

## THE GLUTATHIONE/ANTIOXIDANT CANCER PARADOX

A Clinical Study published in **Anticancer Research**, showed a nutraceutical supplement, while synthesizing GSH in healthy cells - selectively *lowered cancer cells of their glutathione*, thus rendering them more vulnerable to radiation and chemotherapy. Paradoxically, the nutraceutical – while raising GSH levels in healthy cells – triggered the opposite reaction in cancer cells.

A research team from Saskatchewan gave toxic doses of chemotherapy to patients with *advanced progressive cancer* – plus raised their GSH levels.

They hoped that raising GSH in normal cells only – and their results bear them out. *More than half the patients* showed either improvement or stabilization. These findings are collaborated with other studies showing cancer patients were more likely to respond to chemotherapy and radiation therapy – when their GSH levels were raised.

*The Cancer Letter* reports, Spanish researchers found that elevated GSH levels induced a swift and direct apoptosis mechanism in tumor cells, enhancing the efficiency of chemotherapy.

## FAR FEWER SIDE EFFECTS

In addition, patients with higher GSH levels in normal cells, experience *far fewer* side effects from chemotherapy and radiation therapy.

Radiotherapists studying the protective role of GSH have linked patients who raised their GSH levels before undergoing treatment – with having been 'protected' from radiation burns and greater tolerance to therapy.

A large Scottish study of one hundred and fifty women with cancer, being treated with standard chemotherapy cisplatin, were supplemented to raise their GSH levels.

They were compared to a second group without raised GSH levels.

The first group, who raised their GSH, had statistically less:

- depression
- vomiting
- hair loss
- shortness of breath
- neurotoxicity
- wasting

In addition, their mental concentration and kidney function improved measurably, and there was a distinct trend toward a healthier outcome.

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