of Novel Loci Affecting Canine Blood Phenotypes

Michelle E. White, Jessica J. Hayward, Tracy Stokol, Adam R. Boyko

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0145199>