

Advanced Endoscopy and Medical Imaging

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Gastrointestinal endoscopy is a minimally invasive medical procedure that uses endoscopes and other technology such as medical imaging to diagnose and treat digestive tract issues. Advanced endoscopy provides your doctor a more detailed view of your digestive tract, allowing them to diagnose and treat your condition without the need for large incisions or traditional surgery. Advanced endoscopy includes specialized therapeutic procedures such as ERCP, EUS, stent placements, and endoscopic resections.

During your endoscopic procedure, your doctor will send an endoscope – a long, thin, flexible tool with a camera and a light on the end – down your esophagus, working it through your digestive system. The endoscope provides a high-quality picture displayed on a monitor that gives your doctor a clear view of your gastrointestinal conditions and provides a means to treat them.

An endoscope can be equipped with various tools that enable the taking of biopsies, the draining of fluids, the insertion of stents (like what a heart surgeon might do), as well as other procedures. Advanced endoscopy is used for the collection of tissue within the gastrointestinal (GI) tract for biopsy, including tissue from other organs such as the pancreas or liver. Advanced endoscopy can be used to drain fluid or infections or to insert dilating balloons or stents to fix a blockage within the GI tract. Advanced endoscopy can also be used to remove bile or pancreas duct stones or polyps or other growths.

One specific procedure performed using advanced endoscopy is an endoscopic retrograde cholangiopancreatography – an [ERCP](#). ERCP is used to diagnose and treat conditions of the bile ducts and pancreas and combines the endoscope use with X-rays – specifically [fluoroscopy](#). Fluoroscopy provides real-time visualization – a live video – that allows precision guidance during a procedure. Fluoroscopy gives your doctor the “eyes to see” while they perform the procedure inside your body without cutting you open. Fluoroscopy is used for guidance and anatomical positioning as well as to see any blockage or narrowing.

As with other endoscopic procedures, an endoscope is guided through your esophagus and GI tract to the spot where the ducts of the biliary tree and pancreas open to the duodenum. The endoscope is used to inject dye through a tube into the ducts so they show up on X-rays – on the live video for your doctor.

If a condition is found, the endoscope and fluoroscopy can then be used to treat the condition with stent placement in the bile duct or pancreatic duct that helps bile flow properly. This allows bile to reach your intestines and to do its job – to help digest food.

Clearly, there are several benefits to advanced endoscopy when compared to more traditional surgery. Since a large incision is not necessary, there is less risk of infection, and the recovery time is much faster. But this is not to say there is no risk. Any medical procedure comes with risk.

The technology that provides your doctor their “eyes,” the fluoroscopy, presents a risk of radiation exposure to you the patient as well as to your doctor and their staff. The risks of radiation exposure are [well documented](#). However, just as technology can improve procedures and the medical systems that are used to perform them, technology can help to reduce the risk that radiation exposure represents.

The interventional X-ray systems designed and built by Omega provide an automatic, hands-free solution to radiation reduction – delivering the benefit of consistent and repeatable radiation reduction to patients and staff beyond anything else in use today. Omega systems are also specifically designed with features exclusively developed for ERCP and image-guided endoscopic GI procedures.

AI image-guided ROI systems are proven to be safer than non-AI systems and are quickly becoming the new standard of care for interventional imaging. The publications and science on the advantages of AI are clear and [proven in a study](#) that compares an Omega AI image-guided ROI system to a competitor’s non-ROI system. Omega is the only provider of these systems.

Omega systems allow physicians and hospitals to provide the best care and radiation safety to their patients. When your doctor talks to you about advanced endoscopy, express your concerns about radiation exposure. Be sure to ask them about the medical imaging, the interventional X-ray system they use. Is it the safest system available? Do they use an Omega system?



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