

Healthy diet may avert nutritional problems in head, neck cancer patients

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At least 90 percent of head and neck cancer patients develop symptoms that affect their ability or desire to eat, because of either the tumor itself or the surgery or radiation used to treat it. These problems, called

nutrition impact symptoms, have wide-ranging negative effects on patients' physical and mental health and quality of life.

However, patients who eat foods high in antioxidants and other micronutrients prior to diagnosis may reduce their risks of developing chronic nutrition impact symptoms up to one year after being diagnosed with head or neck [cancer](#), according to a recent study led by researchers at the University of Illinois.

The scientists analyzed the [dietary patterns](#) of 336 adults with newly diagnosed head and neck cancers and these patients' problems with eating, swallowing and inflammation of the digestive tract. This painful inflammatory condition, called mucositis, is a common side effect of radiation treatment and chemotherapy.

The mitigating effects of a healthy diet were particularly significant in people who had never smoked and in patients who were underweight or [normal weight](#) at diagnosis, who often experience the greatest eating and digestive problems during treatment, said Sylvia L. Crowder, the paper's first author.

Crowder is a research fellow in the Cancer Scholars for Translational and Applied Research program, a collaborative initiative of the U. of I. and Carle Foundation Hospital in Urbana, Illinois.

"While previous work has established that the presence of nutrition impact symptoms is associated with decreased [food intake](#) and weight loss, no studies have examined how pre-treatment dietary intake may influence the presence of these symptoms later in the course of the disease," Crowder said.

In the early 2000s, researchers hypothesized that consuming antioxidant supplements might protect patients' normal cells from damage during

radiotherapy, enabling them to better tolerate treatment and higher dosages.

Accordingly, prior research by Anna E. Arthur, a professor of [food science](#) and human nutrition at the U. of I. and the current study's corresponding author, indicated that eating a diet of whole foods abundant in antioxidants and phytochemicals improved recurrence and survival rates in head and [neck cancer](#) patients.

Like Arthur's prior research, the new study was conducted with patients of the University of Michigan Head and Neck Specialized Program of Excellence.

Data on patients' tumor sites, stages and treatment were obtained from their medical records. More than half of these patients had stage 4 tumors at diagnosis.

Prior to starting cancer treatment and again one year post-diagnosis, the patients completed a questionnaire on their diet, tobacco and alcohol use, and quality of life. Patients reported whether they experienced any of seven nutrition impact symptoms—such as pain or difficulty chewing, tasting or swallowing foods and liquids—and rated on a five-point scale how bothersome each [symptom](#) was.

In analyzing the patients' eating habits, the scientists found that they followed either of two major dietary patterns—the Western pattern, which included high amounts of red and processed meats, fried foods and sugar; or the prudent pattern, which included healthier fare such as fruits and vegetables, fish and whole grains.

Patients who ate healthier at diagnosis reported fewer problems with chewing, swallowing and mucositis one year after treatment, the scientists found.

"While the origin and development of nutrition impact symptoms are complex and varied, they generally share one common mechanism—cell damage due to inflammation," said Arthur, who is also an oncology dietitian with the Carle Cancer Center. "The prudent dietary pattern has the potential to reduce inflammation and affect the biological processes involved in the pathogenesis of these symptoms."

The scientists hypothesized that some patients may begin eating healthier after being diagnosed with cancer, potentially counteracting the pro-inflammatory effects of their previous dietary habits.

Reverse causation was possible too, they hypothesized—patients' lack of symptoms may have enabled them to consume a broader range of foods, including healthier whole foods, before their cancer was discovered.

More information: Sylvia L. Crowder et al. Pretreatment Dietary Patterns Are Associated with the Presence of Nutrition Impact Symptoms 1 Year after Diagnosis in Patients with Head and Neck Cancer, *Cancer Epidemiology Biomarkers & Prevention* (2019). [DOI: 10.1158/1055-9965.EPI-19-0128](https://doi.org/10.1158/1055-9965.EPI-19-0128)

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