

Oral cancer detection by dentists is significantly on the rise

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Dr. Magalhaes in his lab with Dr. Eymael. Credit: Jeff Comber, University of Toronto Faculty of Dentistry

After examining data gathered over an 11-year period in a first-of-its-kind provincial study, University of Toronto clinician-scientist Marco

Magalhaes has one vital message: dentists in Ontario are detecting more cases of oral cancer and pre-cancer than ever before—and it's saving lives.

Magalhaes, lead author of the study that appears in the *Journal of the American Dental Association*, is an assistant professor at the University of Toronto's Faculty of Dentistry, and one of the oral pathologists at the Toronto Oral Pathology Service (TOPS). Operated by the Faculty of Dentistry, TOPS is one of the largest oral pathology services in Canada, which provides comprehensive evaluation of biopsy specimens—the overwhelming majority of which are submitted by dentists.

For the study, Magalhaes looked at 63,483 biopsies submitted to the service between 2005 and 2015. "We wanted to look at the scope of oral biopsies performed by dentists, what they're seeing in practice," says Magalhaes of the study's design. The biopsy data from TOPS were then compared to numbers collected by the Ontario Cancer registry, Cancer Care Ontario, which tracks all reported cancers in the province.

Surprisingly, the data showed a steep rise in the overall numbers of carcinomas (oral cancers) and dysplasia (pre-[cancerous lesions](#)) detected by dentists.

Overall, 828 cases of oral [cancer](#) were diagnosed by the U of T oral pathology service between 2005 to 2015, along with 2,679 premalignant lesions. But over time, the percentage of oral cancer detection by oral health professionals rose significantly. In 2005, only 56 cases of oral cancer and 99 cases of oral epithelial dysplasia were detected through biopsy.

By 2015, though, the number of cancers detected through the biopsy service had nearly doubled, rising to 103 cases of oral cancer. Dysplasia cases more than tripled from 2005, rising to 374 cases.

"These numbers are important, because the number of diagnosed cases outpaced both the rise in population in Ontario and the increased number of dentists licensed in Ontario," says Magalhaes.

In fact, the number of cases detected at TOPS was significantly higher than the overall increase of oral cancers recorded in the province over that same period—just 30 per cent—compared to the 180 per cent rise at TOPS. Cancer Care Ontario identified a total of 9,045 cases of oral cancer between 2005 and 2015.

So what does it all mean? For one, argues Magalhaes, dentists in Ontario are playing an important role in detecting the deadly disease.

And more comprehensive training and continuing [education programs](#) for oral health professionals may be behind the dramatic rise in detection rates. While advanced oral cancers are fairly easy to detect, says Magalhaes, premalignant lesions and early cancer can be easy to miss without specialized training. Early detection of oral cancers, meanwhile, is "critical" to [survival rates](#), he explains.

Calling the Toronto Oral Pathology service "extraordinary," Michael Glogauer, acting chief dentist at the Princess Margaret Cancer Centre and professor at the University of Toronto's Faculty of Dentistry, agrees that strong training is likely playing a role in the higher detection rates.

"The focus on oral cancer education through the universities and continuing education in the area of cancer has led to the increased surveillance by dentists, and validates the focus that the dentists in this province are placing on this important health initiative," says Glogauer.

Tracking precancerous links

An added dimension of the data collected in this study is that researchers

may learn to pinpoint which—and how many—precancerous lesions will, over time, turn cancerous. While the data of the study provide evidence that TOPS was involved in the diagnosis of approximately 10 per cent of all oral cancers in the province, it also demonstrates a dramatic increase in the number of precancerous lesions identified by these health care providers.

Importantly, the provincial cancer agency does not keep statistical data on precancerous lesions, making the TOPS biopsy data especially relevant in the hunt to discover which premalignant lesions will become cancers.

"This is the first time that we have assessed dysplasia detected by dentists over such a long period of time," says Magalhaes.

Early detection is key

Oral cancer survival rates have remained steady over the past several decades. What that means, says Magalhaes, is that "advancements in treatment have minimally improved survival rates." Yet, treated in its early stages, patients with oral cancer have the highest survival rates: around 80 per cent over five years. That statistic drops to approximately 30 per cent over five years when the cancer is detected at an advanced stage.

"This supports the fact that early detection really is the most important step here," Magalhaes adds. And, as the study suggests, regular check-ups at the [dentist](#)'s office may be our best line of defense.

More information: Aryan Abadeh et al, Increase in detection of oral cancer and precursor lesions by dentists, *The Journal of the American Dental Association* (2019). [DOI: 10.1016/j.adaj.2019.01.026](https://doi.org/10.1016/j.adaj.2019.01.026)

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