

# Avocados may help prevent oral cancer

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Nutrients taken from avocados are able to thwart oral cancer cells, killing some and preventing pre-cancerous cells from developing into actual cancers, according to researchers at Ohio State University.

Researchers found that extracts from Hass avocados kill or stop the growth of pre-cancerous cells that lead to oral cancer. Hass avocados are year-round fruits known for their distinctive bumpy skin that turns from green to purplish-black as they ripen.

While there are more than 500 varieties of avocados grown worldwide, Hass avocados are the most readily available at supermarkets nationwide. Similar research has not been conducted on other varieties of avocados.

The findings are published online in the journal *Seminars in Cancer Biology*.

Lead author Steven M. D'Ambrosio, a member of the molecular carcinogenesis and chemoprevention program at Ohio State's Comprehensive Cancer Center, also wrote an accompanying editorial for the journal, discussing the cancer-fighting potential of fruits and vegetables. D'Ambrosio collaborated with Haiming Ding in Ohio State's College of Medicine.

Studies have long associated the consumption of fruits and vegetables with a reduced risk for various types of human cancer. The protective effect is attributed to the high levels of phytonutrients or phytochemicals – plant compounds thought to have health-protecting qualities – that are

often found in dark colored fruits and vegetables.

"As far as we know, this is the first study of avocados and oral cancer," says D'Ambrosio. "We think these phytochemicals either stop the growth of precancerous cells in the body or they kill the precancerous cells without affecting normal cells. Our study focuses on oral cancer, but the findings might have implications for other types of cancer. These are preliminary findings, and more research is needed."

D'Ambrosio, who collaborated with researchers in Ohio State's College of Pharmacy, found that phytochemicals extracted from avocados target multiple signaling pathways and increase the amount of reactive oxygen within the cells, leading to cell death in pre-cancerous cell lines. But the phytochemicals did not harm normal cells.

"These studies suggest that individual and a combination of phytochemicals from the avocado fruit may offer an advantageous dietary strategy in cancer prevention," says Ding, who is a member of the division of radiobiology, department of radiology.

Avocados are chock-full of beneficial antioxidants and phytonutrients, including vitamin C, folate, vitamin E, fiber and unsaturated fats. They are naturally sodium-free, contain no trans fats and are low in saturated fat, making them a healthy addition to any diet, D'Ambrosio says.

"The future is ripe for identifying fruits and vegetables and individual phytonutrients with cancer preventing activity," writes D'Ambrosio in the journal's editorial. "As we identify the molecular mechanisms and targets by which individual phytonutrients prevent cancer, we may be able to improve upon nature by formulating phytonutrient cocktails for specific cancers and individual susceptibility and risk."

Source: Ohio State University

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