



Understanding Capsule Endoscopy

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Your primary physician has determined that Capsule Endoscopy is necessary for further evaluation of your condition. We have prepared this brochure because most people are not familiar with Capsule Endoscopy. Dr. Lewis is considered one of the world's experts. We feel that if you know more about the procedure you will be less apprehensive. The brochure contains answers to questions patients most frequently ask. Please read it carefully. If you have additional questions, please feel free to call our office. To paraphrase a New York retailer, a well-informed patient is our best customer. We strive to provide individual care in a non-rushed, but efficient manner.

What is Capsule Endoscopy?

Capsule endoscopy is a diagnostic procedure that allows a physician to "look" into the small bowel (also called the small intestine) without surgery. This exam does not replace upper endoscopy or colonoscopy. Capsule endoscopy is a video capsule system, developed by Given Imaging Limited®. The capsule, which measures 11 x 26 mm, contains LEDs (light emitting diode), a lens, a color camera chip, two silver oxide batteries, a radio frequency transmitter and an antenna. The camera is a CMOS (complementary metal oxide semiconductor) chip. This chip requires less power than present CCD (charged coupled device) chips found on video endoscopes and digital cameras, and it can operate at very low levels of illumination. The capsule obtains between two and six images per second and transmits the data to a recording device hung from a patient's shoulder. Once the study is completed, the recording device is downloaded to a computer workstation whose software provides the images to a computer screen. The capsule is disposable and does not need to be retrieved by a patient. It is passed naturally in a bowel movement.

What is the small intestine?

The small intestine is that part of the gut that connects the stomach to the colon. The small intestine is approximately 5-7 meters in length. Quoted lengths do vary, since the gut can be stretched. The small intestine has three parts, the duodenum, the jejunum and the ileum. It lies in the middle of your abdomen. The small intestine works to absorb nutrients from our food. The small intestine contains numerous finger-like projections that act to increase the surface area of the absorptive surface. If the entire small intestine's surface area were laid flat it would fill a football field.

What are the various exams of the small intestine?

The original method to evaluate the small intestine was a small bowel series. This is a x-ray exam where a patient swallows liquid barium and the multiple x-rays are obtained as the barium traverses the small bowel. Standard upper endoscopy views the esophagus, the stomach and only the very beginning of the duodenum. An exam called enteroscopy examines the entire duodenum and the entire jejunum. There are different forms of enteroscopy and double balloon enteroscopy can exam the ileum. The instruments are fully therapeutic. Polyps can be removed, bleeding sites can be cauterized and biopsies can be obtained. Intraoperative enteroscopy is an endoscopic exam of the small bowel performed at the time of surgery. Prior to the development of capsule endoscopy, there was no non-invasive endoscopic examination of the entire small bowel in one session.

Is Capsule Endoscopy painful?

In multiple studies, capsule endoscopy has been shown to be completely pain and discomfort free.

Will I gag or vomit?

The most frequent fear expressed by patients is that they will not be able to swallow the capsule. Our experience shows that the capsule is easily swallowed in all cases and even the most apprehensive patient usually tolerates the procedure well.

How do I prepare myself for the examination?

You are to have nothing to eat or drink after 7pm on the evening before the examination. The last meal should be light like a sandwich, avoiding fruits, vegetables, and salads. This should be a 12 hour fast. Iron pills should not be taken for 3 days prior to the examination. Please do not smoke cigarettes on the day of the examination, since this may cause a change in the color of the stomach lining. Do not take any medications or antacids during the fasting period. You may bring your medications with you to take during the day if necessary. If you are diabetic, please contact the office concerning your medications.

What will happen?

You will arrive at our office on the morning of the exam after a 12 hour fast. Certain data, including height and weight, will be obtained from you to allow initialization of the recording device. You will then be given a simethicone mint strip to dissolve on your tongue. This breaks up any bubbles inside the digestive tract. Then a sensor belt will be placed around your waist. The sensor belt is then attached to the recording device, which will hang from a shoulder strap. Next, you will swallow the capsule followed by a full glass of water. The capsule will be turned on when it is handed to you, already flashing two times a second, sending images to the recording device. You will be asked to drink an additional two glasses of water. You can then leave the office and carry about a normal day. You should refrain from exercising during the exam. You can eat beginning 4 hours after swallowing the capsule.

How long will the exam take?

The capsule obtains images over 8 hours. You will need to return to the office after this amount of time, so that the sensor belt and recording device can be removed. The capsule passes in a normal bowel movement usually at 24 hours. It does not need to be retrieved and can be flushed down the toilet.

Will they tell me what they found?

Yes. The recording device is downloaded to a workstation overnight. The procedure of reviewing the data, 50,000 to 100,000 images, can take an extended amount of time. You may contact the office 2-3 days following the exam to check the status of your report. A letter summarizing the exam will be sent to your physician.

When can I return to a normal diet?

You may return to your normal diet, 4 hours after swallowing the capsule, unless you are given other instructions.

Will I notice anything different?

You will not be aware of the capsule inside your body and you may not be aware when it is passed in a bowel movement.

What are the risks?

Having performed thousands of capsule examinations, the potential for problems related to the procedure is distinctly uncommon. Capsule technology has been used since the 1950s. They were initially used to transmit information concerning acid production. John Glenn swallowed a capsule when he recently went into space. His capsule transmitted core temperature data. Capsules have been found to stay intact in the body and do not break open.

One commonly expressed concern is that the capsule will become caught somewhere inside. Capsule endoscopy is contraindicated in patients with a history of bowel obstruction, bowel strictures, or fistulas. In these patients, the capsule can become lodged and surgery may be necessary to remove the capsule. In patients without symptoms of obstruction, e.g. without nausea, vomiting, and abdominal pain, the capsule has not become lodged and the exam is considered extremely safe.

Capsule endoscopy is contraindicated in patients with a pacemaker or implanted defibrillator.

The capsule is magnetic and thus patients should not go near a MRI during or after the procedure until the capsule passes from the body.

Capsule endoscopy is an exam of the small intestine only. It does not examine the stomach or colon. Furthermore, due to variations in a patient's intestinal motility, the capsule may only image part of the small intestine. It is also possible that due to interference, some images may be lost and this may result in the need to repeat the capsule procedure.

Who are we?

Dr. Lewis is a Clinical Professor of Medicine at the Mount Sinai School of Medicine. He is a world renown, board certified gastroenterologist who specializes in the field of endoscopy. He is past president of the New York Society for Gastrointestinal Endoscopy and the New York Academy of Gastroenterology. He served on the Board of Governors of the American College of Gastroenterology for 6 years. Dr. Lewis has written over 60 scientific papers and 23 chapters and he has authored 3 books; all in the field of gastrointestinal endoscopy. He is listed in the Best Doctors of America and has been listed as one of the best one hundred doctors in Manhattan. Dr. Lewis has helped pioneer the field of enteroscopy. He performed the first clinical trial of capsule endoscopy in the world and his data was the basis for FDA approval. He lectures nationally and internationally concerning this procedure. He is considered the world's expert in the fields of enteroscopy, capsule endoscopy and obscure gastrointestinal bleeding.

Who invented the capsule endoscope?

The endoscopic capsule was the idea of Dr. Gavriel Idan. He is an expert in the field of photography and developed the idea while on sabbatical in a Boston hospital. The capsule is manufactured by Given Imaging Limited located in Yoqneam, Israel. Their website is www.givenimaging.com.

What if I have other questions?

Please call us at 212-369-6600. Since there is nothing to fear, we want you to feel comfortable about Capsule Endoscopy. It is only through a relationship of high mutual trust and respect that we can achieve our common goal - your good health. We thank you and your physician for choosing us to participate in this phase of your evaluation.