

# [Cancer a nobel prize winner in collaboration](https://assignbuster.com/cancer-a-nobel-prize-winner-in-collaboration/)

Cancer treatments such aschemotherapy or radiation therapy can be detrimental on the patient due totheir high cost, ineffectiveness or side effects. However, multiple studieshave been conducted and researchers are coming to the conclusion that theremight be a way to enhance and make these treatments work better. These studiesare testing the benefits of high dose of intravenous vitamin C when given incombination with standard treatment and how it affects patients’ overallhealth.  High dose vitamin C hasbeen a controversial topic in cancer treatment since the 1970s. Physicians havetried using vitamin C also known as ascorbate or ascorbic acid for years, butit has had conflicting results in trials.

It all began when Linus Pauling aNobel Prize winner in collaboration with Ewan Cameron a surgeon at the time, came to the conclusion that high dose of vitamin C (typically 10g/day by intravenousinfusion for about 10 days and orally afterwards) improved the average survivalof advanced cancer patients and for a small group of patients, survival wasincreased to up to 20 times longer than that of controls (2, 3). Despite Pauling’sfindings, the Mayo Clinic disagreed with these findings concluding that highdose of Vitamin C when given orally was not effective when compared to aplacebo in treating cancer (5, 6). Facing these controversialfindings, due to a growing need for more effective cancer treatments, high doseintravenous vitamin C is becoming part of more thorough studies. Scientists andoncologists are conducting more studies to determine if high dose intravenousvitamin C can become part of cancer treatment regimen. Vitamin C works as both acofactor in the body and an antioxidant.

Vitamin C stimulates collagenformation, increases production of hydrogen peroxide production, inhibitsangiogenesis and enhances and strengthen the immune system. Due to a higherlevel of oxidative stress inside the cancer cells’ mitochondria, these cellscan lead to production of redox active iron molecules. When these moleculesreact with vitamin C , hydrogen peroxide is formed as well as hydrogen peroxide–derived free radicals.

It is believed that these free radicals cause cancer celldeath by damaging the cells’ DNA. Vitamin C damages cancer cells that are undera high level of stress, and since normal healthy cells don’t have the samelevel of stress, vitamin C does not have the same toxic effect. Overall, vitamin C has reported to have the lowest toxicity of all vitamins. Most commonside effects are diarrhea, dry mouth, and gas. (1, 4). In conclusion, intravenous vitamin C has shown to improve the quality of life of cancerpatients, improve response to radiation therapy, lessen the side effects ofchemotherapy as well as reduce inflammation (7).

Much more studies are needed, however if Vitamin C proves to be effective in future clinical trials, the newcancer treatment might be more cost effective compared to the chemotherapeuticagents in use