

Acetyl-L-Carnitine And Your Health

<http://vitamins.vitanetonline.com/index.php/nac/>

Acetyl-L-Carnitine is a derivative of carnitine. It is produced when an acetyl functional group is introduced to L-Carnitine. It is commercially touted for its higher bioavailability in comparison with its unacetylated counterpart while its functions are similar to that of carnitine. It plays a central role in the metabolism of energy, in as much as it is directly involved in the utilization of bioactive compounds.

Cells require the presence of L-Carnitine during the conversion of fatty acids into usable forms of energy. Acetyl-L-Carnitine maintains cellular functions when the body is engaged in physical activities. This increases the utilization of fatty acids as sources of energy in addition to carbohydrates. Its availability makes sure that the cells are provided energy enough to support strenuous exercise.

How Acetyl-L-Carnitine Works

Modulates Cellular Metabolism

L-carnitine has been tied to weight loss in the past few years. Indeed it is an effective way of getting rid of unwanted fatty tissues as it facilitates the metabolism of fats as a source of energy. Acetyl-L-Carnitine does exactly that. Cells have an inclination for glucose in the synthesis of ATP, the primary energy of cells. The presence of Acetyl-L-Carnitine enables the cells to also utilize fatty acids.

Acetyl-L-Carnitine is actually produced by the body in times of stress. For example, long durations of physical exertion prompt the cells to synthesize Acetyl-L-Carnitine from L-Carnitine and Acetyl-CoA. Its presence inside the cells powers the network of tissues implicated in the activity. Oral intake of Acetyl-L-Carnitine appears to speed up cellular metabolism.

Prevents Lipid Peroxidation

Our body is capable of detoxifying natural by-products of oxygen during cellular respiration under normal circumstances. That being said, cells are susceptible to the harmful effects of reactive oxygen species every time we engage in stressful activities. Free radicals in particular are highly reactive, damaging proteins, lipids, and even DNA.

Cells need Acetyl-L-Carnitine to protect it from free radicals and other reactive oxygen species. The lipid bilayer that constitutes cell membranes especially benefits from this organic compound. Supplementation of Acetyl-L-Carnitine raises the antioxidant defense of cells against lipid peroxidation in that it acts on the radicals that steal electrons from cellular lipids.

Improves Stress Tolerance

It is a well established fact that cellular lifespan is influenced by the chemical compounds in the employ of cells, such as vitamins and minerals, as well as the wear and tear foreign materials exert on cells. Cellular health is compromised when the body continues to engage in an activity without ample rest in between. Simply put, pushing your body past the limit cuts short the lifespan of cells.

Acetyl-L-Carnitine is believed to lengthen the lifespan of cells. In addition to protecting tissues from radical damage, it is responsible for meeting the energy demands of individual cells when the human body is exposed to stress over a long span of time. By so doing, it powers cellular functions for extended periods without putting any strain on cellular resources.