

# Antioxidants & Treatment



## *Question:*

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Is it safe to take antioxidant supplements during chemotherapy and radiation therapy? Does this concern extend to foods containing high levels of antioxidants, such as an orange or orange juice, which contain a high amount of vitamin C?

## *Answer:*

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Antioxidant supplementation during conventional chemotherapy and radiation therapy is a controversial subject. Some studies suggest that taking antioxidant supplements during treatment may be beneficial; however, there are just as many studies that tell us this may be harmful. The scientific evidence on this topic is not strongly for or against taking antioxidant supplements during cancer treatment.

It is possible that taking antioxidant supplements during treatment can protect normal tissues from the damaging side effects of treatments and may improve tumor response and patient survival (1-3). On the other hand, some studies indicate that taking antioxidant supplements may interfere with chemotherapy and radiation therapy by reducing their effectiveness. It is possible that antioxidants may protect tumor cells, in addition to healthy cells, from the oxidative damage intentionally caused by conventional treatments. This, in turn, may reduce the effectiveness of the treatments (4-7).

More research is needed to definitively settle the question of whether taking antioxidants during cancer treatment is harmful or helpful. It is very likely that antioxidants during cancer treatment may be beneficial for some people, yet harmful for others (8,9). No two people, or cancers, are the same. A 2016 systematic review found that while the answer remains unclear as to whether or not antioxidants alter anti-tumor effects during radiotherapy and during some types of chemotherapy, they note that this is not the case for smokers. They found that individuals who smoked and consumed a strong antioxidant supplement during radiotherapy increased their chances of recurrence and mortality when compared to those who did not smoke (10).

There is no evidence to support that antioxidant-rich, whole foods or drinks should be avoided during cancer therapy. It is believed that the level of any one particular antioxidant in a whole food is unlikely to interfere with treatment. The same cannot be said about high-dose antioxidant supplements.

Please inform all members of your oncology team if you do decide to take any vitamin, mineral, and/or herbal supplements during cancer treatment. Your doctor, dietitian, and pharmacist can help you evaluate the quality of the advice, articles, or information from books, from the Internet, or from other practitioners. The most important thing is to engage your health care team to help you make the best choice for you.

Supplements that have been independently tested and certified by a non-profit program, such as NSF® International or USP®, are likely to be of high quality. These programs test supplements for content, purity, and freedom from contaminants. An NSF or USP seal helps you know that products contain what their labels say they contain, disintegrate properly in the body, do not contain any contaminants, and have been manufactured in accordance with current Good Manufacturing Practices (GMP) in a GMP-certified facility.

### *References, Websites, and Resources:*

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***The original question and answer were generously donated by Diana Dyer, MS, RD a cancer survivor, registered dietitian, organic garlic farmer, and the author of "A Dietitian's Cancer Story: Information & Inspiration for Recovery & Healing from a 3-time Cancer Survivor."***

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