

## NYU ORAL CANCER CENTER:

# A Unique Resource Dedicated to Oral Precancer and Cancer

Oral cancer is an ominous diagnosis that 50,000 Americans confront each year. The symptoms of this disease are debilitating and five-year survival after diagnosis is approximately 60 percent. Improvements in oral cancer treatment necessitate well-funded and meticulously designed scientific studies.

Brian Schmidt, DDS, MD, PhD, founded the New York University Oral Cancer Center (NYUOCC) at NYU Dentistry nearly a decade ago to improve medical care for oral cancer patients. The NYUOCC is the only center of its kind in the nation; patients receive world class medical treatment for oral cancer and pioneering research is conducted to improve treatment. NYUOCC faculty include researchers and clinical experts in cancer biology, oncology, pain, neuroscience, and genomics from around the globe. Clinical studies (research conducted with patient volunteers) and translational studies (research that employs findings from basic science to improve clinical treatment) are integral to the research approach.

### **Pain Management**

Pain management is a critical unmet need of patients with oral cancer. These patients endure severe chronic pain during everyday functions such as chewing and speaking. Dr. Schmidt is unable to adequately manage oral cancer pain with opioid drugs — the current standard of care for treating oral cancer pain — because the efficacy of these drugs diminishes as patients develop opioid tolerance. Moreover, the side effects of these drugs severely degrade quality of life.

As a separate issue, there is a national epidemic of opioid misuse and addiction. Approximately 500,000 Americans have died from opioid overdose over the last two decades. Although many of these deaths are caused by illegal opiates such as heroin, the cycle of addiction and death is often initiated by drug diversion — use of prescription drugs by individuals other than the person for whom they were prescribed.

In addition to developing more effective, non-opioid treatment for cancer pain, NYUOCC researchers have established gene-targeted strategies for pain relief and identified biomarkers of oral cancer metastasis. They recently identified cancer-secreted mediators responsible for oral cancer pain; these mediators also regulate cancer growth. They now seek to manipulate the action of these mediators to improve oral cancer treatment.

### **Advancing Science**

Since its founding, the NYUOCC has received over \$31 million in funding from federal grants and foundation support for research related to oral cancer and chronic pain. In 2020, NYU ranked third in the nation for research funding garnered from the National Institutes of Health (NIH), and we are the most well-funded private dental school with regard to NIH research support.

These funds support a gamut of clinical and translational research. Five full-time faculty undertake grant-funded research on oral cancer and oral cancer pain. They include Yi Ye, MS, PhD, MBA; Donna Albertson, PhD; Aditi Bhattacharya, BDS, MDS, PhD; and Nigel Bunnnett, PhD. All patients seen at NYUOCC can be screened for enrollment in clinical studies. Scores of oral cancer patients have volunteered to participate in research; the Center collects samples from a majority of patients who receive oral cancer treatment in its facilities. These samples are scrutinized at the cellular, molecular, and genomic levels in laboratories located within the same building. Analysis of laboratory findings obtained in preclinical studies can subsequently lead to clinical trials at the NYU Bluestone Center for Clinical Research, which Dr. Schmidt also directs. Through their research efforts, NYUOCC clinicians and scientists continue to chip away at the challenges that ravage and shorten the lives of patients with oral cancer. Ultimately, this work will yield improvements in treatment for cancer and cancer symptoms.

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