

## VITAMIN C: THE KNOWN AND THE UNKNOWN

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**Introduction.** Vitamin C (Ascorbic Acid), the antiscorbutic vitamin, cannot be synthesized by humans and other primates, and has to be obtained from diet. Ascorbic acid is an electron donor and acts as a cofactor for fifteen mammalian enzymes. Two sodium-dependent transporters are specific for ascorbic acid, and its oxidation product dehydroascorbic acid is transported by glucose transporters. Ascorbic acid is differentially accumulated by most tissues and body fluids. Plasma and tissue vitamin C concentrations are dependent on amount consumed, bioavailability, renal excretion, and utilization. To be biologically meaningful or to be clinically relevant, *in vitro* and *in vivo* studies of vitamin C actions have to take into account physiologic concentrations of the vitamin.

**Aim.** Vitamin C function remains largely unexplored. The purpose of this work was to analyze the scientific literature and summarize the data on the participation of ascorbic acid in the regulation of metabolic processes in the body.

**Materials and methods.** Research methods are descriptive (data processing) and theoretical (analysis, generalization, comparison, conclusions) were determined by its purpose and objectives.

**Results and discussion.** Vitamin C is by its chemical nature an electron donor, commonly called an antioxidant. However the widely held assumption that vitamin C has an important role as an antioxidant in humans is unproven. The most well characterized actions are those as an enzyme cofactor, including those in which it is an actual cosubstrate. Ascorbate acts as an electron donor for fifteen mammalian enzymes. These include two monooxygenases, twelve dioxygenases and one amine oxidase. Most enzyme reactions where vitamin C acts as a cofactor require relatively low concentrations of the vitamin in comparison to the normal *in vivo* concentration. It is possible that as consequence of vitamin C transporter activity, many tissues contain significant amounts of vitamin C even in the face of deficiency, though such measurements in humans are not available.

**Conclusions.** For years, the potential beneficial effect of vitamin C on human health beyond that of preventing scurvy has been subject of much controversy. Vitamin C plays a pivotal role in body-building process and in disease prevention. Vitamin C alone or in combinations with drugs produced cancer-suppressive effects which involved redox, immune, and epigenetic mechanisms.

## MEDICAL COMPLIANCE. ANALYSIS OF TRENDS IN RESEARCH

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**Introduction.** Compliance is extremely important for the success of any treatment. This fact explains the increased attention paid to scientific research in this direction. The results presented in numerous publications provide recommendations on how to improve compliance in the patient-doctor-pharmacist interaction chain and indicate the relevance of studying compliance issues.

**Aim.** The aim of our study is to analyze the compliance effect on the development of pathological processes, the development of new pharmacological correction schemes, clinical trials, and vaccination processes.