

Study finds acupuncture can prevent radiation-induced chronic dry mouth

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When given alongside radiation therapy for head and neck cancer, acupuncture has shown for the first time to reduce the debilitating side effect of xerostomia, according to new research from The University of Texas MD Anderson Cancer Center and Fudan University Shanghai Cancer Center.

The study, published in the journal *Cancer*, reported findings from the first [randomized controlled trial](#) of acupuncture for the prevention of xerostomia.

Xerostomia, or severe dry mouth, is characterized by reduced salivary flow, which commonly affects patients receiving radiotherapy for [head and neck cancer](#). Most current treatments are palliative and offer limited benefit, according to Lorenzo Cohen, Ph.D., professor in MD Anderson's Departments of General Oncology and Behavioral Science and director of the Integrative Medicine Program.

The condition impairs quality of life for patients, as it creates difficulties eating, speaking and sleeping, while also increasing the risk for [oral infections](#).

"There have been a number of small studies examining the benefits of acupuncture after xerostomia develops, but no one previously examined if it could prevent xerostomia," said Cohen, who is also the study's principal investigator. "We found incorporating acupuncture alongside radiotherapy diminished the incidence and severity of this side effect."

Cohen and his colleagues examined 86 patients with nasopharyngeal carcinoma, treated at Fudan University Shanghai [Cancer Center](#). Forty patients were randomized to acupuncture and 46 to the standard of care. Those in the treatment arm received acupuncture therapy three times per week during the seven-week course of radiotherapy. Patients were evaluated before radiotherapy, weekly during radiotherapy, and then again one and six months later.

The results were based on data derived from two self-report questionnaires and measuring actual saliva flow. Patients completed the Xerostomia Questionnaire (XQ), an eight-item survey which assessed symptoms consistent with the condition. XQ scores under 30 corresponded to mild or no symptoms of xerostomia.

The second measure, MD Anderson Symptom Inventory Head and Neck (MDASI-HN), ranked the severity of cancer-related symptoms, other than xerostomia, and their interference with quality of life. The team also measured saliva flow rates using standardized sialometry collection techniques.

Benefits Noticed Quickly

"What was quite remarkable was that we started to see group differences as early as three weeks into radiotherapy for the development of xerostomia, cancer-related symptoms that interfere with quality of life, and saliva flow rates - an important objective measure," said Zhiqiang Meng, M.D., Ph.D., co-principle investigator of the study and deputy chair of the Department of Integrative Oncology, Fudan University Shanghai Cancer Center.

The largest group differences in XQ scores were seen by the end of radiotherapy, but the differences persisted over time. By one month after the end of radiotherapy, 54.3 percent of the acupuncture group reported

XQ scores greater than 30, compared to the control group at 86.1 percent. By six months after radiotherapy, the numbers dropped to 24.1 percent in the acupuncture group and 63.6 percent of the control group still reporting symptoms of xerostomia. Saliva flow rates were also greater in the acupuncture group, starting at three weeks into radiotherapy and persisting through the one and six month follow-up.

Acupuncture also helped cancer-related symptoms, other than [xerostomia](#), as measured by the MDASI-HN questionnaire, with differences that emerged in week three and continued through six months.

"The medical implications are quite profound in terms of quality of life, because while chronic dry mouth may sound benign, it has a significant impact on sleeping, eating and speaking," Cohen said. "Without saliva, there can be an increase in microbial growth, possible bone infection and irreversible nutritional deficits."

Additional studies are needed to determine the mechanisms for the benefits of acupuncture, and while the study didn't examine this issue, Cohen said it may have an impact on local blood flux, specifically at the parotid gland.

Further research is planned, including a large trial conducted at MD Anderson in collaboration with Fudan University Shanghai Cancer Center. Both centers will enroll 150 patients undergoing [radiotherapy](#) for head and neck cancer: 50 will receive acupuncture, 50 sham acupuncture and 50 will be enrolled in a control group. Researchers will also examine saliva constituents and a number of other measures to better determine the mechanisms of [acupuncture](#).

Provided by University of Texas M. D. Anderson Cancer Center

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