

# TAURINE DEFICIENCY IN DOGS

## BACKGROUND

- Amino acids are the “building blocks” of proteins. All animals require amino acids to maintain a healthy physiological function.
- Proteins are made up of groups of amino acids, 10 of which cannot be produced by a dog’s body and need to be supplied within the diet. A carnivore’s natural diet is rich in all 10 essential amino acids.
- Poultry, fish, meat and eggs are excellent Biologically Appropriate sources of amino acids.
- Taurine is an amino acid which can only be found in animal protein. It can be synthesised in dogs from the precursor amino acids cysteine and methionine. It is not present in vegetarian protein sources such as grains and/or legumes.
- The sulphur amino acid family includes methionine, cysteine and taurine, which are abundant in fish, eggs and organ meats. These amino acids are important in the maintenance of a healthy heart, healthy skin and hair and good eyesight.

- In addition, animal feeding tests using AAFCO procedures have substantiated that ACANA Lamb & Apple Singles formula provides complete and balanced nutrition, with no indication of taurine-deficient dilated cardiomyopathy in dogs.

## RENDERING

- A University of California Davis study<sup>3</sup> indicates that the method of cooking has a significant effect on taurine loss. To read the study, the details of which are below, click here.
- Conventional pet foods are made primarily with meat meal ingredients, which are typically rendered at high temperatures, where most of the taurine and its precursors are destroyed.
- All our ORIJEN and ACANA foods include large amounts of fresh meats with minimal heat treatments and meat meals that are processed at lower temperatures than conventional rendering.
- Limiting the exposure of our Fresh Regional Ingredients to heat means our foods retain the specific amino acids needed for a Biologically Appropriate kibble.


## MEAT CONTENT AND WHOLEPREY

- Dogs can produce their own taurine from two essential amino acids, cysteine and methionine. Due to their ability to make their own, taurine is not considered an essential amino acid for dogs
- Our naturally occurring cysteine and methionine content is consistent with a Biologically Appropriate diet, and is listed in the typical analysis. You can find this information under Dog Food here.
- For dogs with no pre-existing medical or genetic conditions, ORIJEN and ACANA diets provide sufficient levels of naturally occurring and highly digestible methionine, cysteine and taurine. Our values for these amino acids exceed all amino acid minimums stated by the AAFCO Dog Food Nutrient profile.

## TAURINE AND OUR FOODS

### LAMB AND RICE BASED DIETS

- Previous studies<sup>1,2</sup> have reported that taurine deficiency may arise from lamb and rice based diets where the primary protein is lamb meal.
- It is hypothesized<sup>2</sup> that consumption of diets with inadequate methionine and cysteine can result in taurine deficiency in dogs.
- The naturally occurring sulphur amino acid precursors of taurine, cysteine and methionine are consistent with a Biologically Appropriate diet, and are listed in the typical analysis. You can find this information under Dog Food here.
- ACANA Lamb & Apple Singles formula uses FRESH and RAW lamb meat as the first ingredient and contains WholePrey ratios of meat, organs and cartilage. Of the 31% protein in the ACANA Singles foods, more than 75% of the protein comes directly from the meat and organ inclusions, which are rich in taurine.

  
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## OUR COMPETITORS


- Conventional pet foods contain large amounts of grain and vegetables as their primary source of protein. As a result, essential amino acids, such as methionine, are insufficient and require supplementation. They are included on the ingredient panel as DL-methionine.
- Each ORIJEN and ACANA food leads its category in fresh meat content and meat diversity, while incorporating WholePrey ratios that include muscle meat, organs and cartilage. By using WholePrey ratios we are able to minimize synthetic supplementation.
- Our award-winning Biologically Appropriate foods mirror the quantity, freshness and variety of meats that dogs and cats are evolved to eat.

## DOGSTAR

Brand	Formula	(%) Taurine (as fed basis)
ACANA Singles	Pork & Squash	0.11
	Lamb & Apple	0.13
	Duck & Pear	0.15
	Turkey & Greens	0.12
	Beef & Pumpkin	0.10

## REFERENCES

1. R.C Backus, G. Cohen, P.D. Pion, K.L. Good, Q.R. Rogers and A.J. Fascetti. (2003) Taurine deficiency in Newfoundlands fed commercially available complete and balanced diets. J. Am. Vet. Med. Assoc. 223: 1130-1136.
2. A.J. Fascetti, J.R. Reed, Q.R. Rogers, and R.C. Backus. (2003) Taurine deficiency in dogs with dilated cardiomyopathy: 12 cases (1997-2001). J. Am. Vet. Med. Assoc. 223: 1137-1141.
3. A.R. Spitze, D. L. Wong, Q.R. Rogers and A.J. Fascetti. (2003) Taurine concentrations in animal feed ingredients; cooking influences taurine content. J. Anim. Physiol. a. Anim. Nutr. 87: 251-262.

  
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