

# Know Your Nutrients: L-CARNITINE



L-Carnitine is the active form of carnitine that plays a role in energy production and metabolism. More specifically, it's an amino acid derivative that impacts energy levels by transporting fatty acids into the mitochondria where they can be used as fuel.



L-Carnitine is produced within the body, but it can also be taken as a supplement, or be found in many different protein-heavy foods. In supplement form, it is commonly available as a capsule or liquid.

## L-CARNITINE AFFECTS:

### Deficiency

L-Carnitine deficiency can cause a variety of health problems for animals; most significantly, heart disease in dogs. L-Carnitine also helps the heart beat regularly and optimizes blood flow.



### Metabolism

L-Carnitine has a central role in the metabolism of fats. It is commonly added to weight-loss diets to aid in the breakdown of body fat, while maintaining lean muscle mass.

### Antioxidant

L-Carnitine also acts as an antioxidant helping to fight free-radicals and keep internal inflammation down.

### Cognitive Function

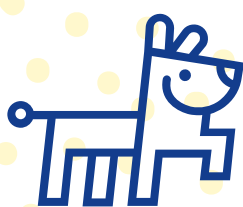
L-Carnitine has been shown to decrease fatigue and increase cognitive function in senior-age dogs.



### Supplements

It is estimated that the bodies of our pets can only produce about one-third of their L-Carnitine needs; the remainder must come from foods and dietary supplements.

## VERIFYING YOUR PRODUCTS' CARNITINE LEVELS:



For total carnitine determination, acylcarnitine is hydrolyzed to free carnitine by a saponification procedure. Free carnitine is extracted with water, then filtered and diluted with acetonitrile.



Levels are quantified by liquid chromatography with tandem mass spectrometry (LC-MS/MS).



Eurofins has a quantification method for the following complex matrices: infant formula, pet food, and pet food ingredients.

