

## **CO-ENZYME Q10 AN ALTERNATIVE WHEN TREATING CANCER.**

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Cancer known medically as a malignant neoplasm is a broad group of diseases involving unregulated cell growth. In cancer, cells divide and grow uncontrollably, forming malignant tumors, and invading nearby parts of the body. The cancer may also spread to more distant parts of the body through the lymphatic system or bloodstream. Not all tumors are cancerous; benign tumors do not invade neighboring tissues and do not spread throughout the body. There are over 200 different known types of cancer that affect humans.

Cancer can be detected in a number of ways, including the presence of certain signs and symptoms, screening tests, or medical imaging. Once a possible cancer is detected it is diagnosed by microscopic examination of a tissue sample. Cancer is usually treated with chemotherapy, radiation therapy and surgery.

Adverse effects of these treatments on our vital organs lead to sleeplessness, pain, loss of life and chances of survival are slim. These effects made scientists look for alternative treatment to protect humans from adverse effects of cancer treatment and CoQ10, Co-Q10, vitamin Q10 was suggested as a new means.

CoQ<sub>10</sub> is a substance made naturally in the body and found in most tissues. It is used by the body to help to produce energy within the mitochondria — "the energy power house" of body cells. It can also be artificially made in the laboratory and sold as a dietary supplement. As an antioxidant, it helps protect cells from oxygen damage. It is found in meats, fish and many foods.

Coenzyme Q10 was first identified in 1957. Particularly high amounts were found in heart tissue, which is why researchers became interested in the connection between CoQ10 and heart disease. Studies in the 1960s found a possible link between cancer (especially breast cancer) and lower levels of CoQ10 in the blood. However,

CoQ10 levels naturally drop as people get older, which is also when people are more likely to get cancer. No normal range of CoQ10 in the blood has been defined.

Some laboratory studies suggested that CoQ10 might have a role as an immune system booster. Since then, researchers have been testing CoQ10 supplements for treating heart disease, cancer, and other conditions. Still, no firm conclusions have been reached about its usefulness in treating any disease and it's given in form of tablets, capsules or oil-based gel capsules and water soluble preparations.

Ubiquinone protects normal tissues from free radical damage and oxidation caused by certain cancer treatments. Production of free radicals regulate cell growth in humans is a function of the body also sometimes killing bacteria, fungi. Other potential benefits of CoQ<sub>10</sub> include treatment of gum disease, muscular dystrophy, migraines, renal disease and early Parkinson's disease. There is evidence Co Q<sub>10</sub> may improve function in athletic performance.

Doses may range from 60mg to 390mg per day. The artificial form may be absorbed better if eaten with a meal high in fat or if the supplement is made with natural Vitamin E. It may take 1-4 weeks to notice results.

Side effects are rare, but have been reported in high doses (600-1200mg/day). Side effects include heartburn, nausea, headaches, fatigue, dizziness, sensitivity to light, irritability, involuntary movements, diarrhea (mild) and skin reactions.

Finally, because CoQ10 is a strong antioxidant; there are theoretical reasons to suspect that it might interfere with the effectiveness of chemotherapy and radiation therapy. At least one study showed that when mice with implanted human lung cancer were treated with radiation and given CoQ10, they had less slowdown in tumor growth than mice that were treated with radiation alone. This question has not been adequately studied in human clinical trials. CoQ10 did not affect the ability of doxorubicin (a chemotherapy drug) to kill breast cancer cells in laboratory dishes, but its effect on chemotherapy in patients remains uncertain.