

**SPEAKER:** Welcome to the Expect Pulmonary Endobronchial Ultrasound Transbronchial Aspiration Needle device and procedure overview. In this video, we will cover the following-- Expect Pulmonary EBUS Needle device overview, detailed overview of the steps of an Endobronchial Ultrasound EBUS procedure, scope and needle prep.

The Expect Pulmonary EBUS Needle comes in two sizes, 22 and 25 gauge. It will be packaged with an aspiration syringe and adapter which connects the needle to the Olympus scope. A key feature of the adapter is its inner seal. This seal allows the use of the suction feature of the scope without covering the adapter when the device is not in the scope.

The adapter has a white shaded segment with a blue arrow. The white segment indicates the area that should be positioned parallel to the scope. The blue arrow indicates to attach the adapter by pushing down onto the biopsy port. Do not try to slide it forward.

You will hear a click--

[CLICK]

--when it is attached properly. To confirm that it is attached securely, the blue outer ring should be flush with the white internal lure section. This shows that the adapter has not been attached properly.

[CLICK]

The easiest way to remove the adapter from the EBUS scope is shown here.

Procedural steps-- now that the scope is prepared, the procedure can begin. The EBUS scope will be inserted into the patient's mouth through an endotracheal tube and into the trachea. Based on imaging tests, CT scans or PET/CT scans conducted prior to the procedure, the physician will have a plan of which lymph nodes to target. During the procedure, the physician will examine the airway to locate the targeted lymph node.

Before passing the device into the working channel, it is important to confirm the needle is fully retracted in the sheath to reduce the risk of scope damage. When passing the device through the scope, it is important to ensure the scope is in the neutral position. The ultrasound image

will be lost, but this is necessary to avoid scope damage. This is common practice in EBUS procedures.

Advance the device through the adapter and into the scope working channel. Connect the device to the adapter by pushing down with a 1/2 to 3/4 turn. Now that the device is secured to the scope, it is important to adjust the sheath length so it is visible on the endo image. The standard position of the sheath is a few millimeters within the endo image, shown here. The sheath length will be preset to the scope length when it is first taken out of the package. However, the physician may choose to adjust the sheath to their preferred position.

With the device securely in place, the physician will flex the scope to regain the ultrasound image of the target lymph node. With the lymph node visible, adjust the needle length to the appropriate depth. The Expect Pulmonary Needle has six centimeters of needle-length adjust.

Next, slide the stylet back approximately five millimeters to expose the sharp needle tip. With the needle tip exposed, puncture the tissue. The Expect Pulmonary Needle has a sharp tip grind designed for precise penetration into the target area. The highly visible echogenic pattern extends to the needle tip, helping maintain visibility during a procedure.

Lymph-node access can be achieved with a smooth, controlled actuation of the device. This may aid in maintaining a constant ultrasound image during the lymph-node puncture. A quick, hard jab to puncture the airway is not necessary due to the design of the needle tip.

Once in the lymph node, expel any epithelial and bronchial-wall cells by pushing the stylet forward all the way. Remove the stylet. Note the smooth surface finish of the nitinol stylet and ease of passability through the needle.

Attach the aspiration syringe if needed, ensuring the proper vacuum is pulled. Open the stopcock to begin aspirating the sample. Begin actuating the needle. On average, 10 to 20 actuations are performed.

When the pass is complete, turn off the suction while the needle is still inside the node. This will prevent any epithelial cells from contaminating the sample.

Pull the needle back into the sheath. You will hear and feel a click--

[CLICK]

--which indicates that the needle is fully retracted into the sheath and it is now safe to remove the device from the scope.

Next, pull the needle-length-adjust lock up and align the ring with the black dot and lock by turning the knob. Disconnect the device from the adapter with a 1/2 to 3/4 turn and pull up. Remove the device from the scope and pass it to the nurse, tech, or pathologist to expel the sample. Expelling the sample can be done in a number of ways using the stylet and/or the syringe. Testing shows no deterioration in sample quality throughout a procedure.