

'Flash freeze' therapy being used to treat precancerous and cancerous conditions

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Sadia Benzaquen, MD, interventional pulmonologist.

A multidisciplinary team of UC Health specialists is using a new technology to flash freeze tissue surfaces in the lungs and esophagus and treat patients with small tumors or dysplasia which could lead to cancer.

Sadia Benzaquen, MD, assistant professor in the division of pulmonary, critical care and [sleep medicine](#) at the University of Cincinnati College of Medicine and UC Health director of interventional pulmonology, and Valerie Williams, MD, assistant professor in the department of surgery at UC and a UC Health thoracic surgeon—both of which are members

of the UC Cancer Institute's Comprehensive Lung Cancer Center—are using truFreeze (a cryotherapy technique) to freeze tissue in the lungs and esophagus that could be precancerous or cancerous.

"This sort of therapy is useful for patients who are not candidates for other conventional treatment modalities like surgery, chemotherapy or [radiation therapy](#)," Williams says.

Cryotherapy uses [liquid nitrogen](#) (-196° C) to freeze and eliminate tissue that could be harmful to the patient; the nitrogen is delivered via catheter. During this process, cells are selectively destroyed while the underlying tissue structure is preserved so that healthy tissue can re-grow.

Williams says the treatment is performed every six to eight weeks for patients with high-grade dysplasia or esophageal cancers which can develop in patients with Barrett's esophagus—a disorder in which the lining of the esophagus is damaged by [stomach acid](#) and changed to a lining similar to that of the stomach.

On average patients need two to three treatment sessions. This therapy helps replace the entire abnormal lining of the esophagus with normal esophageal lining.

Benzaquen is using this technology to remove [cancerous tumors](#) in the airway. These patients have severe underlying [obstructive lung disease](#), and it is often difficult to lower the [oxygen delivery](#) needed for use of a laser. Benzaquen says this is another option for controlling bleeding and removal of tissue without the restriction of lowering oxygen flow.

"Most of our patients are so sick that it is really difficult to wean the oxygen to lower levels to be able to use the laser, argon plasma coagulation, which involves use of a jet of plasma directed through a

probe, or cautery," he says.

"The addition of the cryotherapy technology at UC adds to the current endoscopic and surgical options we offer to provide the full spectrum of treatment options close to home for those with esophageal cancer and disease," Williams adds.

Provided by University of Cincinnati

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