Florida Statewide Cancer Registry
Florida Cancer Data System

2021-2022 FCDS Educational Webcast Series

2021 Colon and Rectum: Recent Updates and How to Use 2021 Resources for Cases

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December 17, 2021

1

1

CDC & Florida DOH Attribution

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Florida HEALTH

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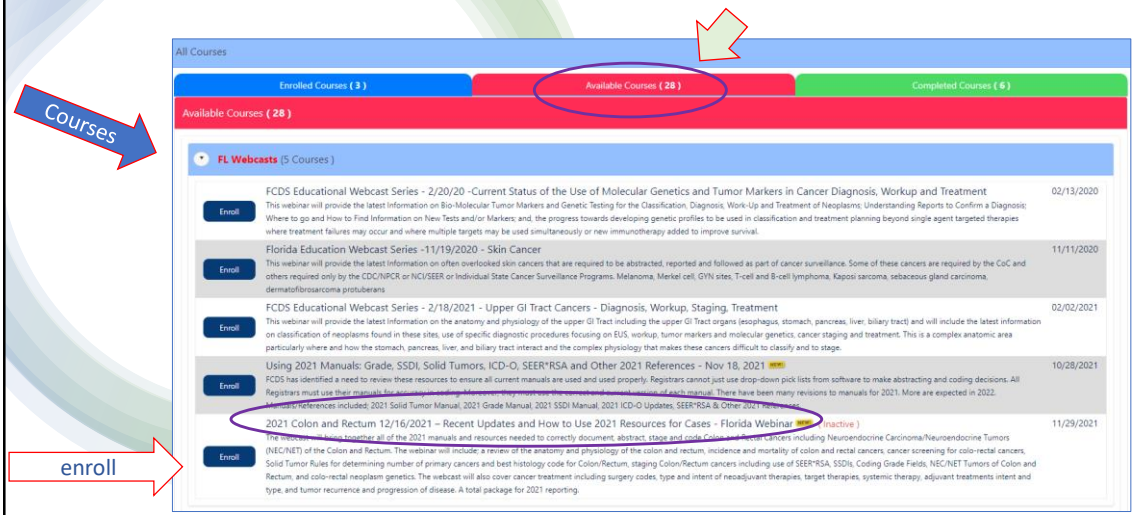
FLccSC and CEU Certificate

You Must Take and Pass a 5 Question CEU Quiz to get a CEU Certificate – 2 CEUs



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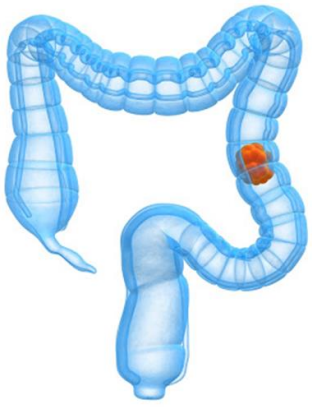
2021 Colon & Rectum Outline

- Introduction to Neoplasms of the Colon & Rectum
- 2021 Statistics for Colorectal Cancers
- Risk Factors – Signs & Symptoms
- Anatomy of the Colon & Rectum
- Screening Guidelines, Diagnostic Workup, and Lab Tests
- Biological Tumor Markers, Single and Multi-Gene Testing
- 2021 Colon/Rectum ICD-O-3.2 – Review Histology
- 2021 Colon/Rectum Solid Tumor Rules – Histology
- 2021 Colon/Rectum/NEC/NET Grade Coding Rules
- 2021 Colon/Rectum/NEC/NET Site-Specific Data Items
- 2021 Staging for Colon/Rectum – SS2018 Focus
- 2021 NCCN Treatment Guidelines for Colon/Rectum
- 2021 NCCN Treatment Guidelines for Neuroendocrine - NET/NEC
- Text Documentation for Colorectal Cancers
- Miscellaneous Notes – Impact of Covid-19
- Presentation References
- Questions



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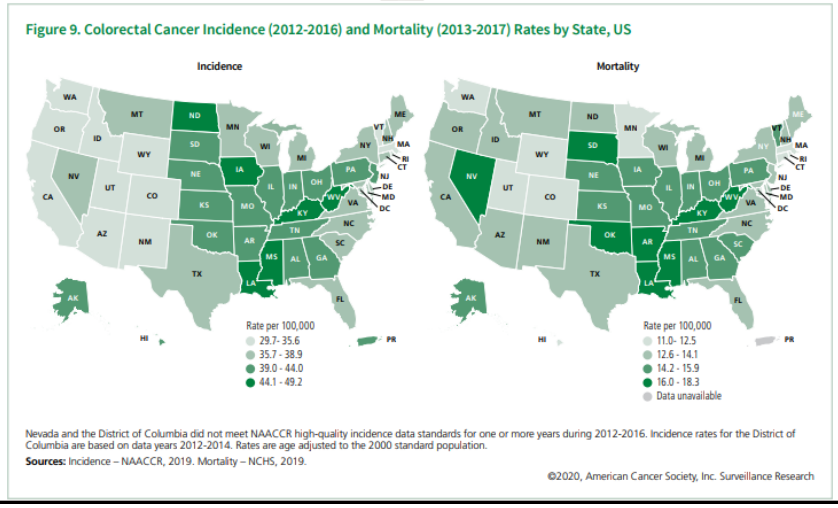
Introduction to Neoplasms of the Colon & Rectum



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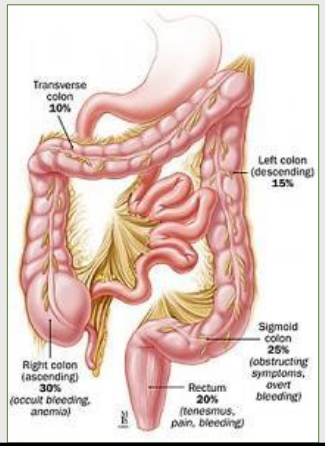
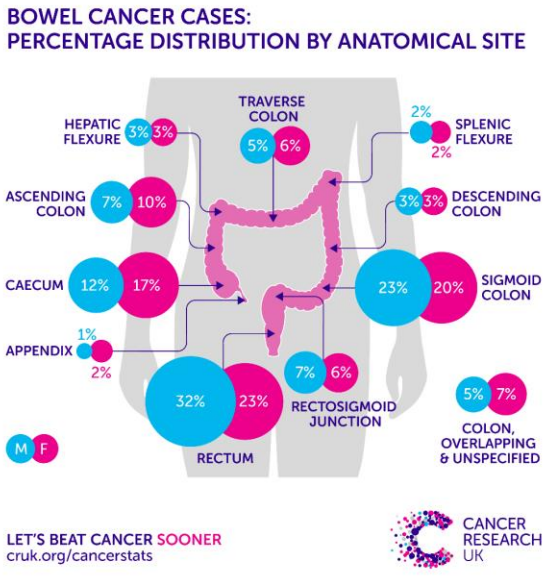
Introduction to Neoplasms of the Colon & Rectum





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https://www.cancerresearchuk.org/health professional/cancer statistics/

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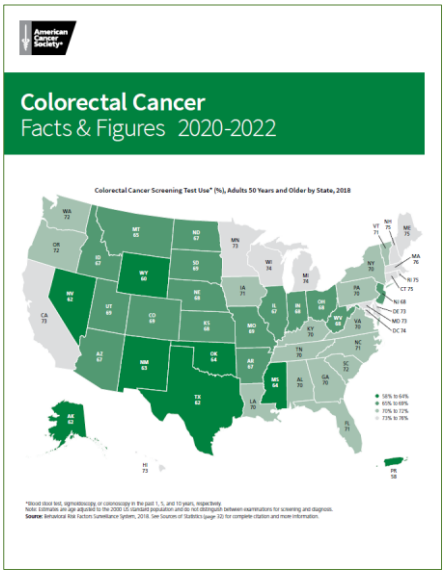
Statistics



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Statistics

Figure 3. Leading Sites of New Cancer Cases and Deaths – 2021 Estimates

	Male			Female		
Estimated New Cases	Prostate	248,530	26%	Breast	281,550	30%
	Lung & bronchus	119,100	12%	Lung & bronchus	116,660	13%
	Colon & rectum	79,520	8%	Colon & rectum	69,980	8%
	Urinary bladder	64,280	7%	Uterine corpus	66,570	7%
	Melanoma of the skin	62,260	6%	Melanoma of the skin	43,850	5%
	Kidney & renal pelvis	48,780	5%	Non-Hodgkin lymphoma	35,930	4%
	Non-Hodgkin lymphoma	45,630	5%	Thyroid	32,130	3%
	Oral cavity & pharynx	38,800	4%	Pancreas	28,480	3%
	Leukemia	35,530	4%	Kidney & renal pelvis	27,300	3%
	Pancreas	31,950	3%	Leukemia	25,560	3%
	All sites	970,250		All sites	927,910	

	Male			Female		
Estimated Deaths	Lung & bronchus	69,410	22%	Lung & bronchus	62,470	22%
	Prostate	34,130	11%	Breast	43,600	15%
	Colon & rectum	28,520	9%	Colon & rectum	24,460	8%
	Pancreas	25,270	8%	Pancreas	22,950	8%
	Liver & intrahepatic bile duct	20,300	6%	Ovary	13,770	5%
	Leukemia	13,900	4%	Uterine corpus	12,940	4%
	Esophagus	12,410	4%	Liver & intrahepatic bile duct	9,930	3%
	Urinary bladder	12,260	4%	Leukemia	9,760	3%
	Non-Hodgkin lymphoma	12,170	4%	Non-Hodgkin lymphoma	8,550	3%
	Brain & other nervous system	10,500	3%	Brain & other nervous system	8,100	3%
	All sites	319,420		All sites	289,150	

Estimates are rounded to the nearest 10, and cases exclude basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder. Estimates do not include Puerto Rico or other US territories. Ranking is based on modeled projections and may differ from the most recent observed data.

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ACS – Cancer Facts & Figures 2021

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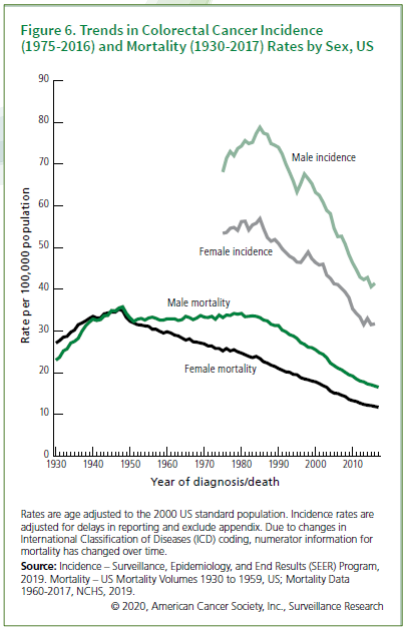
Statistics



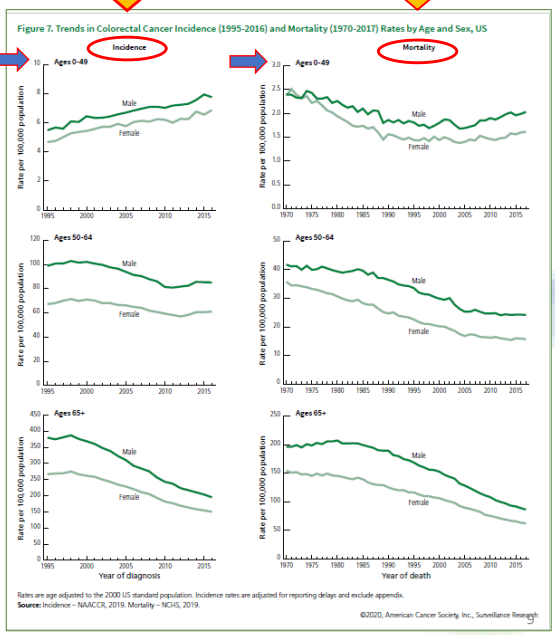


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Table 3. Relative Risks for Established Colorectal Cancer Risk Factors

	Relative risk*
Factors that increase risk:	
Heredity and medical history	
Family history[84]	
CRC	
1 or more first-degree relatives	2.2
1 or more first-degree relatives diagnosed before age 50	3.6
2 or more first-degree relatives	4.0
1 or more second-degree relatives	1.7
Adenoma	
1 or more first-degree relatives	2.0
Inflammatory bowel disease[115]	1.7
Type 2 diabetes[124]	
Male	1.4
Female	1.2†
Modifiable factors	
Heavy alcohol (daily average >3 drinks)[106]	1.3
Obesity (body mass index ≥30 kg/m²)[146]	1.3
Colon, male	1.5
Colon, female	1.1
Rectum, male	1.3
Rectum, female	1.0†
Red meat (100 g/day)[106]	1.1
Processed meat (50 g/day)[106]	1.2
Smoking[106]	
Current vs. never	1.5
Former vs. never	1.2
Factors that decrease risk:	
Physical activity[128]	0.7
Dairy (400 g/day)[106]	0.9

*Relative risk compares the risk of disease among people with a particular "exposure" to the risk among people without that exposure. Relative risk for dietary factors compares the highest with the lowest consumption. If the relative risk is more than 1.0, then risk is higher among exposed than unexposed persons. Relative risks less than 1.0 indicate a protective effect.
†Relative risk was not statistically significant.
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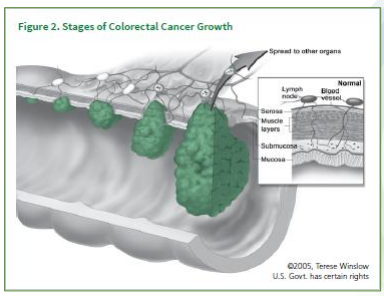
Risk Factors – Signs & Symptoms

Common Symptoms

- Bleeding from the rectum
- Dark or black stools
- Decreased appetite
- Unintentional weight loss
- Blood in the stool or in the toilet after a bowel movement
- A change in bowel habits or the shape of the stool
- Cramping, pain, or discomfort in the lower abdomen
- Urge to have a bowel movement when bowel is empty
- Constipation or diarrhea that lasts for more than a few days



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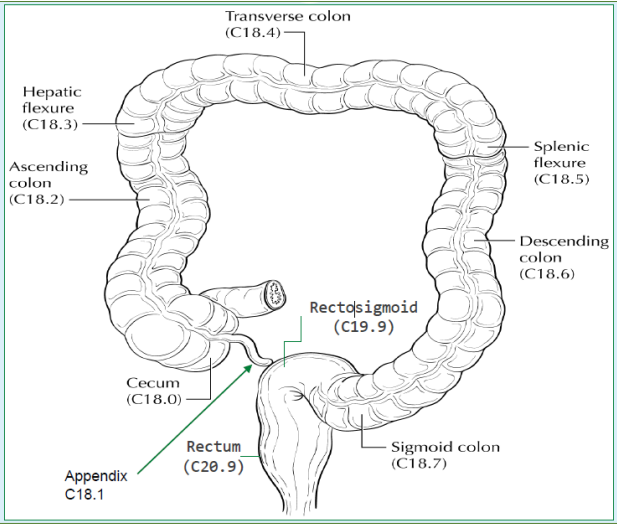
Anatomy of the Colon & Rectum

RIGHT COLON



LEFT COLON

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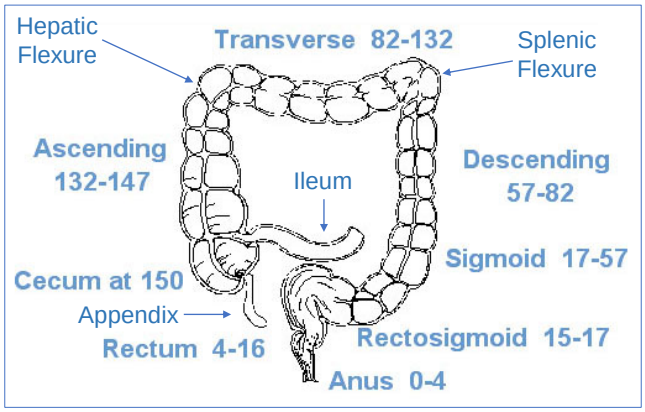
Anatomy of the Colon & Rectum



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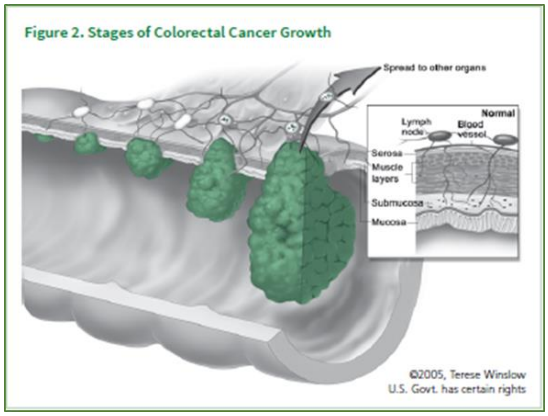
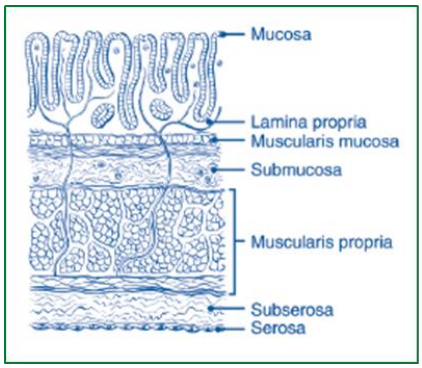
Anatomy of the Colon & Rectum





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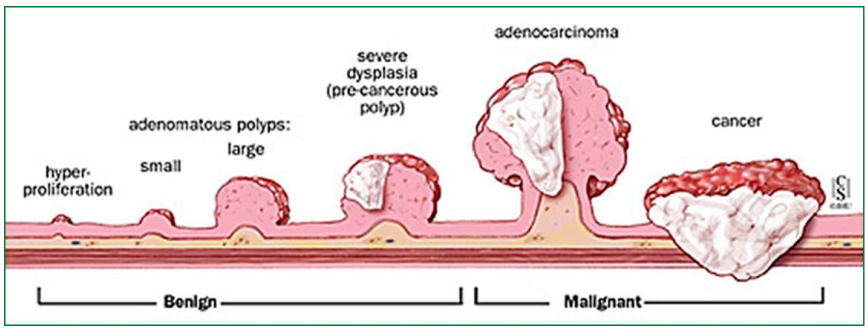
Anatomy of the Colon & Rectum



http://hopkinscoloncancercenter.org

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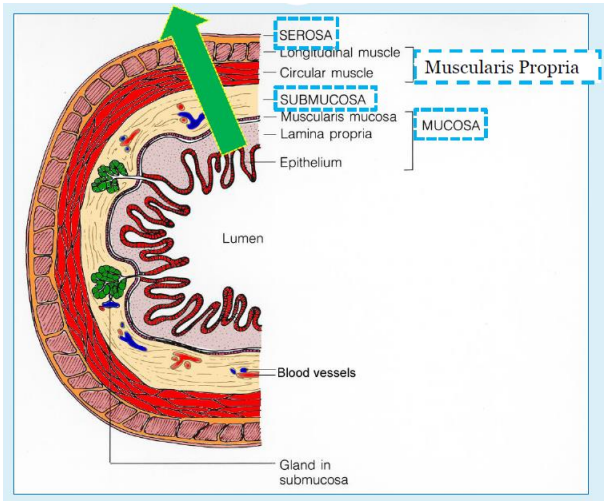
Anatomy of the Colon & Rectum



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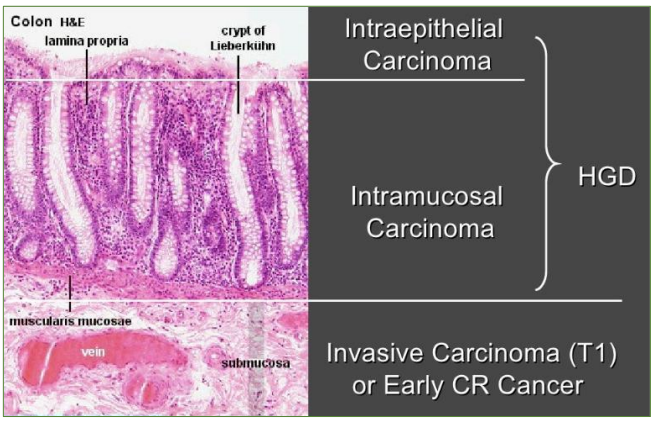
Anatomy of the Colon & Rectum



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16

Anatomy of the Colon & Rectum

- Invasion into "pericolonic/pericolorectal tissue" can be either Localized or Regional, depending on the primary site. Some sites are entirely peritonealized; some sites are only partially peritonealized or have no peritoneum. Localized may not be used for sites that are entirely peritonealized (cecum, transverse colon, sigmoid colon, rectosigmoid colon, upper third of rectum).
- **Localized**
  - Invasion through muscularis propria or muscularis, NOS
  - Non-peritonealized pericolic/perirectal tissues invaded [Ascending Colon/Descending Colon/Hepatic Flexure/Splenic Flexure/Upper two thirds of rectum: Posterior surface; lower third of rectum]
  - Subserosal tissue/(sub)serosal fat invaded – T3 – this is the fat that is layered just under or inside the serosa

  - Extension through wall, NOS
  - Intramucosal, NOS
  - Lamina propria
  - Mucosa, NOS
  - Muscularis mucosae
  - Muscularis, NOS
  - Muscularis propria
  - Submucosa (superficial invasion)
  - Polyp (head, stalk, NOS)

If the pathologist does not further describe the "pericolic/perirectal tissues" as either "non-peritonealized pericolic/perirectal tissues" vs "peritonealized pericolic/perirectal tissues" fat and the gross description does not describe the tumor relation to the serosa/peritoneal surface, and it cannot be determined whether the tumor arises in a peritonealized portion of the colon, code Localized.

17

17

Anatomy of the Colon & Rectum

- Invasion into "pericolonic/pericolorectal tissue" can be either Localized or Regional, depending on the primary site. Some sites are entirely peritonealized; some sites are only partially peritonealized or have no peritoneum. Localized may not be used for sites that are entirely peritonealized (cecum, transverse colon, sigmoid colon, rectosigmoid colon, upper third of rectum).
- **Regional**
  - Mesentery
  - Peritonealized pericolic/perirectal tissues invaded [Ascending Colon/Descending Colon/Hepatic Flexure/Splenic Flexure/Upper third of rectum: anterior and lateral surfaces; Cecum; Sigmoid Colon; Transverse Colon; Rectosigmoid; Rectum: middle third anterior surface)
  - Pericolic/Perirectal fat – T4 – this is the fat that surrounds the outside of the colon wall – outside the serosa – so once it is thru the serosa – it is regional direct extension – unless it is in a peritonelized site – a site that has no serosa – then once it is thru the muscularis mucosa it directly invades the parietal peritoneum – not the visceral peritoneum surrounding the colon but the parietal peritoneum of the body cavity.

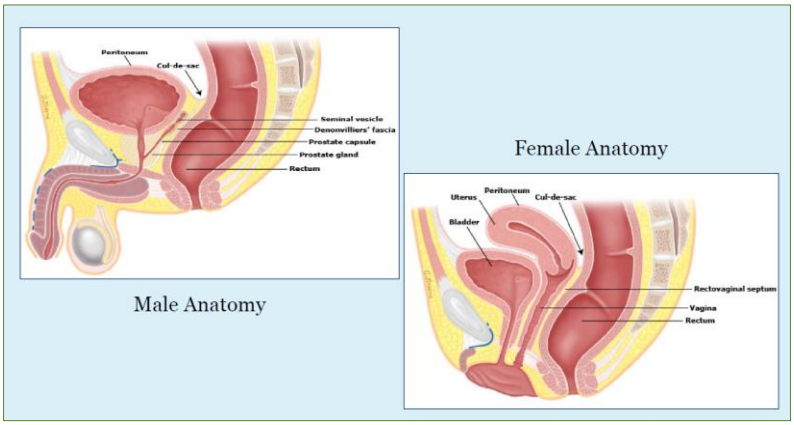
  - Abdominal wall
  - Adherent to other organs or structures clinically with no microscopic examination
  - Adjacent (connective) tissue(s), NOS
  - Fat, NOS
  - Mesentery (including mesenteric fat, mesocolon)
  - Mesothelium
  - Pericolic fat
  - Perirectal fat
  - Peritonealized pericolic/perirectal tissues invaded
  - Retroperitoneum (excluding fat)
  - Serosa
  - Small intestine
  - Tumor found in adhesion(s) if microscopic examination performed
  - Tunica serosa

Tumors characterized by involvement of the serosal surface (visceral peritoneum) by direct extension or perforation in which the tumor cells are continuous with the serosal surface through inflammation are coded to regional.

18

18

Anatomy of the Colon & Rectum



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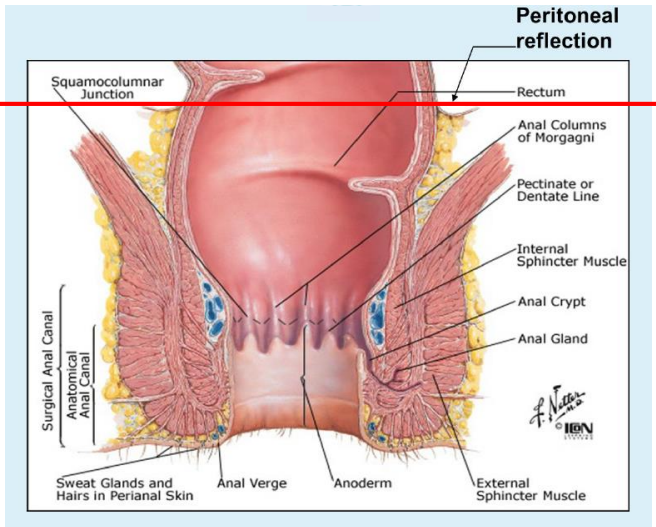
Anatomy of the Colon & Rectum



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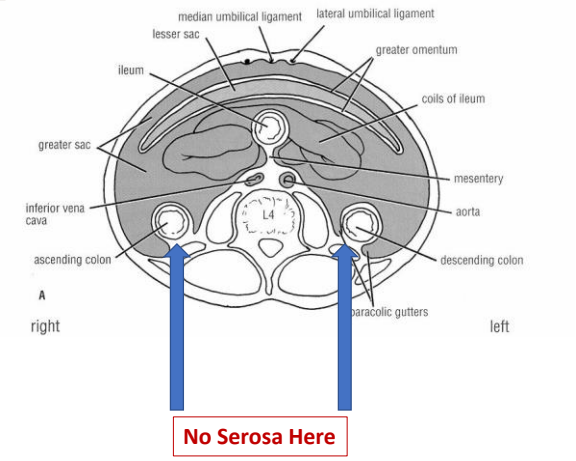
20

Anatomy of the Colon & Rectum

- **The serosa acts as barrier for tumors that begin on inside surface of the colon and invade down into the mucosa and through the wall of the colon (the serosa).**
- **Some colon surfaces have no serosa at the exterior surface (around the hollow organ)**
- **When there is no serosa you lose a natural barrier that helps contain the colon cancer**
- **Non Peritonealized Surfaces in Colon Rectum:**
  - **Rectum no serosa in rectum below peritoneal reflection**
  - **Descending Colon no serosa covering posterior surfaces**
  - **Ascending Colon no serosa covering posterior surfaces**



No Serosa Here

Clinical Anatomy for Medical Students, 5th Edition, Richard S. Snell. Little, Brown and Company, 1995.

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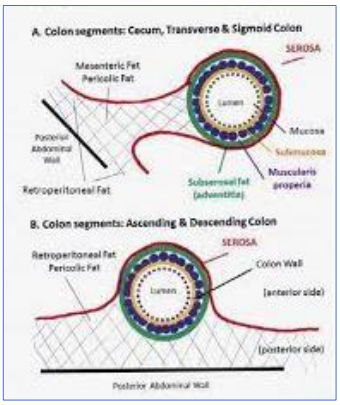
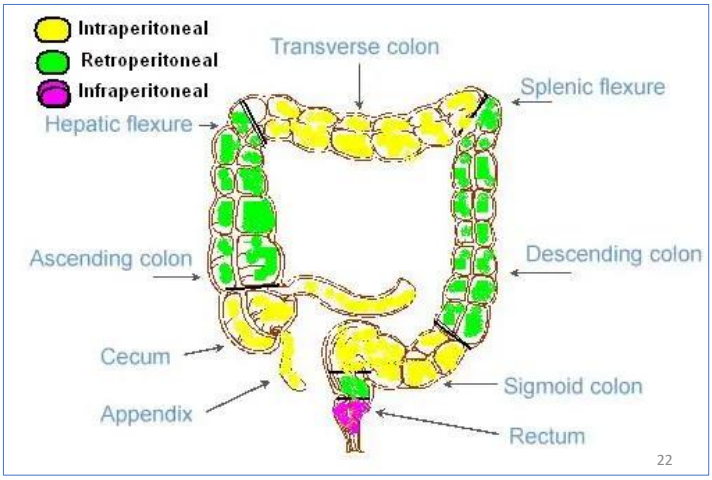
Anatomy of the Colon & Rectum





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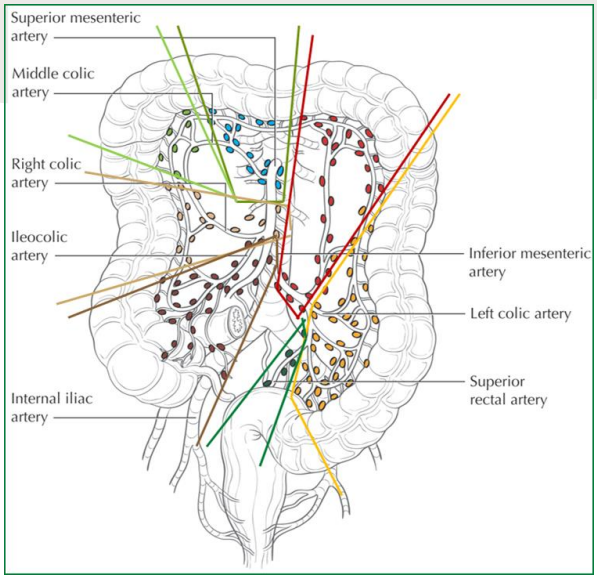
Anatomy of the Colon & Rectum



Modified AJCC Image - The regional lymph nodes of the colon and rectum are colored by anatomic location.

23

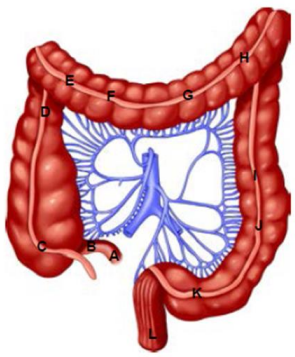
23

Anatomy of the Colon & Rectum

DEFINITIONS OF COMMON COLORECTAL RESECTIONS

The extent of colorectal resection depends on the location of the tumor, any underlying condition (eg, inflammatory bowel disease, hereditary syndrome), and the vascular supply to the colorectum.

Definitions of common colorectal resections are as follows:[1]



A through C	Ileocecectomy
A through D	Ascending colectomy
A through F	Right hemicolectomy
A through G	Extended right hemicolectomy
E through H	Transverse colectomy
G through I	Left hemicolectomy
F through I	Extended left hemicolectomy
J through K	Sigmoid colectomy
A through J	Subtotal colectomy
A through K	Total colectomy
K through L	Low anterior resection with sphincter preservation
K through L	Abdominoperineal resection without sphincter preservation

[1]Adapted and reprinted with permission from Bullard KM and Rothenberger DA. (2005). Colon, Rectum, and Anus. In Brunicardi C (Ed.) Schwartz's Principles of Surgery, 8th Edition, page 1069. McGraw Hill: New York, NY.

NCCN Guidelines – Colorectal Cancer Screening

24

24

Screening Guidelines, Diagnostic Workup, and Lab Tests

Table 4. Characteristics of Recommended Colorectal Cancer Screening Tests

	Benefits	Performance & Complexity*	Limitations	Test Time Interval
Visual Examinations				
Colonoscopy	• Examines entire colon • Can biopsy and remove polyps • Can diagnose other diseases • Required for abnormal results from all other tests	**Performance:** Highest **Complexity:** Highest	• Full bowel cleansing • Can be expensive • Sedation usually needed, necessitating a chaperone to return home • Patient may miss a day of work. • Highest risk of bowel tears or infections compared with other tests	10 years†
Computed tomographic colonography (CTC)	• Examines entire colon • Fairly quick • Few complications • No sedation needed • Noninvasive	**Performance:** High (for large polyps) **Complexity:** Intermediate	• Full bowel cleansing • Cannot remove polyps or perform biopsies • Exposure to low-dose radiation • Colonoscopy necessary if positive • Not covered by all insurance plans	5 years
Flexible sigmoidoscopy	• Fairly quick • Few complications • Minimal bowel preparation • Does not require sedation or a specialist	**Performance:** High for rectum & lower one-third of the colon **Complexity:** Intermediate	• Partial bowel cleansing • Views only one-third of colon • Cannot remove large polyps • Small risk of infection or bowel tear • Slightly more effective when combined with annual fecal occult blood testing • Colonoscopy necessary if positive • Limited availability	5 years
Stool Tests (Low-sensitivity stool tests, such as single-sample FOBT done in the doctor's office or toilet bowl tests, are not recommended.)				
Fecal immuno-chemical test (FIT)	• No bowel cleansing or sedation • Performed at home • Low cost • Noninvasive	**Performance:** Intermediate for cancer **Complexity:** Low	• Requires multiple stool samples • Will miss most polyps • May produce false-positive test results • Slightly more effective when combined with a flexible sigmoidoscopy every five years • Colonoscopy necessary if positive	Annual
High-sensitivity guaiac-based fecal occult blood test (gFOBT)	• No bowel cleansing or sedation • Performed at home • Low cost • Noninvasive	**Performance:** Intermediate for cancer **Complexity:** Low	• Requires multiple stool samples • Will miss most polyps • May produce false-positive test results • Pre-test dietary limitations • Slightly more effective when combined with a flexible sigmoidoscopy every five years • Colonoscopy necessary if positive	Annual
Multitargeted stool DNA test (Cologuard®)	• No bowel cleansing or sedation • Performed at home • Requires only a single stool sample • Noninvasive	**Performance:** Intermediate for cancer **Complexity:** Low	• Will miss most polyps • More false-positive results than other tests • Higher cost than gFOBT and FIT • Colonoscopy necessary if positive	3 years, per manufacturer's recommendation

*Complexity involves patient preparation, inconvenience, facilities and equipment needed, and patient discomfort. †For average-risk individuals, e.g., does not apply to those who have a history of adenoma.

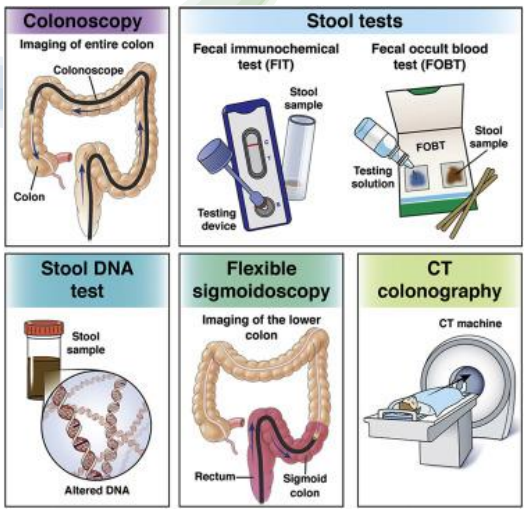
The 2018 American Cancer Society CRC screening guideline recommends that adults ages 45 years and older undergo regular screening with a high-sensitivity stool-based test or visual examination (described below), depending on patient preference and test availability.

As part of the screening process, all positive results on non-colonoscopy screening tests should be followed up with a timely colonoscopy because delays in follow-up of abnormal results increase the risk of advanced CRC and CRC death.

The age to initiate CRC screening was lowered from 50 to 45 years because incidence rates are increasing in younger populations, and modeling studies demonstrated that the balance of benefit to harm was more favorable for beginning screening at age 45 than at 50.

25

Screening Tests – FIT, gFOBT, Multi-Target Stool DNA (Cologuard)



	Colonoscopy THE GOLD STANDARD Visual Test	Cologuard® Stool DNA Technology	FIT Fecal Blood Test
Screens for colon cancer	✓	✓	✓
Most insurance companies pay for first screening*	✓	✓	✓
At-home test		✓	✓
Diagnoses colon cancer	✓		
BOTH screens and prevents colon cancer	✓		
Test views the entire colon and rectum for abnormalities	✓		
Test identifies and removes precancerous polyps	✓		
Frequency	Every 10 years	Every 3 years	Every year
Cost: *First Test: Screening	Most insurance companies cover preventive colon cancer screening at no cost to you, the patient. If an at-home test has abnormal results, then a follow-up (diagnostic) colonoscopy is required.		
Cost: Second Test: Diagnostic	Diagnostic colonoscopy is subject to your copay, coinsurance and/or deductible – additional out-of-pocket expense for you.		

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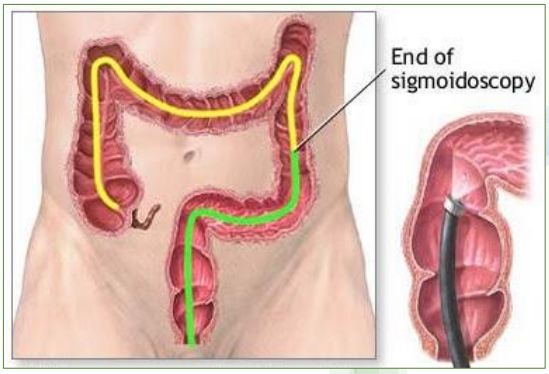
Cologuard vs Sigmoidoscopy vs Screening Colonoscopy



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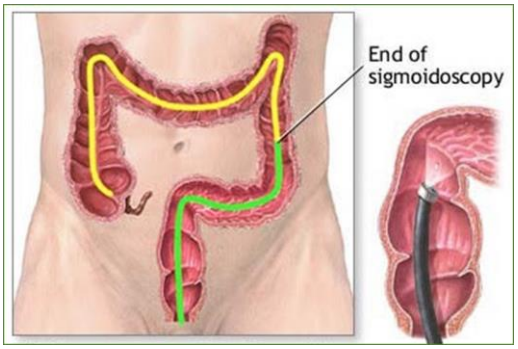
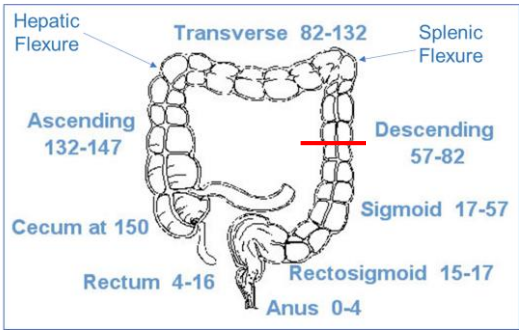




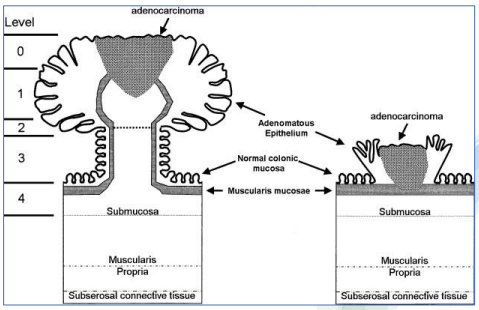
Screening Colonoscopy – Diagnostic Workup

28

28

Diagnostic Workup – Polyp – MMR/MSI Testing

- Polyp with Invasive Cancer (pedunculated – not Tis)
  - Colonoscopy - Mark Polyp Site
  - Pathology Review
    - Favorable histologic features
    - Clear margins
  - MMR/MSI Testing *
  - Observe
- Polyp with Invasive Cancer (sessile polyp – not Tis)
  - Colonoscopy - Mark Polyp Site
  - Pathology Review
    - Unfavorable histologic features
    - Margins cannot be assessed
  - MMR/MSI Testing *
  - Colectomy with en bloc removal of regional lymph nodes



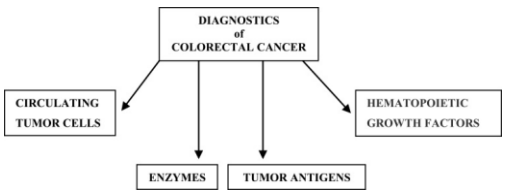
* **Microsatellite Instability or Mismatch Repair Testing**
• **Universal mismatch repair (MMR)[a] or microsatellite instability (MSI)[a] testing is recommended in all newly diagnosed patients with colon cancer.** See NCCN Guidelines for Genetic/Familial High-Risk Assessment: Colorectal.

29

29

Biological Tumor Markers, Single and Multi-Gene Testing

- Markers of Colorectal Cancer
  - CEA – carcinoembryonic antigen
  - CA 19.9 – carbohydrate antigen
  - TPS – tissue polypeptide specific antigen
  - TAG-72 – tumor-associated glycoprotein-72
  - HGFs – Hematopoietic Growth Factors – EGFR, HER2, ERBB2
  - Enzymes
  - ctDNA – Circulating Tumor Cells DNA analysis – liquid biopsy
  - KRAS Mutations – molecular testing for targeted therapy
  - Other Mutations - BRAF, NRAS, PIK3CA, TS, P21, PTEN, NTRK



Diagnostic Criteria for Markers of Colorectal Cancer

Group/Markers	Diagnostic Sensitivity (%)	Diagnostic Specificity (%)
Tumor antigens		
Carcinoembryonic antigen CEA[10,22]	64	90
Carbohydrate antigen CA 19–9[15]	34	55
Tissue polypeptide specific antigen TPS[16]	95	83
Tumor-associated glycoprotein-72 TAG-72[19]	40	77
Hematopoietic growth factors (HGFs)		
Stem cell factor (SCF)[24]	89	17
Granulocyte-colony stimulating factor (G-CSF)[21]	31	95
Macrophage-colony stimulating factor (M-CSF)[21]	65	95
Interleukin6[22]	72	96
Interleukin3[24]	55	80
Enzymes		
Alcohol dehydrogenase (ADH)[27]	60	70
Isoenzyme class I of ADH[27]	76	82
N-acetyl-β-D-hexosaminidase (HEX) in serum[28]	90	95
N-acetyl-β-D-hexosaminidase (HEX) in urine[28]	86	81
CathepsinD[31]	91	93
Ornithine decarboxylase (ODC)[35]	82	85
Circulating tumor cells		
Cytokeratin 20 (CK20)[39]	No data	No data 56
Multidrug resistance-related proteins (MRPs)[41]	No data	No data

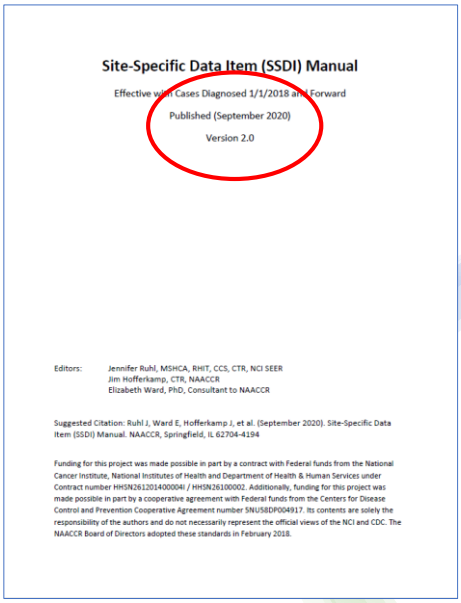
Biochemical Markers for Colorectal Cancer – Present and Future - Published online 2020 Jun 22.
doi: 10.2147/CMAR.S253369; PMCID: PMC7319530; PMID: 32606968

30

30

2021 Colon/Rectum/NEC/NET Site-Specific Data Items

- Colon and Rectum
  - CEA Pretreatment Lab Value
  - CEA Pretreatment Interpretation
  - Circumferential Resection Margin (CRM)
  - KRAS
  - Microsatellite Instability (MSI)
  - Perineural Invasion
  - Tumor Deposits
  - BRAF Mutational Analysis
  - NRAS Mutational Analysis
- Colon and Rectum NET/NEC Neoplams
  - * Ki-67



Site-Specific Data Item (SSDI) Manual

Effective with Cases Diagnosed 1/1/2018 and Forward

Published (September 2020)

Version 2.0

Editors: Jennifer Ruhl, MSHCA, RHIT, CCS, CTR, NCI SEER
Jim Hofferkamp, CTR, NAACCR
Elizabeth Ward, PhD, Consultant to NAACCR

Suggested Citation: Ruhl J, Ward E, Hofferkamp J, et al. (September 2020). Site-Specific Data Item (SSDI) Manual. NAACCR, Springfield, IL 62704-4194

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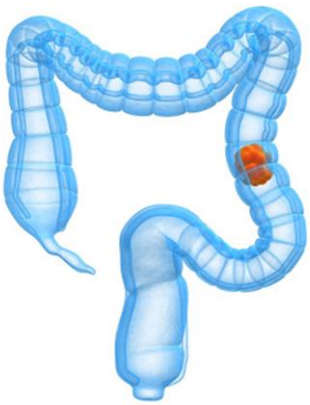
31

31

2021 Updates Colon & Rectum All Manuals

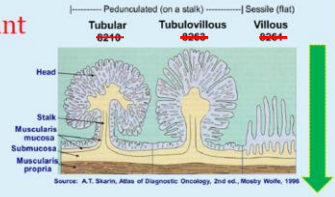


32

32

2021 Colon/Rectum ICD-O-3.2 Updates
Typical Histologic Types in Colon & Rectum

- 95-98% of colon cancers - adenocarcinoma
  - Most originate in polyps or adenomas – DO NOT CODE POLYPS !!!!
  - 10% of all adenomas develop into adenocarcinoma
  - **DO NOT USE 8210, 8260, 8261, 8263, 8264 for C18.0-C20.9**
- Types of adenoma – still important
  - Tubular
  - Villous
  - Tubulo-villous
- Process takes up to 10 years



- De Novo Cancers – mucinous, signet ring > 50% production
  - >10% of all colon ca are mucinous (>50% mucin production)
  - <1% of all colon ca are signet ring cell (>50% signet rings)

DO code adenocarcinoma in familial adenomatous polyposis coli (FAP) 8220 when clinical history says the patient has familial polyposis **AND**

- The final diagnosis on the pathology report from resection is adenocarcinoma in FAP **OR**
- There are greater than 100 polyps identified in the resected specimen

Polyps are now **disregarded** when coding histology. For example, adenocarcinoma in an adenomatous polyp is coded as adenocarcinoma 8140. For the purposes of determining multiple primaries, tumors coded as adenocarcinoma in a polyp for pre-2018 cases should be treated as adenocarcinoma 8140.

33

33

2021 Colon/Rectum ICD-O-3.2 Updates
Typical Histologic Types in Colon & Rectum

- Code invasive mucinous adenocarcinoma 8480 when the diagnosis is any of the following:
  - Exactly "mucinous adenocarcinoma" (no modifiers)
  - Mucinous carcinoma documented as greater than 50%
  - Adenocarcinoma and mucinous carcinoma, where mucinous carcinoma is documented to be greater than 50% of the tumor

- Code invasive signet ring cell adenocarcinoma 8490 when the diagnosis is any of the following:
  - Exactly signet ring cell carcinoma (no modifiers)
  - Signet ring cell carcinoma documented as greater than 50%
  - Adenocarcinoma and signet ring cell carcinoma, where signet ring cell is documented to be greater than 50% of the tumor

- Code adenocarcinoma NOS 8140 when the final diagnosis is:
  - Adenocarcinoma and mucinous carcinoma
    - Percentage of mucinous unknown/not documented
    - Mucinous documented as less than or equal to 50% of tumor
  - Adenocarcinoma and signet ring cell carcinoma
    - Percentage of signet ring unknown/not documented
    - Signet ring cell documented as less than or equal to 50% of tumor
  - Exactly adenocarcinoma
  - Intestinal type adenocarcinoma OR adenocarcinoma intestinal type

34

34

2021 Colon/Rectum ICD-O-3.2 Updates
Typical Histologic Types in Colon & Rectum

- **Endocrine System Link to Nervous System:** The endocrine system works alongside of the nervous system to form the control systems of the body. The nervous system provides a very fast and narrowly targeted system to turn on specific glands and muscles throughout the body. The endocrine system, on the other hand, is much slower acting, but has very widespread, long lasting, and powerful effects. Hormones are distributed by glands through the bloodstream to the entire body, affecting any cell with a receptor for a particular hormone. Most hormones affect cells in several organs or throughout the entire body, leading to many diverse and powerful responses.
- **(Neuro) Endocrine System includes the Endocrine System PLUS the Diffuse Neuroendocrine System**
- The Diffuse Neuroendocrine System or Diffuse NES is made up of scattered neuroendocrine cells distributed throughout the body each location serving different function no organ/gland
- Diffuse NES Examples:
  - Digestive NES cells regulate release of digestive enzymes
  - Digestive NES cells regulate intestinal movements
  - Respiratory NES cells regulate respiratory function
  - Adrenal Medulla and Paraganglia (organ) regulate blood pressure and heart rate produce both epinephrine and neuro epinephrine
  - Neuroendocrine cells are also found in non neuroendocrine glands
  - Neuroendocrine cells are also diffusely scattered in skin, thymus, prostate, and other glands and tissues

35

35

2021 Colon/Rectum ICD-O-3.2 Updates
Typical Histologic Types in Colon & Rectum

- NEC/NET in the GI Tract develop in the neuroendocrine cells of the connective tissues in and around the GI Tract and may grow inward or outward.
- NEC/NET in the GI Tract stimulate hormone producing endocrine cells resulting in the overproduction of vasoactive peptide hormones [serotonin (5 HT), histamines and tachykinins) causing a constellation of symptoms --"carcinoid syndrome" - flushing, fatty diarrhea, bronchospasms, and "dumping" syndrome.
- NEC/NET of GI Tract historical terminology is 'carcinoid tumor'. Some years were not even reportable.
- Carcinoid Tumor of Appendix was not reportable for many years as is usually low grade NEC/NET.
- Now ALL GI Tract NEC/NET are recognized as malignant – And, any grade NEC/NET in GI Tract is reportable
- Mitotic Index, Ki 67 Index, Hormone Functionality are NEC/NET Behavioral Indicators

Code	Grade Description
1	G1: Mitotic count (per 10 HPF) less than 2 AND Ki-67 index (%) less than 3
2	G2: Mitotic count (per 10 HPF) equal 2-20 OR Ki-67 index (%) equal 3-20
3	G3: Mitotic count (per 10 HPF) greater than 20 OR Ki-67 index (%) greater than 20
A	Well differentiated
B	Moderately differentiated
C	Poorly differentiated
D	Undifferentiated, anaplastic
9	Grade cannot be assessed (GX); Unknown

36

36

2021 Colon/Rectum ICD-O-3.2 Updates
Typical Histologic Types in Colon & Rectum

- **Pseudomyxoma Peritonei is an accumulation of mucin-secreting tumor cells in the peritoneum – histology 8480**
  - Cells can be in the Abdominal Cavity, the Pelvic Cavity – or BOTH - BOTH are peritoneal cavity anatomic sites
- Pseudomyxoma Peritonei is most often associated with mucinous tumors of the appendix – sometimes ovarian
- **2018 Pseudomyxoma Peritonei - reportable tumor now based on 2-tiered system which is based on tumor grade**
  - **This is not a perfect 2-tiered system – there are exceptions to the 2-tiers when looking only at tumor grade**
  - Patients can have low grade malignant pseudomyxoma peritonei with or without metastasis
  - **So, the reportable criteria can be confusing on a case-by-case basis**
- If noted to be LAMN (low grade appendiceal mucinous neoplasm) – not reportable - **UNLESS THEY GET TREATMENT**
- **Patient is treated with pseudomyxoma peritonei protocol (debulk surgery with chemo or HIPEC) = malignant & reportable**

- High Grade Pseudomyxoma Peritonei is always malignant with behavior = /3 – reportable
- Low Grade Pseudomyxoma Peritonei is generally not malignant with behavior = /1 – not reportable – LAMN
- When there is 'invasive' pseudomyxoma peritonei – it is reportable regardless of grade – reportable
- When there is 'malignant' pseudomyxoma peritonei – it is reportable regardless of grade – reportable
- When there is 'metastatic' pseudomyxoma peritonei – it is reportable – reportable
  - UNLESS the 'implants' are stated to be low grade implants or benign implants – not reportable – LAMN

- **Primary Site for Reportable Pseudomyxoma Peritonei will either be C18.1 or C80.9 with histology 8480/3**

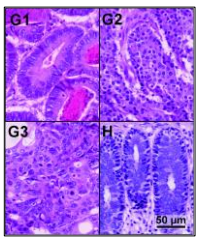
37

37

2021 Colon/Rectum/NEC/NET
Grade Coding Rules

Grade	Differentiation	Miotic Count/Ki-67
1 (low) - NET	Well differentiated	<2 mitoses/10 HPF <3% Ki-67 index
2 (Intermediate) - NET	Well differentiated	2-20 mitoses/10 HPF 3-20% Ki-67 index
3 (high) - NET	Well differentiated	>20 mitoses/10 HPF >20% Ki-67 index
Neuroendocrine Carcinoma (NEC)	Poorly differentiated Small Cell (SCNEC) Large Cell (LCNEC)	>20 mitoses/10 HPF >20% Ki-67 index

Code	Grade Description
1	G1: Well differentiated
2	G2: Moderately differentiated
3	G3: Poorly differentiated
4	G4: Undifferentiated
9	Grade cannot be assessed (GX); Unknown



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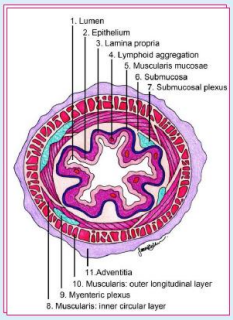
D	Undifferentiated, anaplastic
9	Grade cannot be assessed (GX); Unknown

38

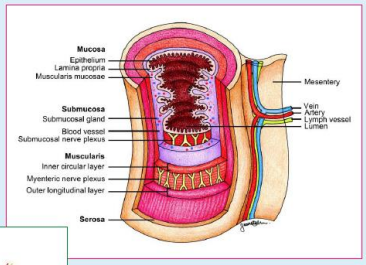
38

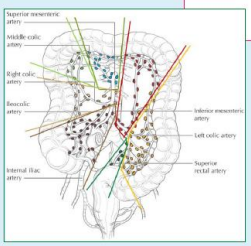
2021 Staging Updates for Colon/Rectum – Summary Stage

https://www.memorangapp.com/flashcards/29623/Histology+week1/



- ✓ Size of Tumor
- ✓ Wall Extension
- ✓ Regional Nodes
- ✓ Distant Nodes
- ✓ Distant Sites
- ✓ Some SSDIs
- ✓ Most SSDIs Not for Staging but Tumor Characteristics





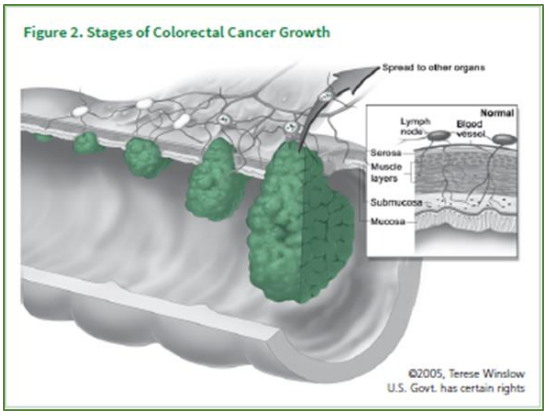
SS2018 – mixed stage/limited detail EOD – mixed stage/mod detail/can convert to mixed stage TNM/SS2018 AJCC TNM – strict rules for clinical, pathological and post-treatment stage and slightly more detail than EOD/SS

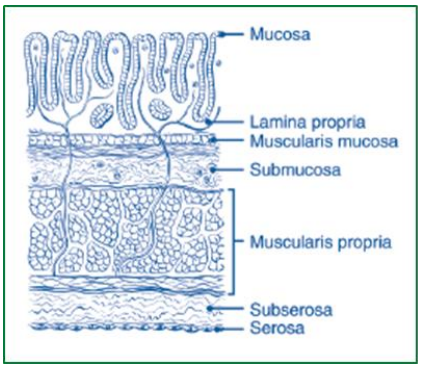
There is considerably more to AJCC TNM and UICC TNM in terms of standard language and shared definitions – key!

39

39

2021 Staging Updates for Colon/Rectum – Summary Stage





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Anatomy of the Colon & Rectum

- Invasion into "pericolonic/pericolorectal tissue" can be either Localized or Regional, depending on the primary site. Some sites are entirely peritonealized; some sites are only partially peritonealized or have no peritoneum. Localized may not be used for sites that are entirely peritonealized (cecum, transverse colon, sigmoid colon, rectosigmoid colon, upper third of rectum).
- **Localized**
  - Invasion through muscularis propria or muscularis, NOS
  - Non-peritonealized pericolic/perirectal tissues invaded [Ascending Colon/Descending Colon/Hepatic Flexure/Splenic Flexure/Upper two thirds of rectum: Posterior surface; lower third of rectum]
  - Subserosal tissue/(sub)serosal fat invaded – T3 – this is the fat that is layered just under or inside the serosa

  - Extension through wall, NOS
  - Intramucosal, NOS
  - Lamina propria
  - Mucosa, NOS
  - Muscularis mucosae
  - Muscularis, NOS
  - Muscularis propria
  - Submucosa (superficial invasion)
  - Polyp (head, stalk, NOS)

If the pathologist does not further describe the "pericolic/perirectal tissues" as either "non-peritonealized pericolic/perirectal tissues" vs "peritonealized pericolic/perirectal tissues" fat and the gross description does not describe the tumor relation to the serosa/peritoneal surface, and it cannot be determined whether the tumor arises in a peritonealized portion of the colon, code Localized.

41

41

Anatomy of the Colon & Rectum

- Invasion into "pericolonic/pericolorectal tissue" can be either Localized or Regional, depending on the primary site. Some sites are entirely peritonealized; some sites are only partially peritonealized or have no peritoneum. Localized may not be used for sites that are entirely peritonealized (cecum, transverse colon, sigmoid colon, rectosigmoid colon, upper third of rectum).
- **Regional**
  - Mesentery
  - Peritonealized pericolic/perirectal tissues invaded [Ascending Colon/Descending Colon/Hepatic Flexure/Splenic Flexure/Upper third of rectum: anterior and lateral surfaces; Cecum; Sigmoid Colon; Transverse Colon; Rectosigmoid; Rectum: middle third anterior surface)
  - Pericolic/Perirectal fat – T4 – this is the fat that surrounds the outside of the colon wall – outside the serosa – so once it is thru the serosa – it is regional direct extension – unless it is in a peritonelized site – a site that has no serosa – then once it is thru the muscularis mucosa it directly invades the parietal peritoneum – not the visceral peritoneum surrounding the colon but the parietal peritoneum of the body cavity.

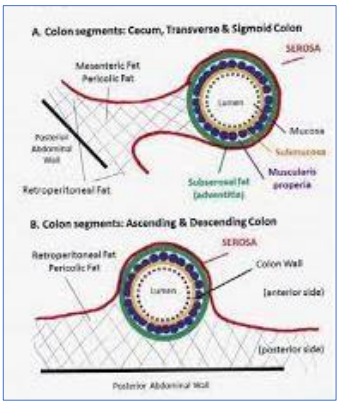
  - Abdominal wall
  - Adherent to other organs or structures clinically with no microscopic examination
  - Adjacent (connective) tissue(s), NOS
  - Fat, NOS
  - Mesentery (including mesenteric fat, mesocolon)
  - Mesothelium
  - Pericolic fat
  - Perirectal fat
  - Peritonealized pericolic/perirectal tissues invaded
  - Retroperitoneum (excluding fat)
  - Serosa
  - Small intestine
  - Tumor found in adhesion(s) if microscopic examination performed
  - Tunica serosa

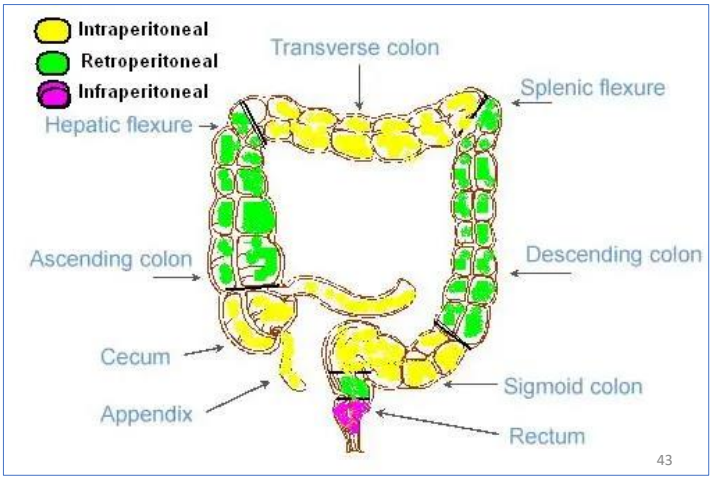
Tumors characterized by involvement of the serosal surface (visceral peritoneum) by direct extension or perforation in which the tumor cells are continuous with the serosal surface through inflammation are coded to regional.

42

42

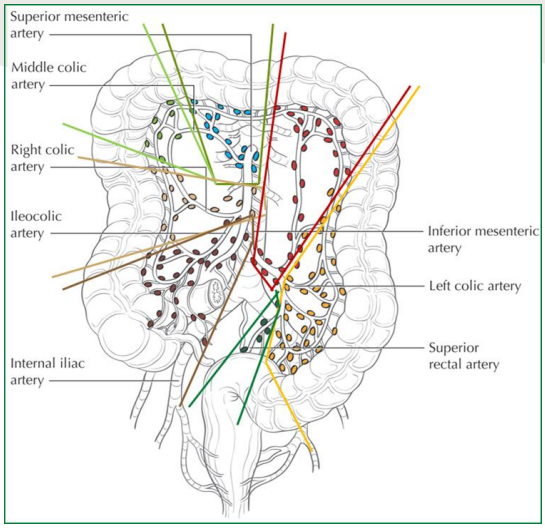
Anatomy of the Colon & Rectum





43

2021 Staging Updates for Colon/Rectum – Summary Stage



Modified AJCC Image - The regional lymph nodes of the colon and rectum are colored by anatomic location.

44

44

2021 Staging Updates for Colon/Rectum – Summary Stage Tumor Deposits – N1c

Definition

- Separate tumor nodules or tumor deposits of malignant cells in perirectal or pericolic fat with no evidence of lymph node tissue

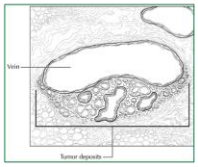
Found in primary lymphatic drainage area

Other names

- Peri-tumoral deposits, satellite nodules, discontinuous extramural extension, or malignant tumor foci

N1c = Specific TNM "N" Code for tumor nodule or deposit(s) in the subserosa, mesentery, or non-peritonealized pericolic or perirectal tissues without regional nodal metastasis.

- Mesenteric
- Pericolonic
- Perirectal
- Subserosa
- All Regional Lymph Nodes Negative
- Deposits + LNs



- N1c = Tumor deposit(s) in the subserosa, mesentery, or nonperitonealized pericolic or perirectal tissues without regional nodal metastasis.

45

45

2021 Staging Updates for Colon/Rectum – AJCC TNM, 8th ed

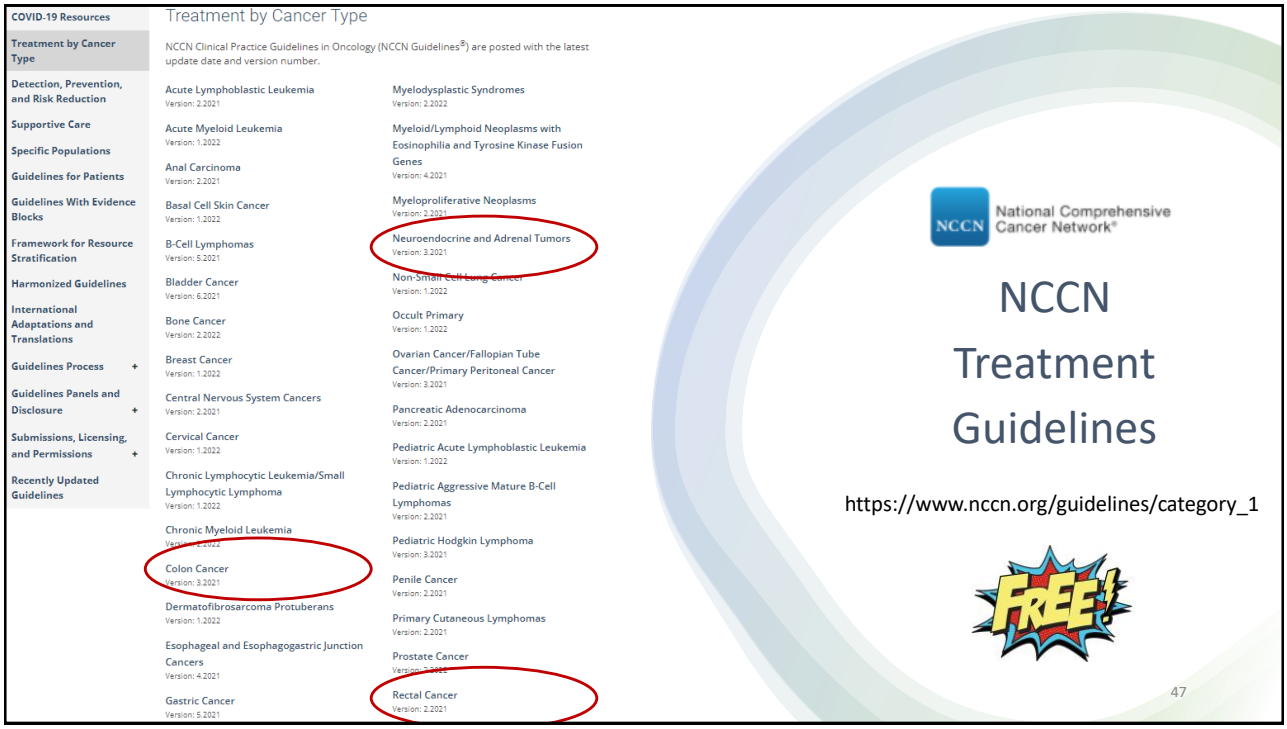
American Joint Committee on Cancer (AJCC) TNM Staging System for Colon Cancer 8th ed., 2017

Table 2. **Prognostic Groups**

	T	N	M
Stage 0	Tis	N0	M0
Stage I	T1, T2	N0	M0
Stage IIA	T3	N0	M0
Stage IIB	T4a	N0	M0
Stage IIC	T4b	N0	M0
Stage IIIA	T1-T2	N1/N1c	M0
	T1	N2a	M0
Stage IIIB	T3-T4a	N1/N1c	M0
	T2-T3	N2a	M0
	T1-T2	N2b	M0
Stage IIIC	T4a	N2a	M0
	T3-T4a	N2b	M0
	T4b	N1-N2	M0
Stage IVA	Any T	Any N	M1a
Stage IVB	Any T	Any N	M1b
Stage IVC	Any T	Any N	M1c

46

46


COVID-19 Resources
Treatment by Cancer Type
Detection, Prevention, and Risk Reduction
Supportive Care
Specific Populations
Guidelines for Patients
Guidelines With Evidence Blocks
Framework for Resource Stratification
Harmonized Guidelines
International Adaptations and Translations
Guidelines Process +
Guidelines Panels and Disclosure +
Submissions, Licensing, and Permissions +
Recently Updated Guidelines
Treatment by Cancer Type
NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) are posted with the latest update date and version number.
Acute Lymphoblastic Leukemia Version: 2.2021
Acute Myeloid Leukemia Version: 1.2022
Anal Carcinoma Version: 2.2021
Basal Cell Skin Cancer Version: 1.2022
B-Cell Lymphomas Version: 5.2021
Bladder Cancer Version: 6.2021
Bone Cancer Version: 2.2022
Breast Cancer Version: 1.2022
Central Nervous System Cancers Version: 2.2021
Cervical Cancer Version: 1.2022
Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma Version: 1.2022
Chronic Myeloid Leukemia
Colon Cancer Version: 3.2021
Dermatofibrosarcoma Protuberans Version: 1.2022
Esophageal and Esophagogastric Junction Cancers Version: 4.2021
Gastric Cancer Version: 5.2021
Myelodysplastic Syndromes Version: 2.2022
Myeloid/Lymphoid Neoplasms with Eosinophilia and Tyrosine Kinase Fusion Genes Version: 4.2021
Myeloproliferative Neoplasms Version: 2.2021
Neuroendocrine and Adrenal Tumors Version: 3.2021
Non-Small Cell Lung Cancer Version: 1.2022
Occult Primary Version: 1.2022
Ovarian Cancer/Fallopian Tube Cancer/Primary Peritoneal Cancer Version: 3.2021
Pancreatic Adenocarcinoma Version: 2.2021
Pediatric Acute Lymphoblastic Leukemia Version: 1.2022
Pediatric Aggressive Mature B-Cell Lymphomas Version: 2.2021
Pediatric Hodgkin Lymphoma Version: 3.2021
Penile Cancer Version: 2.2021
Primary Cutaneous Lymphomas Version: 2.2021
Prostate Cancer
Rectal Cancer Version: 2.2021
NCCN National Comprehensive Cancer Network®
NCCN Treatment Guidelines
https://www.nccn.org/guidelines/category_1
FREE!
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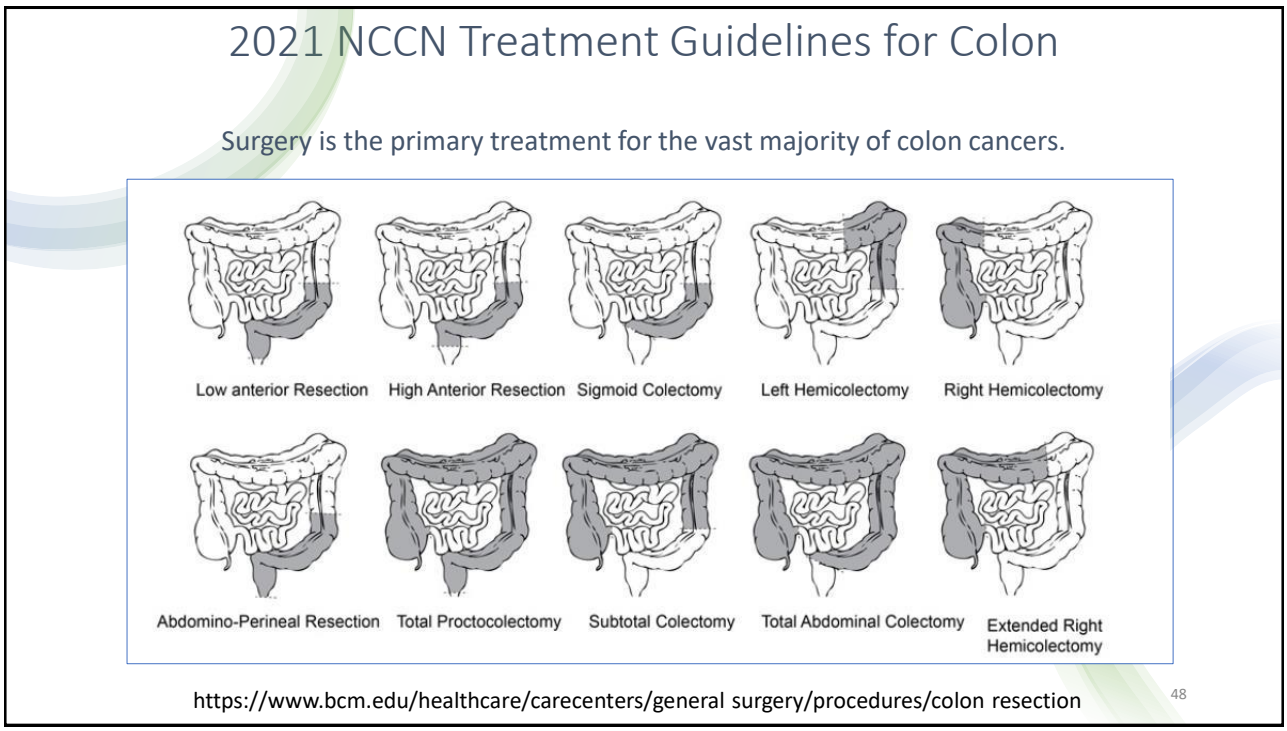

2021 NCCN Treatment Guidelines for Colon
Surgery is the primary treatment for the vast majority of colon cancers.
Low anterior Resection
High Anterior Resection
Sigmoid Colectomy
Left Hemicolectomy
Right Hemicolectomy
Abdomino-Perineal Resection
Total Proctocolectomy
Subtotal Colectomy
Total Abdominal Colectomy
Extended Right Hemicolectomy
https://www.bcm.edu/healthcare/carecenters/general surgery/procedures/colon resection
48

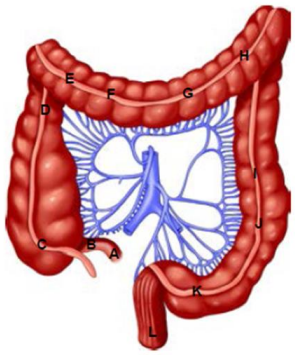
48

2021 NCCN Treatment Guidelines for Colon

DEFINITIONS OF COMMON COLORECTAL RESECTIONS

The extent of colorectal resection depends on the location of the tumor, any underlying condition (eg, inflammatory bowel disease, hereditary syndrome), and the vascular supply to the colorectum.

Definitions of common colorectal resections are as follows:[1]



A through C	Ileocecectomy
A through D	Ascending colectomy
A through F	Right hemicolectomy
A through G	Extended right hemicolectomy
E through H	Transverse colectomy
G through I	Left hemicolectomy
F through I	Extended left hemicolectomy
J through K	Sigmoid colectomy
A through J	Subtotal colectomy
A through K	Total colectomy
K through L	Low anterior resection with sphincter preservation
K through L	Abdominoperineal resection without sphincter preservation

[1]Adapted and reprinted with permission from Bullard KM and Rothenberger DA. (2005). Colon, Rectum, and Anus. In Brunicardi C (Ed.) Schwartz's Principles of Surgery, 8th Edition, page 1069. McGraw Hill: New York, NY.

NCCN Guidelines – Colorectal Cancer Screening

49

49

2021 NCCN Treatment Guidelines for Colon

- **Surgery is the recommended initial and primary treatment for the majority of colorectal cancers.**

Colectomy
- Lymphadenectomy
  - Lymph nodes at the origin of feeding vessel(s) should be identified for pathologic exam.
  - Clinically positive lymph nodes outside the field of resection that are considered suspicious should be biopsied or removed, if possible.
  - Positive nodes left behind indicate an incomplete (R2) resection.
  - A minimum of 12 lymph nodes need to be examined to establish N stage.[1]
- Minimally invasive approaches may be considered based on the following criteria:[2]
  - The surgeon has experience performing laparoscopically assisted colorectal operations.[3,4]
  - Minimally invasive approaches are generally not indicated for locally advanced cancer or acute bowel obstruction or perforation from cancer.
  - Thorough abdominal exploration is required.[5]
  - Consider preoperative marking of lesion(s).
- Management of patients with carrier status of known or clinically suspected LS.
  - Consider more extensive colectomy for patients with a strong family history of colon cancer or young age (<50 y).
  - See NCCN Guidelines for Genetic/Familial High-Risk Assessment: Colorectal
- Resection needs to be complete to be considered curative.

- Neoadjuvant therapy with FOLFOX or CAPEOX is recommended when a patient presents with bulky nodal disease or locally advanced T4 primary tumors
- Neoadjuvant therapy with infusion 5FU PLUS Radiation or Capecitabine PLUS Radiation is recommended when a patient presents with locally unresectable or medically inoperable disease

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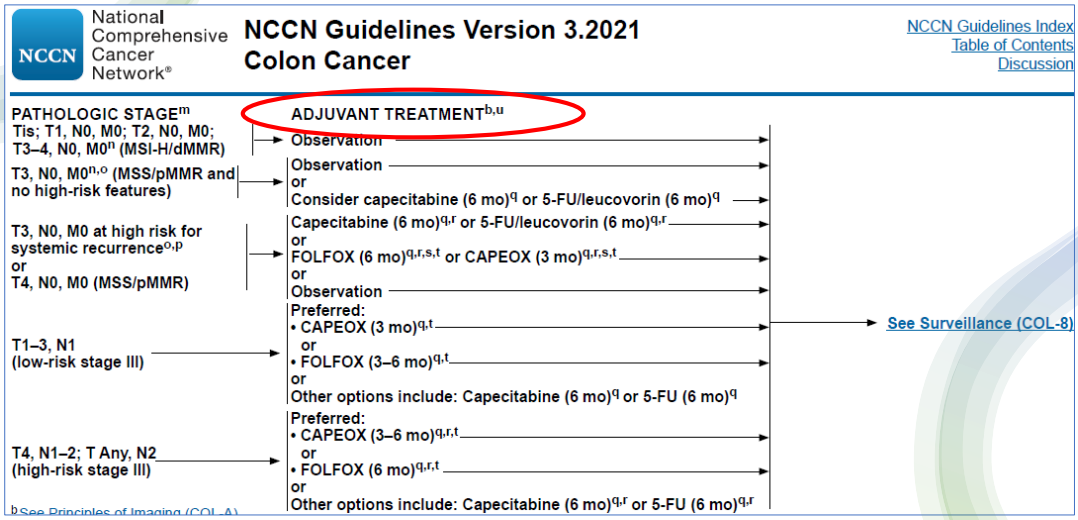
2021 NCCN Treatment Guidelines for Colon



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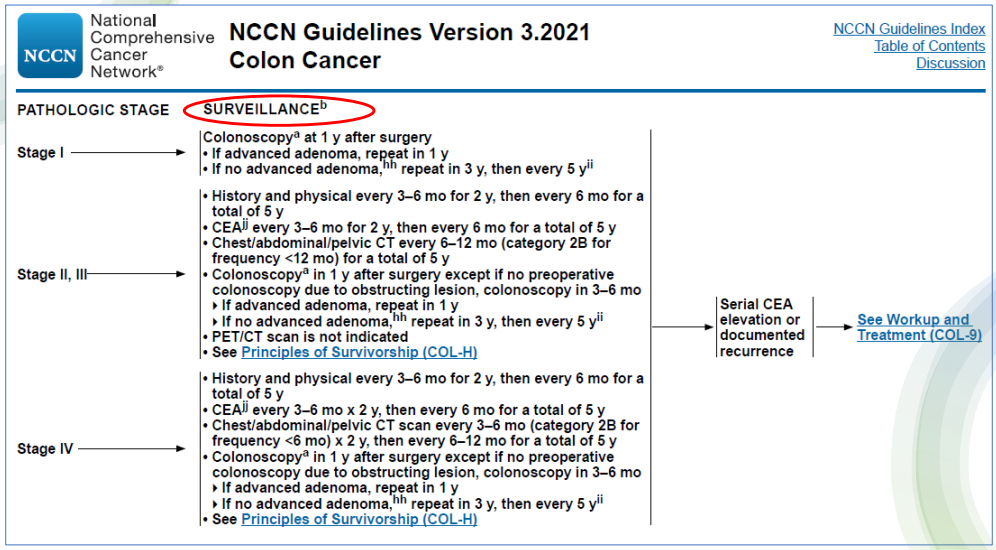
2021 NCCN Post-Surgical Treatment Guidelines



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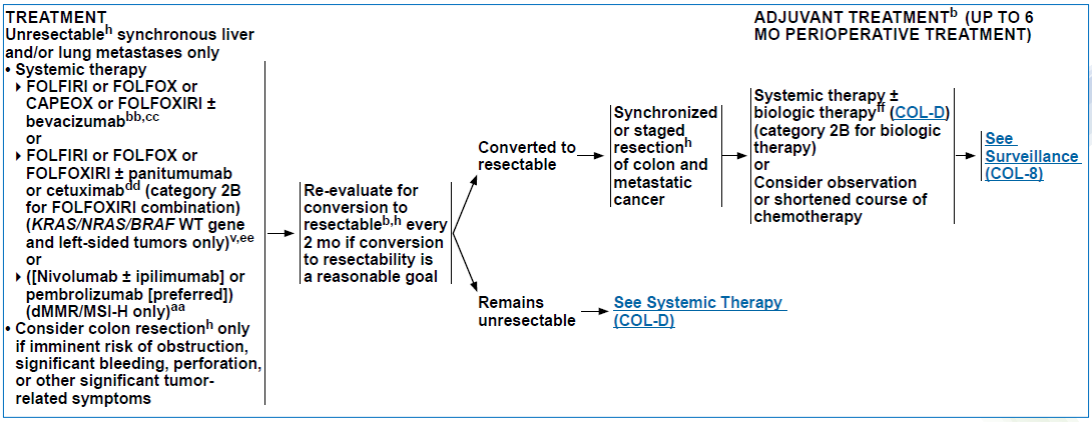
So, when does all the genetic testing occur?

- To evaluate options for adjuvant therapy – high-risk & Stage III disease
- To evaluate options for M1 disease – resectable liver/lung mets
- To evaluate options for M1 disease – unresectable liver/lung mets



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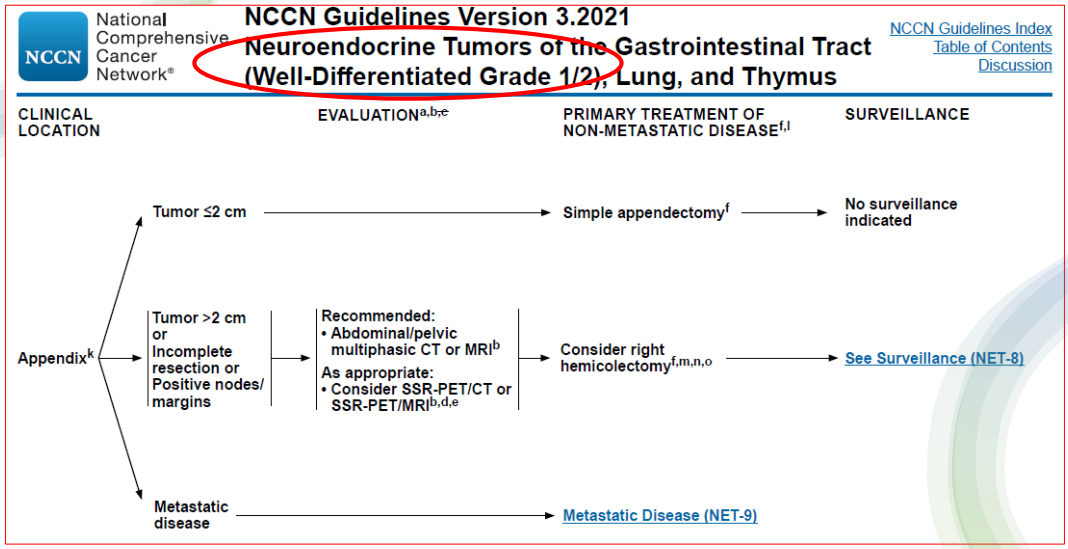
2021 NCCN Gastro-Intestinal NEC/NET Guidelines



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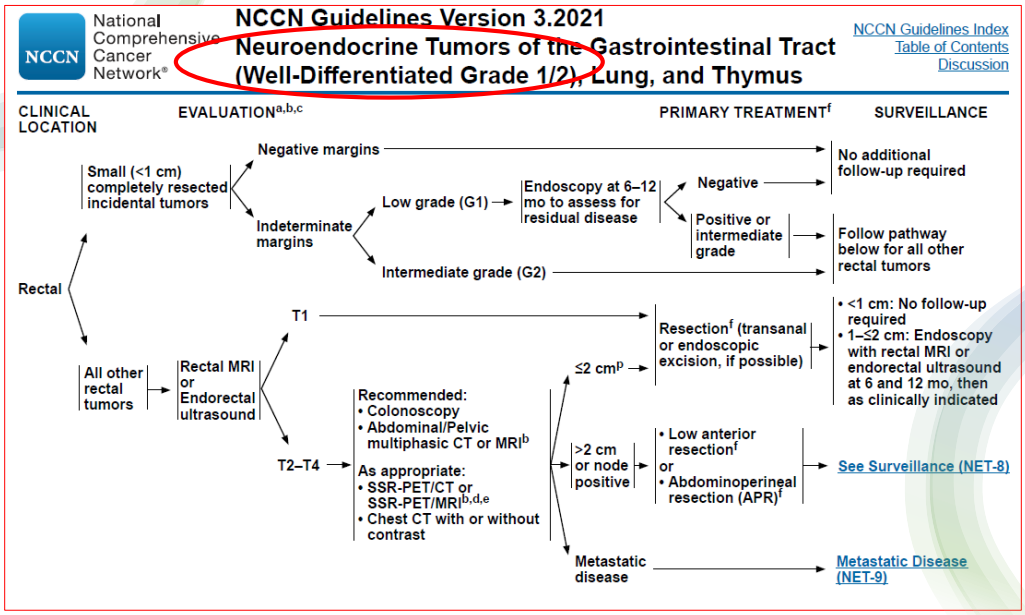
2021 NCCN Gastro-Intestinal NEC/NET Guidelines



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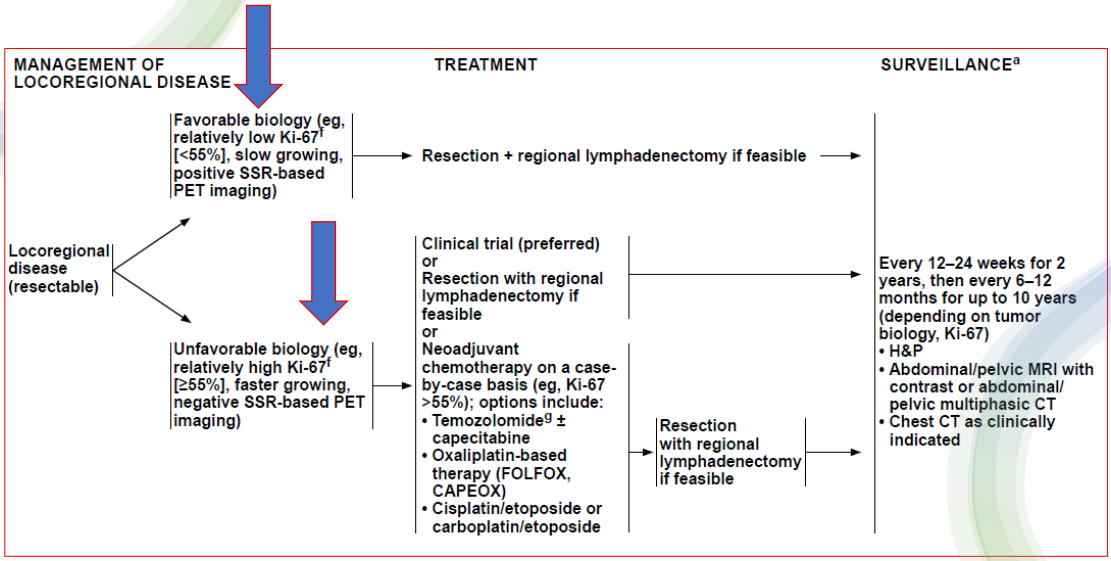
2021 NCCN Gastro-Intestinal NEC/NET Guidelines



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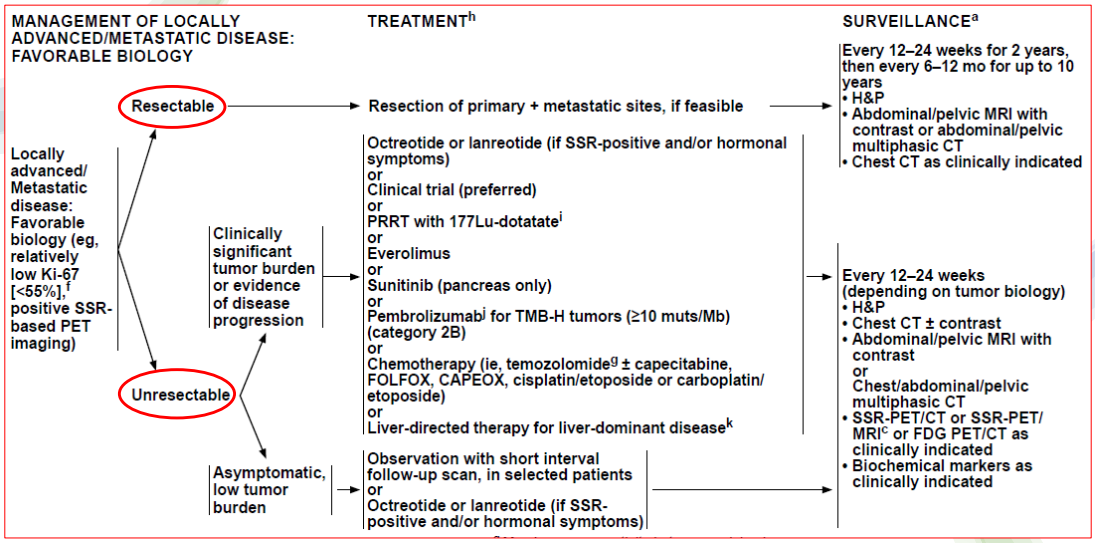
2021 NCCN Gastro-Intestinal NEC/NET Guidelines



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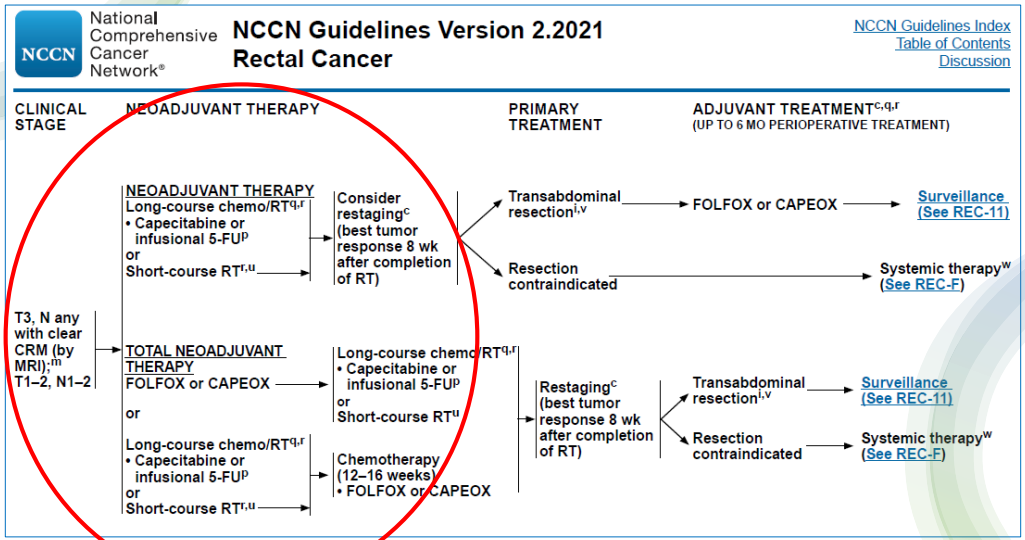
2021 NCCN Neoadjuvant Treatment Guidelines - Rectum



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58

2021 NCCN Neoadjuvant Treatment Guidelines - Rectum

Radiation therapy

Radiation therapy uses high-energy rays to kill cancer cells.

External beam radiation therapy
External beam radiation therapy (EBRT) is the type of radiation used most often to treat rectal cancer. This method delivers radiation from outside the body using a large machine. The radiation passes through skin and other tissue to reach the tumor.

Types of EBRT include three-dimensional conformal radiation therapy (3D-CRT), intensity-modulated radiation therapy (IMRT), and stereotactic body radiation therapy (SBRT). All types are conformal, which means that the radiation beams are shaped to the cancer site. This helps minimize damage to healthy tissue. The type used depends on the location and size of the tumor(s) and other factors. SBRT is a special radiation technique described in more detail in *Part 5, Metastatic cancer* beginning on page 50.

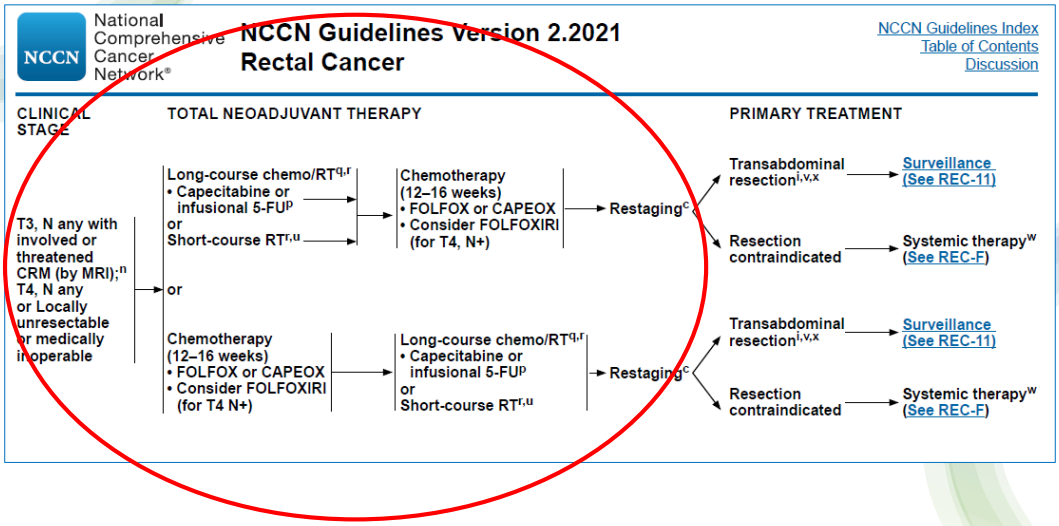
Long-course chemoradiation
In the treatment of rectal cancer, external radiation therapy is often used in combination with chemotherapy. Radiation therapy is given in 25 to 28 treatment sessions, called fractions. Chemotherapy is given during the same time period. This is known as long-course chemoradiation.

Short-course radiation therapy
Another method of radiation treatment for rectal cancer is short-course radiation therapy. This method delivers a higher dose of radiation over a much shorter time period, typically in 5 treatment sessions. Chemotherapy is not given.

59

59

2021 NCCN Neoadjuvant Treatment Guidelines - Rectum



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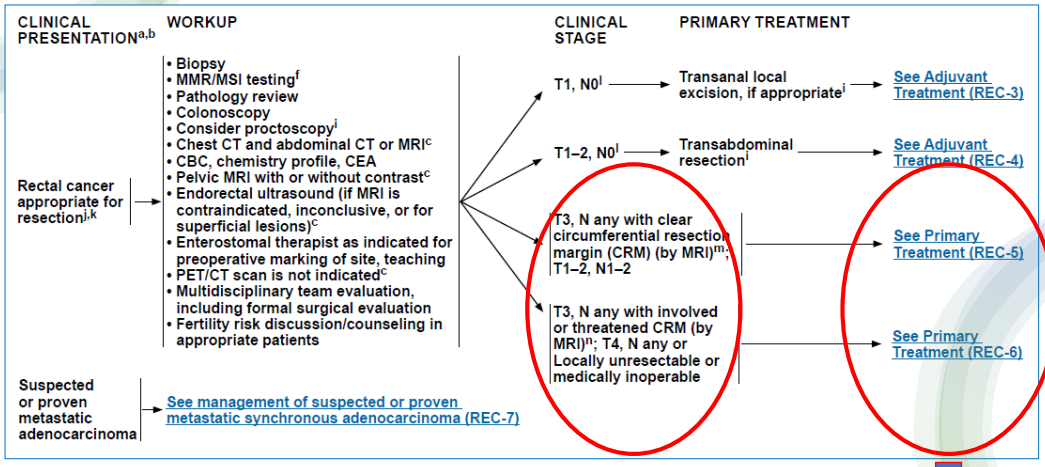
2021 NCCN Surgical Treatment Guidelines - Rectum



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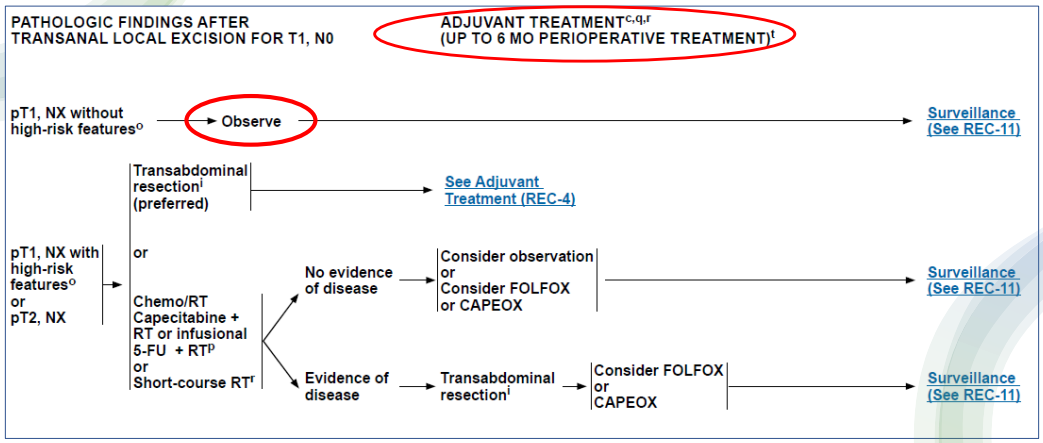
2021 NCCN Post-Surgical Treatment Guidelines - Rectum



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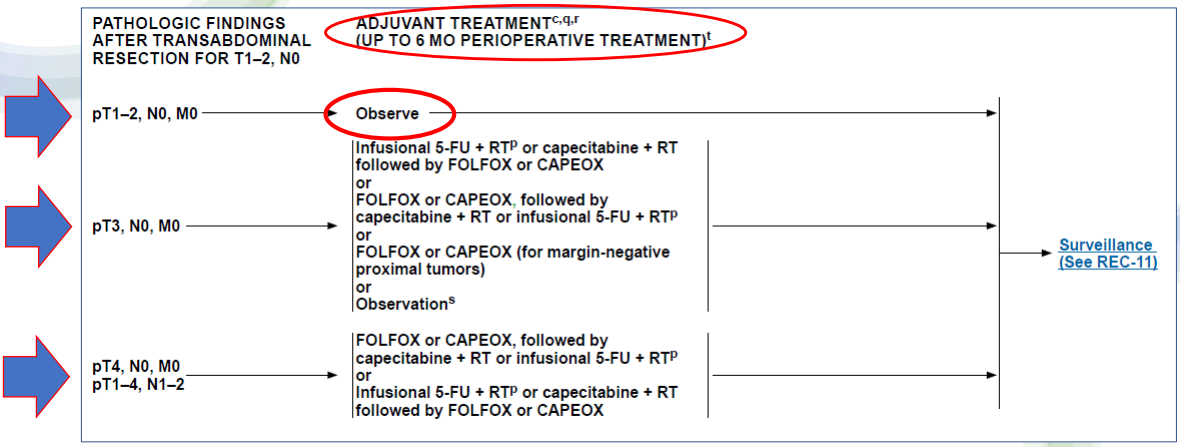
2021 NCCN Post-Surgical Treatment Guidelines - Rectum



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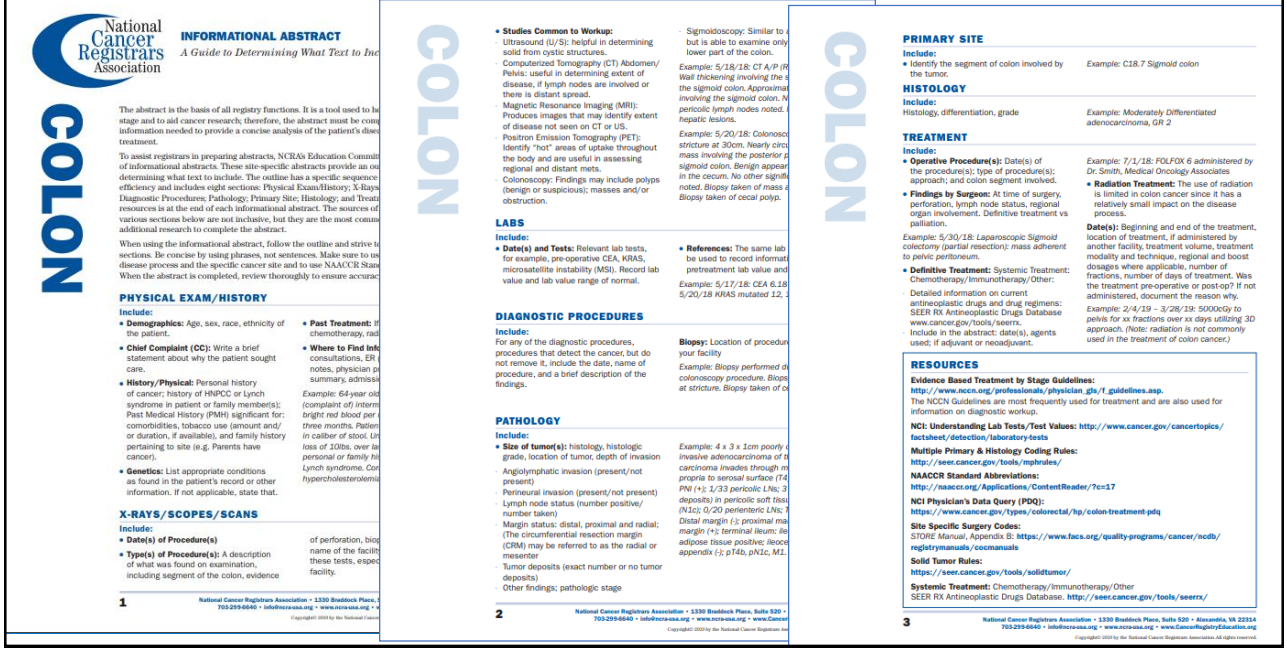
2021 NCCN Advanced/Metastatic Treatment Guidelines - Rectum

mFOLFOX6	Regorafenib
mFOLFOX7	Trifluridine + tipiracil + bevacizumab
FOLFOX + bevacizumab	Pembrolizumab (dMMR/MSI-H only)
FOLFOX + panitumumab (KRAS/NRAS/BRAF Wild Type Only)	Nivolumab (dMMR/MSI-H only)
FOLFOX + cetuximab (KRAS/NRAS/BRAF Wild Type Only)	Novolumab + ipilumumab (dMMR/MSI-H only)
CAPEOX	Dosarlimab-gxly (dMMR/MSI-H only)
CEPEOX + bevacizumab	Trastuzumab + pertuzumab (HER2-amplified & RAS & BRAF WT)
FOLFIRI	Trastuzumab + lapatinib (HER2-amplified & RAS & BRAF WT)
FOLFIRI + bevacizumab	Fam-trastuzumab deruxtecan-nxki
FOLFIRI + panitumumab (KRAS/NRAS/BRAF Wild Type Only)	Encorafenib + cetuximab (BRAF V600E mutation positive)
FOLFIRI + cetuximab (KRAS/NRAS/BRAF Wild Type Only)	Encorafenib _ panitumumab (BRAF V600E mutation positive)
IROX	Larotrectinib (NTRK gene fusion positive)
IROX + bevacizumab	Entrectinib (NTRK gene fusion positive)
FOLFIRI + ziv-aflibercept	
FOLFIRI + ramucirumab	
FOLFOXIRI	
FOLFOXIRI _ bevacizumab	
FOLFOXIRI + panitumumab (KRAS/NRAS/BRAF Wild Type Only)	
FOLFOXIRI + cetuximab (KRAS/NRAS/BRAF Wild Type Only)	

64

64

TEXT DOCUMENTATION



National Cancer Registrars Association

INFORMATIONAL ABSTRACT

A Guide to Determining What Text to Inc

COLON

The abstract is the basis of all registry functions. It is a tool used to h stage and to aid cancer research; therefore, the abstract must be com information needed to provide a concise analysis of the patient's dise treatment.

To assist registrars in preparing abstracts, NCRA's Education Commit of informational abstracts. These site-specific abstracts provide an ou determining what text to include. The outline has a specific sequence efficiency and includes eight sections: Physical Exam/History; X-Rays Diagnostic Procedures; Pathology; Primary Site; Histology; and Treat resources is at the end of each informational abstract. The sources of various sections below are not inclusive, but they are the most comm additional research to complete the abstract.

When using the informational abstract, follow the outline and strive t sections. Be concise by using phrases, not sentences. Make sure to us disease process and the specific cancer site and to use NAACCR Stan When the abstract is completed, review thoroughly to ensure accurac

PHYSICAL EXAM/HISTORY

Include:

- **Demographics:** Age, sex, race, ethnicity of the patient.
- **Chief Complaint (CC):** Write a brief statement about why the patient sought care.
- **History/Physical:** Personal history of cancer; history of HNPCC or Lynch syndrome in patient or family member(s); Past Medical History (PMH) significant for: comorbidities, tobacco use (amount and/or duration, if available), and family history pertaining to site (e.g. Parents have cancer).
- **Genetics:** List appropriate conditions as found in the patient's record or other information. If not applicable, state that.
- **Past Treatment:** If chemotherapy, rad
- **Where to Find Inf** consultations, ER notes, physician p summary, admissi

Example: 64-year old (complaint of) interm bright red blood per three months. Patien in caliber of stool. Un loss of 10lbs, over la personal or family hi Lynch syndrome. Cor hypercholesterolemia

X-RAYS/SCOPES/SCANS

Include:

- **Date(s) of Procedure(s)**
- **Type(s) of Procedure(s):** A description of what was found on examination, including segment of the colon, evidence

of perforation, biop name of the facilit these tests, espec facility.

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COLON

- **Studies Common to Workup:**
  - Ultrasound (U/S): helpful in determining solid from cystic structures.
  - Computerized Tomography (CT) Abdomen/Pelvis: useful in determining extent of disease, if lymph nodes are involved or there is distant spread.
  - Magnetic Resonance Imaging (MRI): Produces images that may identify extent of disease not seen on CT or US.
  - Positron Emission Tomography (PET): Identify "hot" areas of uptake throughout the body and are useful in assessing regional and distant mets.
  - Colonoscopy: Findings may include polyps (benign or suspicious); masses and/or obstruction.
  - Sigmoidoscopy: Similar to a but is able to examine only lower part of the colon.

Example: 5/18/18: CT A/P (R Wall thickening involving the s the sigmoid colon. Approximat involving the sigmoid colon. N pericolic lymph nodes noted. hepatic lesions.

Example: 5/20/18: Colonosc stricture at 30cm. Nearly circ mass involving the posterior p sigmoid colon. Benign appear in the cecum. No other signifi noted. Biopsy taken of mass a Biopsy taken of cecal polyp.

LABS

Include:

- **Date(s) and Tests:** Relevant lab tests, for example, pre-operative CEA, KRAS, microsatellite instability (MSI). Record lab value and lab value range of normal.
- **References:** The same lab be used to record informat pretreatment lab value and

Example: 5/17/18: CEA 6.18 5/20/18 KRAS mutated 12,

DIAGNOSTIC PROCEDURES

Include:

For any of the diagnostic procedures, procedures that detect the cancer, but do not remove it, include the date, name of procedure, and a brief description of the findings.

Biopsy: Location of procedur your facility

Example: Biopsy performed d colonoscopy procedure. Biops at stricture. Biopsy taken of c

PATHOLOGY

Include:

- **Size of tumor(s):** histology, histologic grade, location of tumor, depth of invasion
- Angiolymphatic invasion (present/not present)
- Perineural invasion (present/not present)
- Lymph node status (number positive/number taken)
- Margin status: distal, proximal and radial; (The circumferential resection margin (CRM) may be referred to as the radial or mesenter
- Tumor deposits (exact number or no tumor deposits)
- Other findings; pathologic stage

Example: 4 x 3 x 1cm poorly invasive adenocarcinoma of t carcinoma invades through m propria to serosal surface (T4 PNI (+); 1/33 pericolic LNs; 3 deposits) in pericolic soft tissu (N1c); 0/20 perienteric LNs; T Distal margin (-); proximal ma margin (+); terminal ileum: ile adipose tissue positive; ileocec appendix (-); pT4b, pN1c, M1.

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COLON

PRIMARY SITE

Include:

- Identify the segment of colon involved by the tumor.

Example: C18.7 Sigmoid colon

HISTOLOGY

Include:

Histology, differentiation, grade

Example: Moderately Differentiated adenocarcinoma, GR 2

TREATMENT

Include:

- **Operative Procedure(s):** Date(s) of the procedure(s); type of procedure(s); approach; and colon segment involved.
- **Findings by Surgeon:** At time of surgery, perforation, lymph node status, regional organ involvement. Definitive treatment vs palliation.

Example: 5/30/18: Laparoscopic Sigmoid colectomy (partial resection); mass adherent to pelvic peritoneum.

- **Definitive Treatment:** Systemic Treatment: Chemotherapy/Immunotherapy/Other:
  - Detailed information on current antineoplastic drugs and drug regimens: SEER RX Antineoplastic Drugs Database www.cancer.gov/tools/seerrx.
  - Include in the abstract: date(s), agents used; if adjuvant or neoadjuvant.

Example: 7/1/18: FOLFOX 6 administered by Dr. Smith, Medical Oncology Associates

- **Radiation Treatment:** The use of radiation is limited in colon cancer since it has a relatively small impact on the disease process.

Date(s): Beginning and end of the treatment, location of treatment, if administered by another facility, treatment volume, treatment modality and technique, regional and boost dosages where applicable, number of fractions, number of days of treatment. Was the treatment pre-operative or post-op? If not administered, document the reason why.

Example: 2/4/19 – 3/28/19: 5000cGy to pelvis for xx fractions over xx days utilizing 3D approach. (Note: radiation is not commonly used in the treatment of colon cancer.)

RESOURCES

Evidence Based Treatment by Stage Guidelines: http://www.nccn.org/professionals/physician_gls/f_guidelines.asp. The NCCN Guidelines are most frequently used for treatment and are also used for information on diagnostic workup.

NCI: Understanding Lab Tests/Test Values: http://www.cancer.gov/cancertopics/factsheet/detection/laboratory-tests

Multiple Primary & Histology Coding Rules: http://seer.cancer.gov/tools/mphrules/

NAACCR Standard Abbreviations: http://naaccr.org/Applications/ContentReader/?c=17

NCI Physician's Data Query (PDQ): https://www.cancer.gov/types/colorectal/hp/colon-treatment-pdq

Site Specific Surgery Codes: *STORE Manual*, Appendix B: https://www.facs.org/quality-programs/cancer/ncdb/registrymanuals/cocmanuals

Solid Tumor Rules: https://seer.cancer.gov/tools/solidtumor/

Systemic Treatment: Chemotherapy/Immunotherapy/Other SEER RX Antineoplastic Drugs Database. http://seer.cancer.gov/tools/seerrx/

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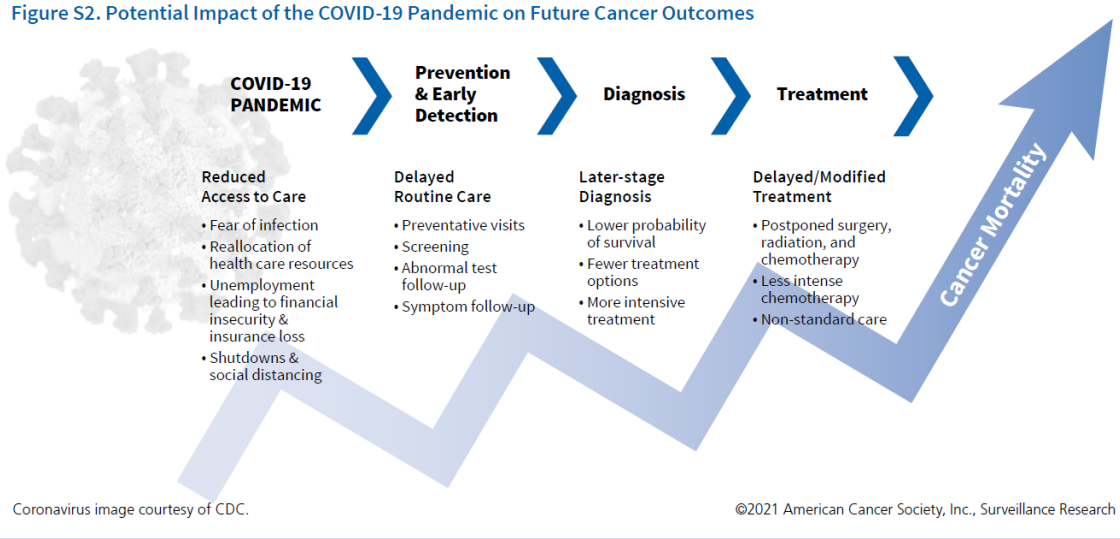
65

Miscellaneous Notes

Figure S2. Potential Impact of the COVID-19 Pandemic on Future Cancer Outcomes



Coronavirus image courtesy of CDC.

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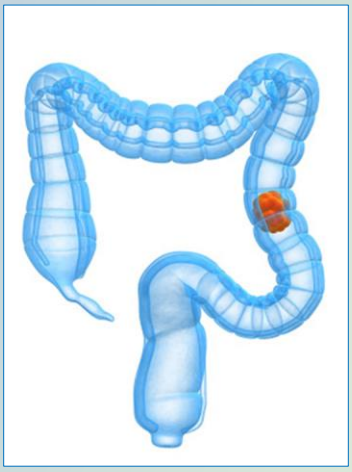
- National Comprehensive Cancer Network (NCCN) – NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines) Version 3.2021 – Colon Cancer
- National Comprehensive Cancer Network (NCCN) – NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines) Version 2.2021 – Rectal Cancer
- National Comprehensive Cancer Network (NCCN) – NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines) Version 3.2021 – Neuroendocrine and Adrenal Tumors
- National Cancer Registrars Association – Informational Abstracts; Colon, Alexandria, VA, 2021
- Johns Hopkins Cancer Center - http://hopkinscoloncancercenter.org
- National Cancer Institute – Surveillance, Epidemiology, End Results Registry (SEER) Training
- Summary Staging 2018 coding Manual, revised September 2020
- AJCC Cancer Staging Manual, 8th edition, Chicago, IL
- Grade Manual. NAACCR, Springfield, IL Ruhl J, Ward E, Hofferkamp J, et al. (November 2020)
- Site-Specific Data Item (SSDI) Manual. NAACCR, Springfield, IL Ruhl J, Ward E, Hofferkamp J, et al. (September 2020)
- Solid Tumor Rules. National Cancer Institute, Rockville, MD Dickie, L., Johnson, CH., Adams, S., Negoita, S. (December 2020)
- https://www.cancerresearchuk.org/health professional/cancer statistics/

67

Questions



68