

About Daniel Faden, MD, FACS

Dr. Daniel Faden is a board-certified subspecialist in head and neck surgical oncology and a leading scientist in head and neck cancer. His clinical practice focuses on providing comprehensive care for patients with benign and malignant head and neck tumors. In his laboratory, Dr. Faden oversees a team of scientists and trainees who are developing and applying cutting-edge diagnostic blood tests for cancer, called liquid biopsies.

About the Faden Laboratory

The Faden Laboratory was established in 2020 as part of the Mike Toth Head and Neck Cancer Research Center at Mass Eye and Ear. It is home to some of the world's leading experts in the development and use of liquid biopsies to detect HPV-associated head and neck cancers, and has grown into one of the largest surgeon-run laboratories at Mass Eye and Ear.



Follow us on Twitter @fadenlab or learn more by visiting faden-lab.meei.harvard.edu.

To support Dr. Faden's research, please contact:

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Give Today!



The Faden Laboratory

Mike Toth Head and Neck Cancer Research Center

Developing liquid biopsies to better detect, diagnose and monitor head and neck cancers

The Faden Laboratory

The leading experts in HPV-associated cancer liquid biopsies

About HPV-Associated Head and Neck Cancer

Head and neck cancer is the 6th most common cancer worldwide. Rates of head and neck cancer caused by human papillomavirus (HPV) have dramatically increased over the last decade. HPV-associated head and neck cancers have surpassed cervical cancer as the most common HPV cancers in the United States, accounting for approximately 90 percent of throat and back of mouth cancers seen at Mass Eye and Ear.

Traditional approaches to detecting, diagnosing and monitoring HPV-associated head and neck cancer are fraught with challenges. Because there are no screening tests for this type of cancer, most cancers are only detected once they metastasize to lymph nodes in the neck. Treatments often cause severe side effects and are nonpersonalized, leaving some patients cancer free but with lifelong side effects, while others have their cancers recur.

Liquid Biopsy: Transforming Care Through Bold Innovation

Led by Dr. Daniel Faden, scientists at the Faden Laboratory developed one of the first and most reliable blood tests for HPV-associated cancers. Studies have shown that this liquid biopsy more accurately diagnoses HPV-associated head and neck cancer than standard of care approaches, and potentially faster and with fewer costs. Due to its ability to detect fragments of cancer DNA in blood, this liquid biopsy can identify if there is remaining cancer after surgery or other treatments, monitor a patient's response to treatment in real time and discover recurrence months to years before clinical detection—all through a single tube of blood. The team has now developed a second-generation liquid biopsy, called HPV-DeepSeek, that is 30 times more sensitive than the original.



Using this test, they have shown that HPV-associated head and neck cancers can be detected in the blood many years prior to cancer diagnosis, raising hope for a reliable screening blood test in the future.

Bringing Cutting-Edge Research From Bench to Bedside

Right now, there is an incredible opportunity to partner with the Faden Laboratory to develop newer, even more powerful blood-based diagnostics and deliver them to patients as soon as possible.

Philanthropy from grateful patients and friends accelerates our research and gives us the ability to pursue big and bold ideas, such as:

- **Develop a first-of-its-kind screening test for head and neck cancer** that could lead to improved survival rates and less toxic and debilitating treatments for patients
- **Discover completely new ways to detect cancer** in blood samples, leading the field of early cancer detection through high-risk, high-reward innovation
- **Conduct clinical trials** to show how HPV liquid biopsies can be used to personalize and tailor treatment for patients, as well as demonstrate and measure the impact of this technology on patients' lives

How You Can Help

We hope you will consider a gift to support the work of the Faden Laboratory. Together, we can improve and save the lives of patients with head and neck cancer here in Boston and around the world. We welcome visitors to the Faden Laboratory to see our work in action. Please contact us to schedule a tour or to discuss these projects in more detail.