

# L-CARNITINE™



## CLINICAL APPLICATIONS

- Support Cardiovascular Health, Cardio-Protectant
- Support Post-Exercise Muscle Recovery
- Support Fat Utilization, Weight Loss Protocols
- Nutritional Support for Individuals Prone To or With Carnitine Deficiency (ie. Valproate Sodium Therapy, Long-term Parenteral Nutrition, Elderly, Hemodialysis Patients, etc.)

*L-Carnitine™ is a patented L-Carnitine provided in a highly stabilized form.*

**All 3rd Opinion Inc® Formulas Meet or Exceed cGMP quality Standards**

## DISCUSSION

L-carnitine is synthesized in human liver and kidneys from the essential amino acids L-lysine and L-methionine in the presence of adequate niacin, vitamins B6 and C, and iron. L-carnitine has two main functions: First, it transports long chain fatty acids into the inner membranes of the mitochondria where beta-oxidation of the fatty acids produce bioenergy in the form of ATP. Second, it removes from the mitochondria short and medium-chain fatty acids that result from both normal and abnormal metabolism. This process maintains mitochondrial Coenzyme A levels.

Carnitine plays a vital role in the regulation of muscle fuel metabolism. During high intensity submaximal exercise the availability of muscle free carnitine may be limiting to fat oxidation. Increasing muscle total carnitine content in resting healthy humans reduces muscle glycolysis, increases glycogen storage and appears to increase fat oxidation.<sup>1</sup> A randomized, placebo-controlled study in respiratory challenged individuals suggested that carnitine can improve exercise tolerance and inspiratory muscle strength, as well as reduce lactate production.<sup>2</sup>

The safety (including dose range) and tolerability of supplemental L-carnitine was assessed by a Phase I/II open-label trial with adult, advanced cancer, carnitine deficient, fatigued patients. The study demonstrated up to and including 3000 mg/day was safe and well-tolerated with increasing positive outcome as the dose increased.<sup>3</sup> Nevertheless, some do not yet consider the data for the safety of long term consumption above 2000 mg/day sufficient.<sup>4</sup>

A 2007 meta-analysis of nine randomized controlled trials concluded carnitine may be effective in improving pregnancy rate and sperm kinetic features in individuals affected by male infertility. Further investigation is needed to confirm the specific efficacy of carnitine on male infertility.<sup>5</sup>

No discussion of carnitine would be complete without mention of early research demonstrating its benefit in lowering lipids, especially triglycerides.<sup>6,7</sup> Research in 2007 has pointed to its possible roles in fighting cancer-related fatigue<sup>8</sup> and assisting in the management of blood sugar disorders.<sup>9</sup>

DISTRIBUTED BY:  
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L-CARNITINE™



## Supplement Facts

Serving Size: 1 Capsule  
Servings Per Container: 60

	Amount	%Daily Value
L-Carnitine (free form) from 500 mg of l-carnitine tartrate	340 mg	**

\*\*Daily Value not established.

**Other Ingredients:** Cellulose and magnesium stearate.

## DOSING:

1-2 capsules, three times daily with or between meals. The general dosing is 500mg-2000mg/day. The higher doses should be spread out throughout the day.

## REFERENCES

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## PRECAUTIONS:

L-Carnitine™ is not recommended for people with active kidney or liver disease. Some practitioners recommend omitting carnitine one week each month if you are using it as a supplement to improve fat metabolism and muscular performance. L-Carnitine is generally well-tolerated. Certain medications may increase the need for carnitine. Vitamin C deficiency may lead to a carnitine deficiency.

\*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

