



CARNITINE

WHAT IS CARNITINE?

Carnitine is one of the most highly sought-after ingredients of today's nutritional supplements. Found in many popular supplements on the market, Carnitine offers tons of benefits, including **fat loss**, **muscle growth**, better **post-workout recovery** and **increased cognitive performance**. With years of study to prove its case, Carnitine is considered to be safe and efficient, which makes it that much more popular in the fitness community.

Carnitine is a non-essential amino-acid-like compound, meaning it's produced in the body naturally in your liver and kidneys before being transported for use in other areas of the body. In order for it to be produced, your body needs another two amino acids called lysine and methionine, found mostly in red meat. Carnitine has two forms: active (L-Carnitine) and non-active (D-carnitine) with L-Carnitine being found in the brain, cardiac muscles (heart) and skeletal muscles.

Carnitine is essential for many vital functions inside the body, but is most related to the production of cellular energy.

BENEFITS OF CARNITINE

If you are engaged in a healthy lifestyle and eat well, then the odds are that your diet would enable your body to maintain a high enough level of carnitine to enable normal function. However, if the benefits below are something you are looking to increase, then carnitine supplementation would be beneficial.

Improved Mental Focus - Studies focussed on people suffering from chronic fatigue syndrome have shown that carnitine stimulates improved cognitive (brain) function by increasing neurotransmitter activity, thereby reducing fatigue and enhancing concentration.

Enhanced Fat Metabolism - It works by transporting fats into the mitochondria of cells. From there, the long chain fatty acids are metabolised into ATP for energy. This is how it transforms fat cells into energy and boosts the weight loss process. Through utilising the body's fat stores, allowing you to work out for longer and ultimately aiding in fat loss. Evidence suggests it may promote weight loss by increasing calorie expenditure. Carnitine may even assist with the prevention of cardiovascular disease.

Repair of Muscle Damage and Soreness (DOMS) - According to research in the Journal of Strength and Conditioning, Carnitine helps reduce muscle damage during and after a high-intensity workout. The way Carnitine works is by enhancing the blood flow to the muscles, thus resulting in reduced oxidative stress and improved cellular signalling, essential for muscle recovery.

Increased Testosterone - Carnitine supplements help increase levels of testosterone in your body, thus leading to a greater amount of androgen receptors found in your muscles.

Plant Based - Our Carnitine is obtained through a chemical synthesis that is not extracted from meat. Therefore Tuff Supps Carnitine is suitable for vegetarians and vegans as well as anyone looking for a superior supplement.

**ENHANCES MENTAL FOCUS,
FAT METABOLISM &
TESTOSTERONE LEVELS**

HOW DOES CARNITINE WORK?

When you exercise, thousands of biochemical reactions are taking place inside your body. One of these is the action of your enzymes starting to **break down stored fat** into fatty acids and glycerol, a sugar alcohol. These are then used as **fuel throughout exercise**.

Studies have theorised that L-Carnitine is a compound that plays an important role in this process of **fat metabolism** as its key role is to transport the long-chain fatty acids across the inner membrane. L-Carnitine works by enhancing the transportation of long-chain fatty acids into the mitochondria of the muscle cells and **increasing fuel availability** during low to moderate-intensity exercise.

PLANT BASED

NUTRITIONAL INFORMATION

	PER 2G SERVE	PER 100G
ENERGY	34kj	1700kj
	8.1 Cal	406 Cal
BCAA 2:1:1 PROTEIN	2g	100g
FAT (TOTAL)	0.0g	0.0g
- SATURATED	0.0g	0.0g
CARBOHYDRATES	0.0g	0.0g
- SUGARS	0.0g	0.0g
SODIUM	0mg	0mg

Product Disclaimer: Formulated Supplementary Sports Food. Not suitable for children under 15 years of age or pregnant women. Should only be used under medical or dietetic supervision. This product is not a sole source of nutrition and should be consumed in conjunction with a nutritious diet and appropriate physical training or exercise program.

HOW MUCH L-CARNITINE SHOULD I TAKE?

Studies suggest varying doses for each form of L-Carnitine for best results, the following is deemed optimal for Carnitine: Acetyl-L-Carnitine: 600-2,500 mg per day.

Most scientific studies recommend taking L-Carnitine about one hour prior to exercise. However, if you want to take advantage of the other benefits (recovery and weight loss support), taking it after exercise can also be effective.

SIDE EFFECTS OF CARNITINE SUPPLEMENTATION

As Carnitine is found naturally in food there are no side effects of Carnitine supplementation. Studies have shown that following dosage recommendations did not show serious adverse side effects when taken for less than 12 months.