

Computed Tomographic Colonography (for Kentucky Only)

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[Instructions for Use](#)

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Related Policies
None

Application

This Medical Policy only applies to the state of Kentucky.

Coverage Rationale

Computed tomographic colonography is proven and medically necessary in certain circumstances. For medical necessity clinical coverage criteria for computed tomographic colonography, refer to the InterQual® CP: Imaging, Imaging, Abdomen and Pelvis.

Click [here](#) to view the InterQual® criteria.

Due to insufficient evidence of efficacy, computed tomographic colonography is unproven and not medically necessary as a diagnostic tool for the following conditions:

- Diverticulitis
- Inflammatory bowel disease

Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

CPT Code	Description
74261	Computed tomographic (CT) colonography, diagnostic, including image postprocessing; without contrast material

CPT Code	Description
74262	Computed tomographic (CT) colonography, diagnostic, including image postprocessing; with contrast material(s) including non-contrast images, if performed
74263	Computed tomographic (CT) colonography, screening, including image postprocessing

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Description of Services

Colonoscopy is the “gold standard” screening test; however, it is invasive and frequently requires sedation or anesthesia, so screening rates are low.

Computed tomography colonography (CTC), also referred to as virtual colonoscopy (VC), is a less invasive method of colon cancer screening than optical colonoscopy (OC). It has been developed to obtain detailed 2-dimensional and 3-dimensional (3D) colonoscopic images of the colon and rectum using helical computed tomography (CT). These images are then reconstructed to produce computer-generated 3D images suitable for interpretation by a gastrointestinal radiologist. If suspicious lesions are detected, the individual usually undergoes further testing, including possible biopsy, via conventional colonoscopy (CC). Since CTC is less invasive than CC and does not require sedation, individuals may find it more acceptable, thereby improving compliance with colorectal cancer (CRC) screening recommendations.

Clinical Evidence

Other Intestinal Disorders

There is insufficient evidence regarding the effectiveness for CTC as a diagnostic tool for diverticulitis and/or inflammatory bowel disease; additional well designed RCTs are needed along with long-term effects for safety and efficacy.

Diverticulitis

A retrospective cohort study by Mäntymäki et al. (2023) was conducted to analyze the risk of CRC after CT verified uncomplicated and complicated acute diverticulitis in short-term and long-term follow-up to evaluate the feasibility of the primary CT imaging in separating patients with uncomplicated and complicated acute diverticulitis. The study population of 270 patients was divided into those with uncomplicated (n = 170) and complicated (n = 100) diverticulitis with a mean age of 61 years in the uncomplicated acute diverticulitis group and 64 years in the complicated acute diverticulitis group. Patient charts were reviewed 9-18 years after the initial acute diverticulitis episode. After CT verification of acute diverticulitis, 146 (54%) patients had further evaluation of their colon. Of these, 65 patients underwent endoscopy, 26 underwent CT colonography, 66 underwent barium enema, 5 underwent abdominal CT, and 16 had more than one examination. The authors reported that colorectal cancer (CRC) was found in 7 (2.6%) patients, but CRC was associated with acute diverticulitis in only 4 (1.5%) patients, that the short-term risk for CRC was 0.6% (1/170) in uncomplicated acute diverticulitis and 3.0% (3/100) in complicated acute diverticulitis, and that long-term follow-up showed no additional CRC in patients with complicated acute diverticulitis. Limitations of the study include the retrospective design, the small number of participants who had further evaluations, and the heterogeneity of follow-up studies, The authors concluded that the risk of underlying CRC is very low in CT-verified uncomplicated acute diverticulitis but is increased in complicated acute diverticulitis.

A retrospective study by Njølstad et al. (2021) evaluated the need for routine CTC after an episode of CT-verified uncomplicated sigmoid diverticulitis to rule out underlying colorectal malignancy. The study retrospectively evaluated 312 patients who were referred for routine colonic evaluation by CTC following an episode of acute diverticulitis from January 2012 to March 2018. There were 89 patients excluded because of a lack of a diagnostic CT of the abdomen at time of diagnosis, a presentation that included atypical colonic involvement, or due to CT findings suggestive of complicated disease (e.g., abscess or perforation). CTC exams were routinely reviewed by experienced abdominal radiology consultants on the day of the procedure and patients were referred to same-day optical colonoscopy if significant polyps were detected, or if colorectal malignancy could not be excluded. For these patients, medical records were reviewed for optical colonoscopy results and histology reports if applicable. Among the remaining 223 patients with CT-verified uncomplicated sigmoid diverticulitis, no patients were found to have underlying colorectal malignancy. Twenty-seven patients were referred for optical colonoscopy based on CTC findings with 18 of them consequently undergoing polypectomy, all with either hyperplastic or adenomatous histology. The authors concluded the study showed that routine colonic evaluation by CTC following an episode of CT-verified uncomplicated sigmoid

diverticulitis may be unwarranted and should be reserved for patients with protracted or atypical clinical course. The study was limited by its retrospective design which may have introduced selection bias, the small sample size, and the lack of long-term follow-up. The authors recommended future prospective studies with larger sample sizes and longer-term follow up to prove the clinical usefulness of this procedure.

A study conducted by Obana et al. (2013) enrolled a total of 52 patients with the aim of evaluating the ability of contrast-enhanced CT (CE-CT) in the detection of colonic diverticular bleeding (CDB). Patients were enrolled based on their ability to undergo both a CE-CT and a total colonoscopy. The patients were also known to have hematochezia and were clinically suspected of CDB. The detection rates for CE-CT and total colonoscopy were 15.4% versus 38.5%, respectively. Based on the results, this study concluded that though CE-CT may play a complementary role to colonoscopy in patients with suspected CDB, it is not recommended for all cases due to the low detection rate demonstrated during the course of the study. OC still remains the primary recommended screening tool.

With colonoscopy being the standard, Chabok et al. (2013) conducted a prospective comparative study assessing CTC in the follow-up of diverticulitis, evaluating patient acceptance and diagnostic accuracy for diverticular disease, adenomas, and cancer in 108 individuals. Half received colonoscopy first, followed immediately by CTC. The other half had the examinations in the reverse order, with results blinded to the examiners. The success rate was 91% and 86% for colonoscopy and CTC, respectively. Examination time was equal for both methods. While 83% of the participants received sedation during colonoscopy, they experienced colonoscopy as more painful and uncomfortable. Diverticulosis and polyps were detected in 94% and 20% with colonoscopy and in 94% and 29% with CTC, respectively. Sensitivity and specificity for CTC in the detection of diverticulosis was 99% and 67%, with a good agreement. Regarding detection of polyps, the sensitivity and specificity were 47% and 75%, respectively. The authors concluded that CTC was less painful and unpleasant and can be used for colonic investigation in the follow-up of diverticulitis. It is considered a viable alternative, especially in cases of incomplete colonoscopy or in a situation with limited colonoscopy resources.

In a prospective study by Hjern et al. (2007), 50 patients diagnosed with diverticulitis were assessed to determine whether CTC is a viable alternative to colonoscopy. Participants underwent CTC immediately followed by CC. The results were blinded to the examiners. Diverticular disease was found in 48 of the 50 (96%) patients utilizing CTC and in 45 of 50 (90%) patients with CC. These results indicate that CTC can provide at least the same level of accuracy as CC. The authors concluded that CTC appears to have a better diagnostic potential for imaging of diverticular disease-specific findings when compared with colonoscopy and is a reasonable alternative in follow-up of patients with symptomatic diverticular disease. The study design, however, did require that the CTC be completed prior to CC which may have introduced a biased response favoring CTC. In addition, residual gas from CTC may have contributed to greater discomfort during the subsequent colonoscopy. Further studies are needed to determine the efficacy of CTC as a follow-up diagnostic tool for diverticulitis.

Inflammatory Bowel Disease

Prabhakar et al. (2015) performed a study comparing the findings of CTC to CC in patients with ulcerative colitis (UC). Participants (n = 20) with known UC per biopsy and in clinical remission underwent CTC and CC within one week of each test. The results were blinded to the examiners. Sensitivity and specificity on CTC for detecting granular appearance were 81% and 73.8%, respectively; and for pseudopolyps were 82.1% and 84.5%, respectively. Loss of haustral folds, wall thickening, pericolic vascularity, and pericolic lymph nodes seen on CTC were found to correlate with intraluminal findings seen on CC. Participants preferred CTC over CC. The authors concluded that CTC can be used as an alternative to CC for evaluating patients with UC who are in remission.

Ichikawa, et al. retrospectively examined the performance of CTC for non-colorectal cancerous conditions. A total of 47 examinations were performed on 44 patients with the following illnesses/conditions: impossible or incomplete colonoscopy (n = 15), diverticular disease (7), non-colorectal malignancy (6), Crohn's disease (CD) (6), suspected submucosal tumor on colonoscopy (4), ischemic colitis (2), various other diseases (4). Colonic findings were diagnosed on CTC in 36 examinations, and extracolonic findings were identified in 35 of 44 patients. In all, 17 patients had undergone colonoscopy previously, nine (52.9%) of whom did not require further colonoscopy per CTC. Five patients underwent colonoscopy after CTC. The authors concluded that CTC examinations could be performed safely. Unlike colonoscopy or CT without preparation, CTC revealed colonic and extracolonic findings and may reduce the indication of colonoscopy in patients with non-colorectal cancerous conditions (2011).

Clinical Practice Guidelines

American Cancer Society (ACS)

In their guideline for CRC screening for average-risk adults, the ACS recommends that adults aged 45 years and older with an average risk of CRC undergo regular screening with either a high-sensitivity stool-based test or a structural (visual) examination, depending on patient preference and test availability. As a part of the screening process, all positive results on non-colonoscopy screening tests should be followed up with timely colonoscopy (qualified recommendation). The recommendation for regular screening in adults aged 50 years and older is a *strong recommendation* CTC is an acceptable structural examination which is recommended every five years if the initial CTC is negative for significant polyps. However, if current studies detect polyps of a significant size, the patient should be referred for colonoscopy (Wolf et al., 2018).

American College of Gastroenterology (ACG)

In a 2021 update to the 2009 CRC screening guidelines, the ACG states that CTC is a screening option for individuals unable to undergo colonoscopy or fecal immunochemical test (FIT), and a follow up diagnostic colonoscopy is required if the result is positive (Shaukat et al.).

In its 2018 clinical guideline on management of Crohn's Disease in Adults, the ACG does not cite CTC in the imaging studies that should be performed as part of the initial diagnostic workup or for disease management (Lichtenstein et al.).

American College of Radiology (ACR)

ACR Appropriateness Criteria for CRC screening cites the following regarding CTC:

- For average-risk individuals, age 50 or older, CTC is usually appropriate for CRC screening, then follow up every five years after initial negative result.
- For moderate-risk individuals (e.g., first-degree family history of cancer or adenoma), CTC is usually appropriate for CRC screening, then follow up every five years after initial negative result.
- For moderate-risk individuals after positive fecal occult blood test (FOBT) or positive fecal immunochemical test, CTC is usually appropriate for CRC detection.
- For high-risk individuals (e.g., hereditary nonpolyposis CRC, UC, or Crohn colitis), CTC is usually not appropriate, and colonoscopy is preferred because of its ability to obtain biopsies to look for dysplasia.
- For CRC screening after incomplete colonoscopy, CTC is usually appropriate for individuals at average, moderate, or high risk for CRC (Moreno et al., 2018).

The 2019 revision of the ACR Practice Parameters for the Performance of CTC in Adults lists the following indications and contraindications for a CTC examination which include, but are not limited to:

- Indications:
 - Screening examination in individuals who are at average or moderate risk for developing CRC. Screening of individuals who are at moderate risk for CRC may be managed individually based on clinical context or local practice patterns.
 - Surveillance examination in patients with a history of previous colonic neoplasm, depending on the appropriate clinical context.
 - Diagnostic examination in symptomatic patients, particularly in the setting of incomplete colonoscopy, including, but not limited to, those with the following:
 - Abdominal pain,
 - Diarrhea,
 - Constipation,
 - Gastrointestinal bleeding,
 - Anemia,
 - Intestinal obstruction,
 - Weight loss,
 - Following incomplete screening, surveillance, or diagnostic colonoscopy and for characterization of colorectal lesions indeterminate on OC.
 - Patients who may be at increased risk for complications during OC (e.g., advanced age, anticoagulant therapy, sedation risk, prior incomplete colonoscopy).
 - Follow-up of patients with a colonic stoma or after colectomy. Intubation of the stoma should be performed with caution to avoid colonic injury or perforation.

- Prior to laparoscopic surgery for CRC in order to accurately localize the tumor or search for synchronous lesions.
- Contraindications:
 - The relative contraindications or conditions that require caution in performing a CTC examination include, but are not limited to, the following:
 - Symptomatic acute colitis,
 - Acute diarrhea,
 - Recent acute diverticulitis,
 - Recent colorectal surgery,
 - Symptomatic colon-containing abdominal wall hernia,
 - Recent deep endoscopic biopsy or polypectomy/mucosectomy,
 - Known or suspected colonic perforation,
 - Symptomatic or high-grade small bowel obstruction.
 - CTC is not indicated for the following:
 - Routine follow-up of inflammatory bowel disease,
 - Hereditary polyposis or nonpolyposis cancer syndromes,
 - Evaluation of anal canal disease,
 - The pregnant or potentially pregnant patient (refer to the ACR–SPR Practice Parameter for Imaging Pregnant or Potentially Pregnant Adolescents and Women with Ionizing Radiation).

National Comprehensive Cancer Network (NCCN)

In its 2021 (updated April 2023) Colorectal Cancer (CRC) Screening guidelines, the NCCN stated the following:

- Computed tomographic colonography (CTC) is evolving as a promising technique and is considered a primary CRC screening modality.
- Available data indicate that CTC may be useful for the detection of larger polyps.
- Data on optimal frequency, polyp size leading to referral for colonoscopy, and protocol for evaluating extra-colonic lesions are evolving.
- If more than three polyps are 6 to 9 mm in size, or lesions greater than or equal to 10 cm are detected, colonoscopic surveillance is recommended.
- The American College of Radiology has recommended that the reporting of polyps < 5 mm in size is not necessary. However, if polyps of this size are reported, the decision to refer for colonoscopy with polypectomy versus surveillance colonoscopy should be individualized.

National Institute for Health and Care Excellence (NICE)

In its 2011 guidelines (updated 2022) addressing colonoscopic surveillance for prevention of CRC in individuals with UC, CD or adenomas, the use of CTC is no longer addressed. This guideline now refers out to their interventional procedures guidance on CTC (virtual colonoscopy).

NICE's 2005 interventional procedures guidance on CTC states that current evidence on the safety and efficacy of CTC appears adequate to support the use of this procedure to examine the colon and rectum to detect abnormalities such as polyps and cancer. The guideline also stated that the risks of missing small or flat lesions and of complications (such as bowel perforation and reaction to contrast medium) were similar to those of other diagnostic techniques.

The U.S. Multisociety Task Force on Colorectal Cancer

This society represents the American College of Gastroenterology, the American Gastroenterological Association, and the American Society for Gastrointestinal Endoscopy, and recommends that clinicians offer CRC screening beginning at age 45 with adjustments recommended based on race and family history. They also rank CRC screening tests in three tiers based on performance features, costs, and practical considerations. While colonoscopy is the preferred method, the MSTF suggests clinicians explore other screening options using this approach (Rex et al., 2017; updated Patel et al., 2022):

- Tier 1: Colonoscopy every 10 years and annual FIT.
- Tier 2: CTC every 5 years, FIT–fecal DNA test every 3 years, and FS every 5 to 10 years.
- Tier 3: Capsule colonoscopy every 5 years.

US Preventive Services Task Force (USPSTF)

In the 2021 final recommendation for colorectal cancer screening, the USPSTF recommends screening all adults aged 45 to 75 years old for colon cancer. Recommended screening strategies include computed tomography colonography every five years.

U.S. Food and Drug Administration (FDA)

This section is to be used for informational purposes only. FDA approval alone is not a basis for coverage.

Helical CT scanners are regulated by the FDA as Class II devices, and numerous systems have met all requirements of the 510(k)-approval process. Additional information can be found using product code JAK on the following website: <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPMN/PMN.cfm>. (Accessed August 1 2023)

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Policy History/Revision Information

Date	Summary of Changes
01/01/2024	Supporting Information <ul style="list-style-type: none">Updated <i>Clinical Evidence</i> and <i>References</i> sections to reflect the most current informationArchived previous policy version CS022KY.08

Instructions for Use

This Medical Policy provides assistance in interpreting UnitedHealthcare standard benefit plans. When deciding coverage, the federal, state, or contractual requirements for benefit plan coverage must be referenced as the terms of the federal, state, or contractual requirements for benefit plan coverage may differ from the standard benefit plan. In the event of a conflict, the federal, state, or contractual requirements for benefit plan coverage govern. Before using this policy, please check the federal, state, or contractual requirements for benefit plan coverage. UnitedHealthcare reserves the right to modify its Policies and Guidelines as necessary. This Medical Policy is provided for informational purposes. It does not constitute medical advice.

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