



When you have a spot, or a nodule, on your lung, it's important to learn as much as possible about it. Fortunately, now, our physicians have a minimally invasive option at UMC for finding out what your nodule is and what, if anything needs to be done about it.

**University Medical Center's  
Electromagnetic Navigation  
Bronchoscopy™ Procedure**  
(also known as an ENB procedure)



UMC's ENB™ procedures provide a minimally invasive approach to accessing difficult-to-reach areas of the lung, aiding in the diagnosis and management of lung disease.

This brochure will help answer questions you may have about UMC's ENB™ procedure. After reading it, if you have other concerns please let your physician know.

**University Medical Center's  
Electromagnetic Navigation Bronchoscopy™**  
For the Management and Diagnosis  
of Lung Disease

## What is a lung nodule?

A lung nodule is a spot in the lungs that can be seen with a chest X-ray or CAT scan. It is usually discovered not by symptoms a patient is experiencing, but during the course of conducting another test. More than half of all lung nodules are noncancerous (benign)~ Lung nodules have many causes, including old scars and infections, exposure to certain chemicals, and smoking. The only way to find out what type of nodule you have, and if any sort of treatment is necessary, is to take a tissue sample, or biopsy, and examine it under a microscope.

## How does an UMC's ENB™ procedure work?

Using your CAT scan, the superDimension™ navigation system with LungGPS™ technology creates a roadmap of your lungs, like a GPS (Global Positioning System) does in a car. That road map guides our physician through the airways of your lungs to the nodule so that he or she is able to obtain tissue to diagnose, stage, and prepare to treat it all in one procedure.

## How does an UMC's ENB™ procedure differ from other biopsy procedures?

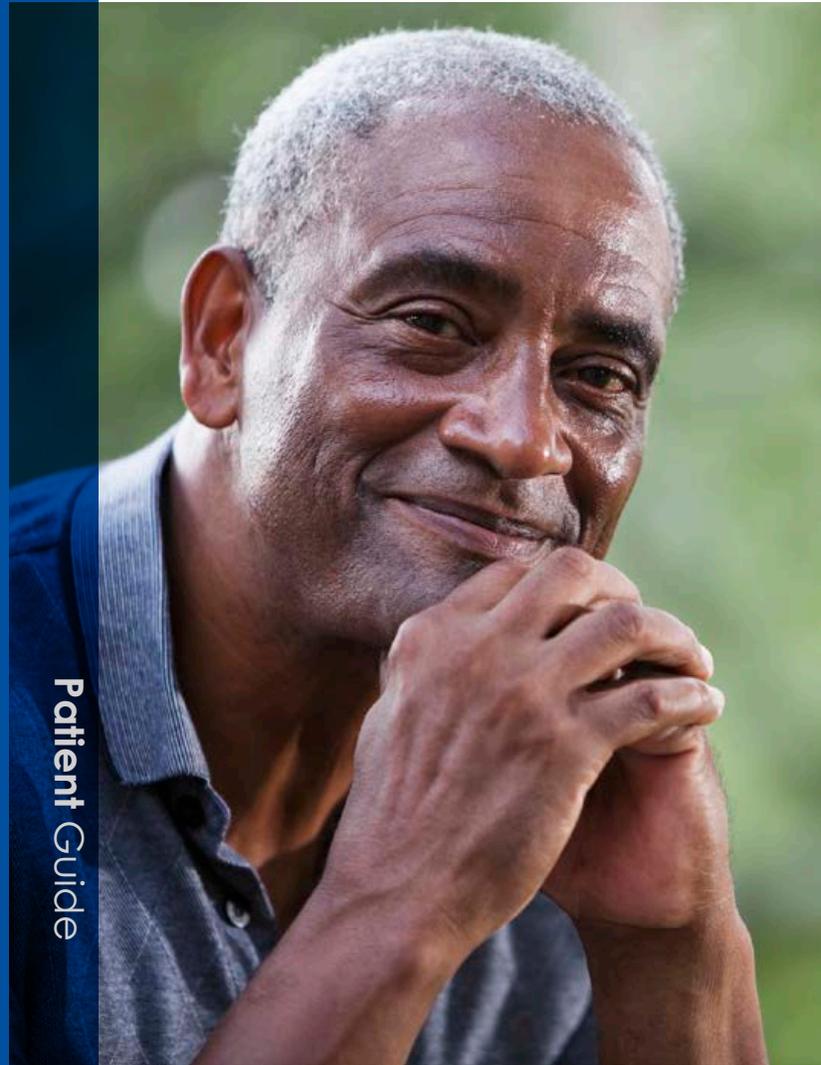
In a traditional bronchoscopy procedure, a thin lighted tube (bronchoscope) is passed down the throat to take samples, but can only reach the central area of the lungs. With UMC's ENB™ procedure, our physician is able to navigate to nodules even in the most distant areas of the lung in a minimally invasive approach. This technology allows UMC to diagnose lung cancer up to 6months earlier than traditional methods. Other biopsy options include more invasive techniques like needle biopsy or surgery, but these carry a higher risk of complications.

## Who is a candidate for UMC's ENB™ procedure?

An ENB™ procedure can be used with a broad range of patients, including those who suffer from poor lung function or have an increased risk of complications with invasive procedures. More than 50,000 patients have had the procedure, at over 600 leading medical facilities, like UMC, worldwide.

Patient Guide

Patient Guide

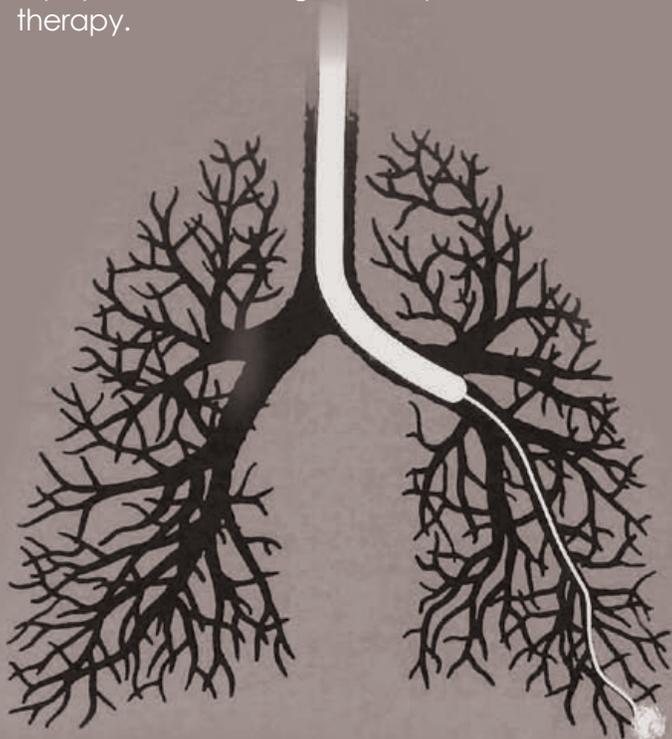


## What are the risks of a more invasive procedure vs. UMC's ENB™ procedure?

More invasive procedures come with a greater risk of complications. Pneumothorax (collapsed lung) is the most common risk. Risks can be as high as 40% for procedures such as needle biopsies.<sup>2</sup> Pneumothorax occurs in less than 3% of ENB™ procedure patients.<sup>3</sup> Because it is a minimally invasive option that uses your natural airways, UMC's ENB™ procedure has a lower risk of complications.

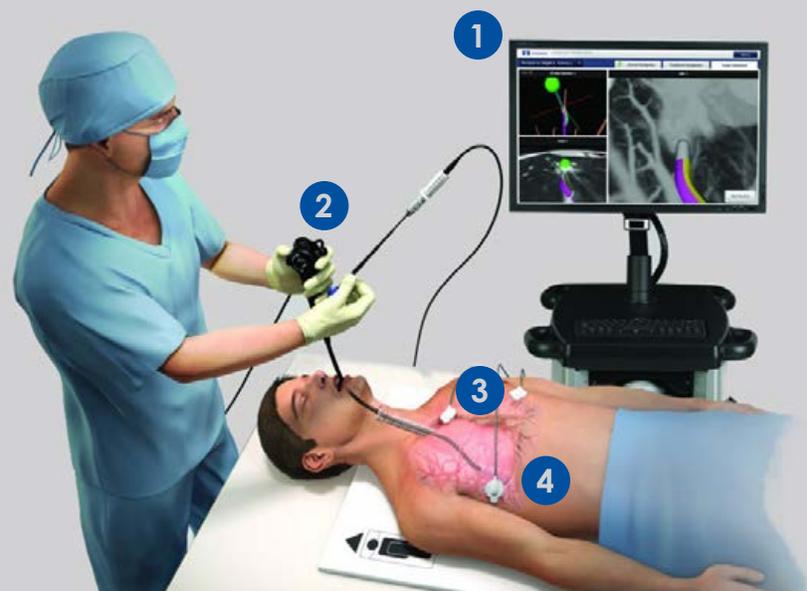
## What can I expect during this procedure?

During UMC's ENB™ procedure, you will be sedated and our physician will insert a bronchoscope through your mouth or nose into your lungs. Once the tube is in place, our physician will insert specially designed tools to take a biopsy for testing. In some cases, small markers, about the size of a grain of rice, may be placed near the lung nodule to help guide a physician delivering follow-up treatment or therapy.



## NAVIGATING UMC'S ENB™ PROCEDURE

- 1 Your CAT scan is converted into a 3-D roadmap.
- 2 Our physician uses this roadmap to guide a bronchoscope to the spot on your lung.
- 3 Our physician will know the location of the bronchoscope in real time with the help of tracking sensors on your chest and a location board under your back.
- 4 Without making an incision, our physician can take a sample of the lung nodule for testing. Small markers may also be placed near the lung nodule to help guide a surgeon or other physician, if follow-up treatment is necessary.
- 5 The samples taken during UMC's ENB™ procedure will be evaluated and your results may be immediately available.



## Where does the procedure take place?

The procedure is performed as an outpatient procedure at UMC's Ambulatory Surgical Center.

## How long does it take?

An ENB™ procedure usually takes between 30 minutes and one hour.

## What can I expect after the procedure?

Your result may be available immediately after your procedure for your Pulmonologist to review with you.

## Where can I learn more?

For more information about UMC's ENB™ procedure and early detection please visit: [www.umcsn.com/nospots](http://www.umcsn.com/nospots) or call: **(702) 383-2214**

Physicians, to schedule a ENB™ procedure call: **702-383-2080**

1. Gould MK, Fletcher J, Lannettoni MD, et al. Evaluation of patients with pulmonary nodules: when is it lung cancer? ACCP evidence-based clinical practice guidelines (2nd edition). Chest. 2007; 132:1085-1305.

2. Cox J, Chiles C, McManus C, Aquino S, Choplin R. Transthoracic Needle Aspiration Biopsy: Variables That Affect Risk of Pneumothorax. Radiology 1999; 212:165-168.

3. Eberhardt R, et al. Electromagnetic Navigation Diagnostic Bronchoscopy in Peripheral Lung Lesions. Chest 2007. 131: 1800-1805.

