

# DOWNLOAD PDF ENDOSCOPIC ULTRASONOGRAPHY IN GASTROENTEROLOGY

## Chapter 1 : Endoscopic Ultrasonography Draper, Endoscopic Ultrasound Riverton, UT

*Endoscopic Ultrasound What is an Endoscopic Ultrasound? Endoscopic ultrasound, also known as EUS or endoscopic ultrasonography, is a test that gastroenterology specialists can use to diagnose problems of the gastrointestinal (GI) walls and surrounding organs like the liver, pancreas, gallbladder and lungs.*

This article has been cited by other articles in PMC. Abstract At present, the European Society of Gastrointestinal Endoscopy ESGE guidelines on endoscopic ultrasound-guided sampling are almost complete and express state of the art developments. However, future developments are anticipated. This editorial focuses on a few recently published papers with some additional information and on two important additional techniques, elastography and contrast enhanced ultrasound CEUS , which are mentioned, but not explained in detail in the current ESGE guidelines. Elastography and CEUS might be of importance in the near future to improve the biopsy techniques. The first part the clinical guidelines targeted as readers gastroenterologists, oncologists and surgeons and focused on patient management. The aim of this paper is to maximize the diagnostic yield e. Recommendations are made for various settings with a focus on solid and cystic pancreatic lesions, submucosal tumors and lymph nodes. In addition, a summary of evidence statements and recommendations is provided. At present, the ESGE guidelines are almost complete and express state of the art developments. It is obvious that the ESGE recommendations can only present current knowledge and future developments are anticipated. In this editorial, we focus on a few recently published papers with some additional information and on two important additional techniques, which are mentioned but not explained in detail in the current ESGE guidelines. Elastography and contrast enhanced ultrasound CEUS might be of importance in the near future to improve biopsy techniques. In 30 studies, 22 gauge needles had been used, in 1 study 19 gauge aspiration needles and in 2 studies 25 gauge needles. The results are shown in Tab. Therefore, in most cases surgical diagnostic techniques mediastinoscopy and video-assisted thoracoscopy may be avoided in this particular indication. Recently, the results of the studies on needle choice have been summarized in a meta-analysis. A total of 25 gauge needles perform somewhat better regarding the number of adequate needle passes in comparison with 22 gauge needles. However, there is no significant advantage with regard to sensitivity 25 gauge: One randomized study compared the new 22 gauge ProCore needle and a new 22 gauge aspiration needle in EUS-guided sampling of solid pancreatic mass lesions. Diagnostic yield or quality of the histologic core did not differ significantly between the two needle types. A systematic review and meta-analysis comparing the results of studies with and without ROSE was recently published. On the other hand, ROSE had no impact on diagnostic yield. The diagnostic performance was significantly higher when both cytological smears and cell-blocks were examined than with only cytological examination. A more realistic number is a frequency of complications of 1. Lethal complications are very rare events. There is a striking risk difference between solid and cystic pancreatic lesions solid: Table 2 Open in a separate window The problem of metastatic needle tract implantation was addressed in a retrospective comparative study of patients with malignant pancreatic tumors with and without pre-operative EUS-FNA undergoing distal pancreatectomy. However, due to suspicion of malignant infiltration of the stomach wall in 7 of 57 patients with pre-operative EUS-FNA of pancreatic tail cancer partial gastric resection was performed. Usually, the ultrasound probe is used to palpate the tissue. Alternatively physiological movements such as a vessel or heart pulsations are used as the source of the displacement. Strain imaging techniques applied by EUS are based on the fact that stiffer tissues have very low strains and are the methods used in real time elastography RTE. We believe that elastography will play a stronger role in future guidelines and recommendations regarding EUS biopsy techniques. A typical pancreatic adenocarcinoma is a hypoenhancing mass lesion with scarce irregular peripheral arterial vessels and lacks venous vessels. A typical leiomyoma is hypoechoic or isoechoic compared with the deep muscle layer, homogeneous, has a smooth contour and presents without a halo or hyperechoic spots. The application of CE-EUS and elastography has the potential to change indications and applications

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including biopsy techniques for pancreatic pathology, lymph nodes and subepithelial lesions. More details and practical hints about elastography and CEUS are published in current textbooks. Indications, results, and clinical impact of endoscopic ultrasound EUS -guided sampling in gastroenterology: European society of gastrointestinal endoscopy ESGE clinical guideline. Learning, techniques, and complications of endoscopic ultrasound EUS -guided sampling in gastroenterology: European society of gastrointestinal endoscopy ESGE technical guideline. How good is endoscopic ultrasound-guided fine-needle aspiration in diagnosing the correct etiology for a solid pancreatic mass?: A meta-analysis and systematic review. Suitability of endobronchial ultrasound-guided transbronchial needle aspiration specimens for subtyping and genotyping of non-small cell lung cancer: A multicenter study of patients. Assessment of EGFR and K-ras mutations in fixed and fresh specimens from transesophageal ultrasound-guided fine needle aspiration in non-small cell lung cancer patients. Clinical effectiveness and cost-effectiveness of endobronchial and endoscopic ultrasound relative to surgical staging in potentially resectable lung cancer: Transesophageal endoscopic ultrasound-guided fine-needle aspiration for the mediastinal staging of extrathoracic tumors: Endobronchial ultrasound-guided transbronchial needle biopsy for M1 staging of extrathoracic malignancies. Endobronchial ultrasound-guided transbronchial needle aspiration for the diagnosis of intrathoracic lymphadenopathy in patients with extrathoracic malignancy: Needle size has only a limited effect on outcomes in EUS-guided fine needle aspiration: A systematic review and meta-analysis. A randomized clinical trial comparing 22G and 25G needles in endoscopic ultrasound-guided fine-needle aspiration of solid lesions. Randomized trial comparing the gauge aspiration and gauge biopsy needles for EUS-guided sampling of solid pancreatic mass lesions. Rapid on-site evaluation increases endoscopic ultrasound-guided fine-needle aspiration adequacy for pancreatic lesions. Diagnostic ability and factors affecting accuracy of endoscopic ultrasound-guided fine needle aspiration for pancreatic solid lesions: Japanese large single center experience. Endoscopic ultrasonography-guided fine needle aspiration: Relatively low sensitivity in the endosonographer population. Deutlich geringere diagnostische Ausbeute als in Studien. Assessment of safety and prevention of complications. Tumor seeding after endoscopic ultrasound-guided fine-needle aspiration of cancer in the body of the pancreas. Case of intraductal papillary mucinous tumor in which endosonography-guided fine-needle aspiration biopsy caused dissemination. Melanoma seeding of an EUS-guided fine needle track. Outcomes after preoperative endoscopic ultrasonography and biopsy in patients undergoing distal pancreatectomy. A prospective evaluation of an algorithm incorporating routine preoperative endoscopic ultrasound-guided fine needle aspiration in suspected pancreatic cancer. Assessing perspectives of surgeons, oncologists and gastroenterologists. Dietrich CF, Cantisani V. Current status and perspectives of elastography. Elastography, the new dimension in ultrasonography. Praxis Bern ; EUS elastography for the differentiation of benign and malignant lymph nodes: Basic principles and technology. Dietrich CF, Jenssen C. Evidence based endoscopic ultrasound. Comment on emergent indications and visions. Update on non-hepatic applications. Contrast-enhanced endoscopic ultrasound in the diagnosis of autoimmune pancreatitis. Is there a need for new imaging methods for lymph node evaluation? Trends in pancreatic pathology practice before and after implementation of endoscopic ultrasound-guided fine-needle aspiration: An example of disruptive innovation effect? Arch Pathol Lab Med. Incidence of benign inflammatory disease in patients undergoing Whipple procedure for clinically suspected carcinoma: Pancreaticoduodenectomy for presumed pancreatic cancer. Is intraoperative confirmation of malignancy during pancreaticoduodenectomy mandatory? Improved differentiation of pancreatic tumors using contrast-enhanced endoscopic ultrasound. Improved characterisation of solitary solid pancreatic tumours using contrast enhanced transabdominal ultrasound. J Cancer Res Clin Oncol. Contrast-enhanced EUS for differential diagnosis of pancreatic mass lesions: Endosonographic large-bore biopsy of gastric subepithelial tumors: A prospective multicenter study. Eur J Gastroenterol Hepatol. Yield and performance characteristics of endoscopic ultrasound-guided fine needle aspiration for diagnosing upper GI tract stromal tumors. Jenssen C, Dietrich CF. Endoscopic ultrasound of gastrointestinal subepithelial lesions. Contrast-enhanced harmonic endoscopic ultrasound is able to discriminate benign

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submucosal lesions from gastrointestinal stromal tumors. Imaging of gastrointestinal stromal tumours with modern ultrasound techniques - A pictorial essay. An Introductory Manual and Atlas.

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## Chapter 2 : Endoscopic Ultrasound (EUS) - Gastroenterology

*This bar-code number lets you verify that you're getting exactly the right version or edition of a book. The digit and digit formats both work.*

Black or very dark-colored stool Severe or persistent abdominal pain How you prepare Your doctor will give you specific instructions to prepare for your EUS. You may be asked to: Fast before EUS, to make sure your stomach is empty. Prepare your rectum, if EUS is being done in the rectal area. You may be asked to take a laxative or have an enema and to follow a liquid diet before the procedure. Stop taking certain medications, such as blood thinners. Blood thinners may increase your risk of bleeding if fine-needle aspiration is performed during EUS. If you have chronic conditions, such as diabetes or high blood pressure, your doctor will give you specific instructions regarding your medications. Plan ahead for your recovery, if you will be sedated before EUS. Most people who have EUS are given medication to relax them. Arrange for someone to drive you home after the procedure. What you can expect You likely will be given medicine to help you relax. During EUS your doctor passes a thin, flexible tube endoscope through your mouth and through your digestive tract. A small ultrasound device transducer in the tube produces sound waves that create a precise image of surrounding tissue, including lymph nodes in the chest. The endoscope is then gradually withdrawn. If you have fine-needle aspiration with EUS, your doctor may need to pass a second, curved device through a channel in the endoscope into your digestive tract. That device can guide a very slender needle to your lymph nodes and tumors or other abnormalities. The needle extracts fluid and tissue for analysis. EUS with fine-needle aspiration generally lasts less than an hour. Results A specialist in digestive diseases gastroenterologist or lung disease pulmonologist with special training in EUS will interpret the EUS images. A doctor trained in analyzing biopsies pathologist will report the test results if you have fine-needle aspiration. Your doctor will discuss any important findings and next steps with you. Clinical trials Explore Mayo Clinic studies testing new treatments, interventions and tests as a means to prevent, detect, treat or manage this disease.

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## Chapter 3 : International Symposium on Endoscopic Ultrasonography, Bangkok - EUS

*Keywords: Endoscopic ultrasound, Endoscopic ultrasound-guided fine needle aspiration, Ablation, Injection, Drainage, Immunohistochemistry, Gastroenterology*  
*Core tip: Since its advent in , the scope of endoscopic ultrasound has grown to include a wide range of indications, and it is now being incorporated as an integral part of everyday practice in the field of gastroenterology.*

Endoscopic ultrasound Endoscopic ultrasound An endoscopic ultrasound exam allows your doctor to see if there is anything abnormal in your digestive tract esophagus, stomach and upper small bowel and other organs in this area. An ultrasound uses sound waves to "see" the inside of your body. A computer monitor shows the images from the sound waves. A gastroenterologist a specially trained doctor will pass an endoscope a thin, flexible, lighted tube through your mouth and stomach and then into the upper small bowel. The exam will last about 20 to 60 minutes. Before the exam Please follow all instructions you receive carefully. Most medicines may be taken up to midnight the night before the exam. Some medicines such as aspirin and blood thinners may need to be stopped a few days earlier. Your doctor will give you directions. Do not eat, drink or smoke eight hours before the exam. If you do, the test will be canceled. If you are having this exam as an outpatient not staying overnight at the hospital , please arrange to have someone drive you home and stay with you. You will not be able to drive. If you do not have someone to drive you home, the procedure will be canceled. Day of the exam Bring a list of your current medicines, doses, and when they should be taken. Stop at the admitting desk to register. During the exam You will be asked to wear a gown. A nurse will ask for your medical history. You will be asked to sign a consent form. An intravenous IV line will be started in your hand or arm. You will be given a medicine through the IV to help you relax. The doctor will spray a numbing medicine on the back of your throat. Your heart rate and oxygen levels will be watched. The doctor will pass an endoscope through your mouth. When the tube reaches your gastrointestinal tract, a small ultrasound transducer at the end of the scope sends sound waves to a computer. The doctor can look at the ultrasound images of your gastrointestinal tract, gallbladder, liver and pancreas. Depending on what your doctor sees, he or she may take tissue samples fine needle aspirate. Any tissue samples will be sent to the pathology department. The sample will be tested and you will receive the results from your health care provider. After the exam The IV line will be removed. The nursing staff will monitor you in the recovery area. If you are an inpatient staying in the hospital , you will be taken back to your room when you are ready to leave the recovery area. If you are an outpatient, you will be in the recovery area until you are ready to go home. This usually takes about one to two hours. During that time, a nurse will monitor you. A friend or family member may also be with you. Your doctor will meet with you and your family in the recovery area to talk about the exam results and a plan of care. Before you leave, the nurse will give you a list of instructions to follow at home. Please follow the list carefully. For more information, call the office of the doctor who will do the exam.

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## Chapter 4 : Endoscopic Ultrasound - [blog.quintoapp.com](http://blog.quintoapp.com)

*MAY Endoscopic ultrasonography in gastroenterology TABLE II PATIENTS WITH KNOWN OESOPHAGEA NEW ABNORMAL DISEASEL FINDING. S CONSIDERE BUT NOD INDEPENDENTL IMPORTANT TY.*

Endoscopic ultrasonography EUS allows your doctor to examine your esophageal and stomach linings as well as the walls of your upper and lower gastrointestinal tract. The upper tract consists of the esophagus, stomach and duodenum; the lower tract includes your colon and rectum. EUS is also used to study other organs that are near the gastrointestinal tract, including the lungs, liver, gall bladder and pancreas. Endoscopists are highly trained specialists who welcome your questions regarding their credentials, training and experience. Your endoscopist will use a thin, flexible tube called an endoscope that has a built-in miniature ultrasound probe. Your doctor will pass the endoscope through your mouth or anus to the area to be examined. Your doctor then will use the ultrasound to use sound waves to create visual images of the digestive tract. Why is EUS done? EUS provides your doctor with more information than other imaging tests by providing detailed images of your digestive tract. Your doctor can use EUS to diagnose certain conditions that may cause abdominal pain or abnormal weight loss. EUS is also used to evaluate known abnormalities, including lumps or lesions, which were detected at a prior endoscopy or were seen on x-ray tests, such as a computed tomography CT scan. EUS provides a detailed image of the lump or lesion, which can help your doctor determine its origin and help treatment decisions. EUS can be used to diagnose diseases of the pancreas, bile duct and gallbladder when other tests are inconclusive or conflicting. Why is EUS used for patients with cancer? EUS helps your doctor determine the extent of spread of certain cancers of the digestive and respiratory systems. In some patients, EUS can be used to obtain a needle biopsy of a lump or lesion to help your doctor determine the proper treatment. How should I prepare for EUS? For EUS of the upper gastrointestinal tract, you should have nothing to eat or drink, usually for six hours before the examination. Your doctor will tell you when to start this fasting and whether it is advisable to take your regular prescription medications. For EUS of the rectum or colon, your doctor will instruct you to either consume a colonic cleansing solution or to follow a clear liquid diet combined with laxatives or enemas prior to the examination. What about my current medications or allergies? You can take most medications as usual until the day of the EUS examination. Anticoagulant medications blood thinners such as warfarin or heparin and clopidogrel may need to be adjusted before the procedure. Insulin also needs to be adjusted on the day of EUS. In general, you can safely take aspirin and non-steroidal anti-inflammatory medications ibuprofen, naproxen, etc. Check with your doctor in advance regarding these recommendations. Check with your doctor about which medications you should take the morning of the EUS examination, and take only essential medications with a small sip of water. If you have an allergy to latex, you should inform your doctor prior to your test. Patients with latex allergies often require special equipment and may not be able to have a complete EUS examination. Do I need to take antibiotics? Antibiotics are not generally required before or after EUS examinations. However, your doctor might prescribe antibiotics if you are having specialized EUS procedures, such as to drain a fluid collection or a cyst using EUS guidance. Should I arrange for help after the examination? If you received sedatives, you will not be allowed to drive after the procedure, even if you do not feel tired. You should arrange a ride home in advance. You should also plan to have someone stay with you at home after the examination, because the sedatives could affect your judgment and reflexes for the rest of the day. What can I expect during EUS? Practices vary among doctors, but for an EUS examination of the upper gastrointestinal tract, some endoscopists spray your throat with a local anesthetic before the test begins. Most often you will receive sedatives intravenously to help you relax. You will most likely begin by lying on your left side. After you receive sedatives, your endoscopist will pass the ultrasound endoscope through your mouth, esophagus and stomach into the duodenum. The instrument does not interfere with your ability to breathe. The actual examination generally takes less than 60 minutes. Many do not recall the procedure. Most patients consider it

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only slightly uncomfortable, and many fall asleep during it. You will start by lying on your left side with your back toward the doctor. Most EUS examinations of the rectum generally take less than 45 minutes. You should know that if a needle biopsy of a lesion or drainage of a cyst is performed during the EUS, then the procedure will be longer and may take up to two hours. What happens after EUS? If you had an upper EUS, your throat might be a little sore. You might feel bloated because of the air and water that were introduced during the examination. Your doctor generally can inform you of the preliminary results of the procedure that day, but the results of some tests, including biopsies, may take several days. What are the possible complications of EUS? Although complications can occur, they are rare when doctors with specialized training and experience perform the EUS examination. You might have a slight sore throat for a day or so. Nonprescription anesthetic-type throat lozenges help soothe a sore throat. Other potential but uncommon risks of EUS include a reaction to the sedatives used, aspiration of stomach contents into your lungs, infection, and complications from heart or lung diseases. One major but very uncommon complication of EUS is perforation. This is a tear through the esophagus, stomach or lining of the intestine that might require surgery to repair. The possibility of complications increases slightly if a needle biopsy is performed during the EUS examination, including an increased risk of pancreatitis or infection. These risks must be balanced against the potential benefits of the procedure and the risks of alternative approaches to the condition.

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## Chapter 5 : Endoscopic ultrasound - Mayo Clinic

*Endoscopic ultrasonography (EUS) has come a long way since it was first conceptualized almost 30 years ago. Over the last decade, the use of EUS has become ubiquitous in the evaluation of various gastrointestinal malignancies and subepithelial processes.*

What are the risks of EUS? What is Endoscopic Ultrasound? Endoscopic ultrasound EUS combines endoscopy and ultrasound in order to obtain images and information about the digestive tract and the surrounding tissue and organs. Endoscopy refers to the procedure of inserting a long flexible tube via the mouth or rectum to visualize the digestive tract for further information, please visit the Colonoscopy and Flexible Sigmoidoscopy articles , whereas ultrasound uses high-frequency sound waves to produce images of the organs and structures inside the body such as ovaries, uterus, liver, gallbladder, pancreas, aorta, etc. Traditional ultrasound sends sound waves to the organ s and back with a transducer placed on the skin overlying the organ s of interest. Images obtained by traditional ultrasound are not always of high quality. In EUS a small ultrasound transducer is installed on the tip of the endoscope. By inserting the endoscope into the upper or the lower digestive tract one can obtain high quality ultrasound images of the organs inside the body. Placing the transducer on the tip of an endoscope allows the transducer to get close to the organs inside the body. Because of the proximity of the EUS transducer to the organ s of interest, the images obtained are frequently more accurate and more detailed than the ones obtained by traditional ultrasound. The EUS also can obtain information about the layers of the intestinal wall as well as adjacent areas such as lymph nodes and the blood vessels. Other uses of EUS include studying the flow of blood inside blood vessels using Doppler ultrasound, and obtaining tissue samples by passing a special needle, under ultrasound guidance, into enlarged lymph nodes or suspicious tumors. The tissue or cells obtained by the needle can be examined by a pathologist under a microscope. The process of obtaining tissue with a thin needle is called fine needle aspiration FNA. Being a relatively new diagnostic tool the uses for EUS are still being developed and, presently, it is being utilized in some of the following situations: Staging of cancers of the esophagus, stomach, pancreas and rectum. Staging of lung cancer. Evaluating chronic pancreatitis and other masses or cysts of the pancreas. Studying bile duct abnormalities including stones in the bile duct or gallbladder, or bile duct, gallbladder, or liver tumors. Studying the muscles of the lower rectum and anal canal in evaluating reasons for fecal incontinence. Studying submucosal lesions such as nodules or "bumps" that may be hiding in the intestinal wall covered by normal appearing lining of the intestinal tract. Staging of cancer is becoming an important use of EUS. The prognosis of a cancer victim is related to the stage of the cancer at the time of detection. For example, early stage colon cancer refers to cancer confined to the inner surface of the colon before it is spread to adjacent tissues or distant organs. Therefore, early stage colon cancer can be completely resected with good chances for cure. If cancer is detected at later stages, however, the cancer tissues have already penetrated the colon wall and invaded neighboring organs and lymph nodes, or have spread to distant organs such as liver and lungs. Complete surgical excision becomes highly unlikely. EUS can provide information regarding the depth of penetration of the cancer and spread of cancer to adjacent tissues and lymph nodes, information useful for staging. Upon arrival at the endoscopy center, the nurse or the doctor will discuss the procedure and answer any questions. You will then be asked to sign a consent form indicating you were informed about the procedure, its alternatives, and its risks. You will undress and put on a hospital gown. An IV will be placed in a vein and kept open with a slow drip of IV fluid. This IV will be used to administer the sedatives or other required medication. Anesthesia is rarely used. You will then be taken into the procedure room and, after the administration of the sedation, the EUS will be carried out. Small electrode patches will be placed on your skin for the monitoring of your blood pressure, pulse, and blood oxygen. Once you are sleepy, the special endoscope will be inserted and the procedure started. Because of the sedation, you will only feel minimal discomfort, if any, during the entire procedure. The physician will observe the inside of your intestinal tract on

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a TV monitor and the ultrasound image on another monitor. The entire procedure generally takes 30 to 90 minutes, depending on the complexity and whether fine needle aspiration FNA is performed. After the procedure you will be sleepy for up to one hour and be unable to drink or walk. Once you are fully awake, the doctor will discuss with you and, if desired, the person with you, the findings of the procedure. Barring any rare complications, when you are fully awake, your companion will be able to take you home, where you should rest for the remainder of the day. Light meals and fluids are allowed. The bloating which you may feel from the insufflated air will only be temporary. Should your throat be mildly sore, for a day or two, salt-water gargles will provide relief. You should call your doctor if concerned about your progress or if you are having severe pain, vomiting, passage or vomiting of blood, chills or fever. If EUS was particularly difficult or complicated you may be kept in the hospital overnight. The endoscopist will discuss this with you when you wake up. Like other endoscopy procedures, EUS is safe and well tolerated. But no procedure is without risk, which with EUS are quite rare. Complication rate for EUS without the fine needle aspiration is about one in 1000. This is similar to the complication rate of other endoscopy procedures. Sometimes, patients can develop reactions such as hives, skin rash or nausea to the medications used during EUS. A lump may appear in the area of the vein where the IV was placed. This usually resolves over time. Should it persist, you should contact your physician. The main complication of serious note is perforation making a hole in the intestinal wall that may require surgical repair. This is quite rare and all precautions are taken to avoid it. When FNA is performed complications occur more often but are still uncommon. Passing a needle through the gut wall may cause minor bleeding. If unusual bleeding occurs, the patient may be hospitalized briefly for observation, but blood transfusions are rarely needed. Infection is another rare complication of FNA. Infection can occur during aspiration of fluid from cysts and antibiotics may be given before the procedure. If the FNA is performed on the pancreas, pancreatitis inflammation of the pancreas can rarely occur.

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## Chapter 6 : Endoscopic Ultrasonography | AZ Gastroenterology

*Endoscopic ultrasound (EUS) is a minimally invasive procedure to assess digestive (gastrointestinal) and lung diseases. A special endoscope uses high-frequency sound waves to produce detailed images of the lining and walls of your digestive tract and chest, nearby organs such as the pancreas and liver, and lymph nodes.*

Our team of specialists and staff strive to improve the overall health of our patients by focusing on preventing, diagnosing and treating conditions associated with your digestive system. Please use the search field below to browse our website. If you have questions or need to schedule an appointment, contact our office. For more information about ASGE, visit [www.asge.org](http://www.asge.org). This information is intended only to provide general guidance. It does not provide definitive medical advice. It is important that you consult your doctor about your specific condition.

Download it here You have been referred to have an endoscopic ultrasonography, or EUS, which will help your doctor evaluate or treat your condition. Upper EUS can be used to diagnose conditions of the esophagus, stomach and duodenum. Endoscopic ultrasonography EUS allows your doctor to examine your esophageal and stomach linings as well as the walls of your upper and lower gastrointestinal tract. The upper tract consists of the esophagus, stomach and duodenum; the lower tract includes your colon and rectum. EUS is also used to study other organs that are near the gastrointestinal tract, including the lungs, liver, gall bladder and pancreas. Endoscopists are highly trained specialists who welcome your questions regarding their credentials, training and experience. Your endoscopist will use a thin, flexible tube called an endoscope that has a built-in miniature ultrasound probe. Your doctor will pass the endoscope through your mouth or anus to the area to be examined. Your doctor then will use the ultrasound to use sound waves to create visual images of the digestive tract.

Why is EUS done? EUS provides your doctor with more information than other imaging tests by providing detailed images of your digestive tract. Your doctor can use EUS to diagnose certain conditions that may cause abdominal pain or abnormal weight loss. EUS is also used to evaluate known abnormalities, including lumps or lesions, which were detected at a prior endoscopy or were seen on x-ray tests, such as a computed tomography CT scan. EUS provides a detailed image of the lump or lesion, which can help your doctor determine its origin and help treatment decisions. EUS can be used to diagnose diseases of the pancreas, bile duct and gallbladder when other tests are inconclusive or conflicting. Why is EUS used for patients with cancer? EUS helps your doctor determine the extent of spread of certain cancers of the digestive and respiratory systems. In some patients, EUS can be used to obtain a needle biopsy of a lump or lesion to help your doctor determine the proper treatment.

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examination of the upper gastrointestinal tract, some endoscopists spray your throat with a local anesthetic before the test begins. Most often you will receive sedatives intravenously to help you relax. You will most likely begin by lying on your left side. After you receive sedatives, your endoscopist will pass the ultrasound endoscope through your mouth, esophagus and stomach into the duodenum. The instrument does not interfere with your ability to breathe. The actual examination generally takes less than 60 minutes. Many do not recall the procedure. Most patients consider it only slightly uncomfortable, and many fall asleep during it. You will start by lying on your left side with your back toward the doctor. Most EUS examinations of the rectum generally take less than 45 minutes. You should know that if a needle biopsy of a lesion or drainage of a cyst is performed during the EUS, then the procedure will be longer and may take up to two hours. Using an endoscope with a built-in ultrasound probe, your doctor will use sound waves to create visual images of the digestive tract. What can I expect during EUS? What happens after EUS? If you had an upper EUS, your throat might be a little sore. You might feel bloated because of the air and water that were introduced during the examination. Your doctor generally can inform you of the preliminary results of the procedure that day, but the results of some tests, including biopsies, may take several days. Should I arrange for help after the examination? If you received sedatives, you will not be allowed to drive after the procedure, even if you do not feel tired. You should arrange a ride home in advance. You should also plan to have someone stay with you at home after the examination, because the sedatives could affect your judgment and reflexes for the rest of the day. What are the possible complications of EUS? Although complications can occur, they are rare when doctors with specialized training and experience perform the EUS examination. You might have a slight sore throat for a day or so. Nonprescription anesthetic-type throat lozenges help soothe a sore throat. Other potential but uncommon risks of EUS include a reaction to the sedatives used, aspiration of stomach contents into your lungs, infection, and complications from heart or lung diseases. One major but very uncommon complication of EUS is perforation. This is a tear through the esophagus, stomach or lining of the intestine that might require surgery to repair. The possibility of complications increases slightly if a needle biopsy is performed during the EUS examination, including an increased risk of pancreatitis or infection. These risks must be balanced against the potential benefits of the procedure and the risks of alternative approaches to the condition. Download it here Important Reminder: It is very important that you consult your doctor about your specific condition. Since its founding in 1988, the American Society for Gastrointestinal Endoscopy ASGE has been dedicated to advancing patient care and digestive health by promoting excellence in gastrointestinal endoscopy. ASGE, with more than 11,000 members worldwide, promotes the highest standards for endoscopic training and practice, fosters endoscopic research, and is the foremost resource for endoscopic education. This patient education brochure was developed by the Publications Committee of the American Society for Gastrointestinal Endoscopy. This information is the opinion of and provided by the American Society for Gastrointestinal Endoscopy. American Society for Gastrointestinal Endoscopy www.ASGE.org. American Society for Gastrointestinal Endoscopy. This information may not be reproduced without express written permission by ASGE.

## Chapter 7 : Endoscopy Ultrasound | Our Expert Teams

*Endoscopic ultrasonography (EUS) allows doctors to determine the extent of colorectal cancer. The prognosis of colon cancer depends on the stage of colon cancer at the time of detection. The prognosis of colon cancer depends on the stage of colon cancer at the time of detection.*

Endoscopic ultrasonography EUS allows a doctor to examine your oesophageal and stomach linings as well as the walls of your upper and lower gastrointestinal tract. The upper tract consists of the oesophagus, stomach and duodenum; the lower tract includes your colon and rectum. EUS is also used to study other organs that are near the gastrointestinal tract, including the lungs, liver, gall bladder and pancreas. The endoscopist will use a flexible camera called an endoscope that has a built-in small ultrasound probe. They will pass the endoscope through your mouth or anus to the area to be examined and then use the ultrasound waves from the probe to create black and white moving images of the digestive tract. The procedure requires specialised equipment and at present, this is only available in Edinburgh at the Royal Infirmary, so your procedure will take place there. Your consultant will discuss the arrangements with you beforehand. Why is EUS performed? EUS provides different or additional information about your gut than other imaging tests e. EUS can be used to diagnose certain conditions that may cause abdominal pain or abnormal weight loss. EUS is also used to evaluate known abnormalities, including lumps or lesions, which were detected at a prior endoscopy or were seen on a CT or MRI scan. EUS provides detailed pictures of the lump or lesion, which can help your consultant determine its origin and help treatment decisions. EUS can also be used to diagnose diseases of the pancreas, bile duct and gallbladder when other tests are inconclusive. Why is EUS used for patients with cancer? EUS helps to determine the extent of spread of certain cancers of the digestive and respiratory systems. EUS is also sometimes used to obtain a biopsy of a lesion to confirm its exact nature and determine the best treatment. How should I prepare for EUS? For EUS of the upper gastrointestinal tract, you should have nothing to eat or drink, usually for six hours before the examination but you will be sent specific instructions with your appointment. For EUS of the rectum or colon, you will be sent specific details about preparing for the test, but this will usually involve taking a bowel cleansing solution or laxatives to empty the bowel beforehand. You can take most medications as usual until the day of the EUS examination. Anticoagulants blood thinning medicines such as warfarin, heparin, rivoroxaban or apixaban and clopidogrel may need to be adjusted before the procedure. Insulin also needs to be adjusted on the day of EUS. Check with your doctor in advance regarding these recommendations, especially blood-thinning medicines as these may need to be stopped or adjusted up to 7 days before your EUS. Check with your doctor about which medications you should take the morning of the EUS examination, and take only essential medications with a small sip of water. If you have an allergy to latex, you should inform your doctor prior to your test. Patients with latex allergies often require special equipment and may not be able to have a complete EUS examination. What happens during EUS? You will usually be given throat spray with a local anaesthetic before the test and you will usually be given sedatives intravenously to help you relax. The doctor will pass the endoscope through your mouth into your oesophagus, stomach and then duodenum. The instrument does not interfere with your ability to breathe. The procedure generally takes minutes. Many patients do not recall the procedure afterwards or report it only to be mildly uncomfortable. EUS examination of the lower gastrointestinal tract can often be performed safely and comfortably without medications. What happens after EUS? Your throat might be a little sore. You may feel bloated because of the air that was introduced during the procedure. If you received sedatives, you will not be allowed to drive after the procedure and should arrange a lift home in advance. Someone should stay with you at home after the procedure, because sedatives could affect your judgment and reflexes for the rest of the day. The doctor can usually tell you the preliminary results of the procedure that day, but the results of biopsies may take a week or so. What are the possible complications of EUS? Although complications can occur, they are rare when doctors specialising in EUS perform the examination. You might have a slight sore throat for a

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day or so. Other potential but uncommon risks of EUS include a reaction to the sedatives used, aspiration of stomach contents into your lungs, infection, and complications from heart or lung diseases. One major but very uncommon complication of EUS is perforation. This is a tear through the lining of the intestine that might require emergency surgery to repair and occurs in less than 1 in 1000 examinations. The doctor can discuss these possibilities with you in more detail before your EUS. This information is intended only to provide general guidance.

### Chapter 8 : Edinburgh Gastroenterology: Endoscopic Ultrasonography

*An endoscopic ultrasound exam allows your doctor to see if there is anything abnormal in your digestive tract (esophagus, stomach and upper small bowel) and other organs in this area.*

### Chapter 9 : Endoscopic ultrasound | Gastroenterology | Allina Health

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