

L-CARNITINE CHEMISTRY, METABOLICAL AND CLINICAL FUNCTIONS,  
DEFICIENCIES. ITS EFFECTS ON ANIMALS PRODUCTIVITY AND REPRODUCTION.  
A LITERATURE REVIEW

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**Summary.** In the last few years vitamin-like compound L-carnitine has been drawn to an interest. L-carnitine is amino acids derivative, it occurs virtually in cells of higher animals, some microorganisms and plants. L-carnitine has since become firmly established essential nutrient for both human and animal. L-carnitine plays a key role in energy provision in the cells. As co-factor L-carnitine catalyses the transport of activated fatty acids through the mitochondrial membrane into beta-oxidation. Thus in the case of L-carnitine deficiency the oxidation of fatty acids is disordered. Besides, L-carnitine acts as buffer substance for intermediate storage or transport of activated short-chain fatty acids in and out of cells organelles and cytosol, co-factor in generation of energy from medium-chain fatty acids, pyruvate and ketone bodies, protector and modulator of cell membranes, regulator in glucogenesis and ketogenesis. L-carnitine supplementation to the various animals' species was studied. The trials with racing horses, dairy cows, broilers, laying hens, suckling, weaning and fattening piglets, sows and boars were carried out. Concerning the trials endogenous biosynthesis, together with the uptake of L-carnitine from feed is sufficient to cover normal requirements. However neonates, animals in conditions of stress, higher performance and sustained exertion or those which are feeded with diets low in carnitine and rich in fat the additional provision of L-carnitine is required. To view L-carnitine chemistry, biological function, biosynthesis, absorption, transport, catabolism and its influence on various animals' species parameters, over forty foreign literature sources have been studied and passed in review.

**Keywords:** L-carnitine, fatty acids oxidation, metabolic function, effects on animals' physiological parameters.