Virtual Colonoscopy (CT Colonography)

A referral is required from a primary care physician or specialty provider. For more information, call the UW Health Virtual Colonoscopy Program office at (608) 263-9630.

What is virtual colonoscopy?

Three-dimensional (3-D) virtual colonoscopy, or CT colonography, uses CT scan technology to detect significant polyps that may become cancerous. Virtual colonoscopy (VC) is less invasive and less time-consuming than optical colonoscopy (OC) screening. Using FDA-approved evaluation software, UW Health Abdominal Imaging Radiologists, specially trained in virtual colonoscopy, are able to "fly" through the interior of the colon without having to insert an actual scope.

Virtual colonoscopy is an effective screening option recognized by the American Cancer Society, U.S. Preventive Services Task Force, U.S. Multisociety Task Force on Colorectal Cancer and the American College of Radiology.

UW Health offers different screening options because patients are more likely to be screened if they have a choice and can decide which method is best for them.

Know the facts

Fact: If polyps are detected during the virtual colonoscopy, we will arrange for the OC and gastrointestinal (GI) procedures to remove polyps for the same day, if possible, so the patient will not need to repeat the prep process.

Procedures will be scheduled for a different day if the patient:

- is taking anticoagulation medicine
- is unable to arrange a driver or transportation, since driving is not allowed after OC or GI procedures

A nurse on the VC care team will discuss follow-up options with the patient and ensure that the best possible care and treatment are provided.

Fact: Virtual colonoscopy uses a low-volume bowel prep, which is more convenient for patients who are healthy enough to tolerate magnesium citrate. The bowel prep kit, which is provided by UW Health Radiology, includes bisacodyl tablets, two 10-ounce bottles of magnesium citrate and oral contrast, which are taken the day before the exam.
In comparison, the optical colonoscopy preparation is typically a split-dose prep with a 4-liter jug of PEG or GoLytely solution, where the patient may drink the second dose either in the middle of the night or early the next morning.

IV contrast is not used during the VC exam; therefore, a Creatinine level is not needed. Allergies to IV contrast are not a contraindication to taking the oral contrast in the VC prep kit.

Fact: Virtual colonoscopy is an acceptable test to screen for colorectal cancer or polyps, even if the patient has symptoms, a family history of colorectal cancer or personal history of colon polyps.

Most patients will have some type of bowel-related symptom in their lives. If the ultimate goal is to screen for colorectal cancer or polyps, then VC is an acceptable test. An optical colonoscopy is preferred when the goal is to biopsy the colon to rule out inflammatory bowel disease or microscopic colitis, or there is high suspicion for an AVM (arteriovenous malformation).

UW Health's Virtual Colonoscopy Team

About 3 out of 4 patients diagnosed with colorectal cancer have no known family history. Preventive screening is important. UW Health's virtual colonoscopy screening program has found no significant difference in the rate of colorectal cancer from screening patients with and without a family history of colorectal cancer.

A personal history of colon polyps does not exclude patients from the option of VC for surveillance. Optical colonoscopy may be preferred if the patient has a personal history of advanced adenoma polyps.

Virtual Colonoscopy: Four screenings in one

- Colorectal cancer and polyps
- Abdominal aortic aneurysms
- Osteopenia and osteoporosis (CT bone mineral density)
- Extracolonic abnormalities and cancers

Patients may have better outcomes when conditions are caught prior to having symptoms. Virtual colonoscopy has detected significant abnormalities in asymptomatic patients, including:

- bilateral common iliac artery aneurysms with the possibility of impending rupture
- osteopenia or osteoporosis (with CT Bone Mineral Density) in patients who may not have qualified for screening with DEXA
- lymphoma, breast and lung cancer

CT bone mineral density (BMD) is performed at the same time as the virtual colonoscopy exam with no additional cost to the patient and no additional radiation at our Digestive Health Center, University Hospital and UW Health at The American Center locations. CT BMD is not currently available at the UW Health 1 S. Park Clinic.

The result is reported as a CT-derived DEXA-equivalent T-score of the femoral neck and therefore comparable to past DEXA results, if available.

UW Health

School of Medicine and Public Health
UNIVERSITY OF WISCONSIN–MADISON

uwhealth.org/virtual

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Who is a candidate for this procedure?

Screening virtual colonoscopy

- Adults, age 50 or older (screening may begin earlier if a first-degree relative has been previously diagnosed with colon cancer)
- Patients with medical conditions that increase their risk for complications with (optical) colonoscopy or intravenous sedation
- Patients on anticoagulation therapy
- Patients with prior incomplete optical colonoscopy or sigmoidoscopy

Diagnostic virtual colonoscopy

- Patients with gastrointestinal symptoms (e.g., significant change in bowel habits, rectal bleeding, history of colonic polyps, etc.)
- Patients with obstructing colorectal cancer
- Patients with a submucosal lesion found on another test (e.g., optical colonoscopy) that requires further evaluation

Who is not an ideal candidate?

- This exam should not be performed on patients with acute diverticulitis until four weeks after treatment is completed and symptoms resolve
- This exam is not recommended for patients with active inflammatory bowel disease (ulcerative colitis or Crohn's disease) or cancer syndromes (FAP, Lynch). This is not an absolute contraindication and virtual colonoscopy can be performed if the patient has had an incomplete optical colonoscopy or if they refuse a more invasive test for colorectal screening.

What potential benefits does virtual colonoscopy offer?

- Safe and effective method for detecting significant colorectal polyps
- Essentially no risk of bleeding or perforation
- Entire procedure takes approximately 20-30 minutes
- No need for intravenous sedation; patients can immediately return to normal activities
- No need for a patient to have someone drive them
- Can safely continue anticoagulation therapy
- Less costly than optical colonoscopy
- Same-day GI Clinic services are available to remove significant polyps (performed in < 10 percent of cases)
- Less-invasive surveillance with virtual colonoscopy is offered for small polyps (< 1 cm)
- Limited, 2-D evaluation of entire abdomen and pelvis, which may detect other conditions outside the colon
- Convenient UW Health locations include:
  - 1 S. Park Clinic
  - Digestive Health Center
  - University Hospital
  - UW Health at The American Center
- UW Health radiologists are active in research to enhance the field of virtual colonoscopy and colorectal cancer screening, including Dr. Pickhardt, the national leading medical expert on virtual colonoscopy
- First program in the United States to obtain third-party reimbursement for screening virtual colonoscopy

Figure 1: 3-D virtual colonoscopy study showing a large pedunculated polyp.

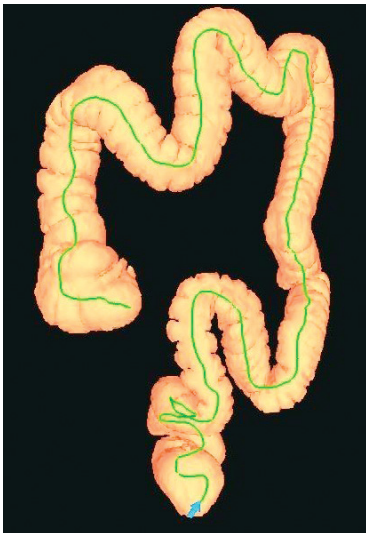

Figure 1A: 3-D map of the colon from screening virtual colonoscopy. The green line shows the automated centerline used for virtual "fly-through."

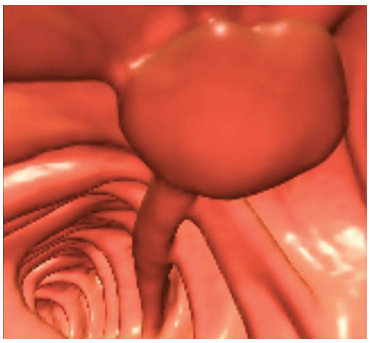

Figure 1B: 3-D endoluminal virtual colonoscopy image shows a large pedunculated polyp on a long stalk within the sigmoid colon.

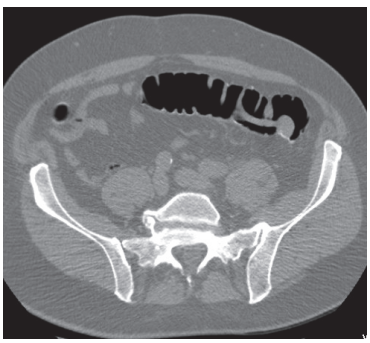

Figure 1C: Cross-sectional 2-D image confirms the polyp, which was removed at same-day conventional colonoscopy and proved to be a tubulovillous adenoma.

For more information, please call the UW Virtual Colonoscopy Program office at (608) 263-9630 or visit uwhealth.org/virtual

- 1 S. Park Clinic, 1 S. Park St. Madison, WI 53715
- Digestive Health Center, 750 University Row, Madison, WI 53705
- University Hospital, 600 Highland Ave., Madison, WI 53792
- UW Health at The American Center, 4602 Eastpark Blvd., Madison, WI 53718