

The diagram illustrates the layers of the colon wall: Mucosa, Submucosa, Muscle layers, and Serosa. It shows abnormal cells in the mucosa, a blood vessel, and a lymph node. Labels include: Stage 0, Lymph node, Blood vessel, Serosa, Muscle layers, Submucosa, Mucosa, and Abnormal cells. A copyright notice at the bottom reads: © 2011 Terese Winslow U.S. Govt. has certain.

You should have a copy of your AJCC manual with you today.

Colon 2022

May 5, 2022

NAACCR

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Q&A

Please submit all questions concerning the webinar content through the Q&A panel.

If you have participants watching this webinar at your site, please collect their names and emails.

We will be distributing a Q&A document in about one week. This document will fully answer questions asked during the webinar and will contain any corrections that we may discover after the webinar.

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Fabulous Prizes




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Guest Presenter

- Janine Smith, CTR
 - Statewide Auditor and Education and Training Coordinator;
California Cancer Registry




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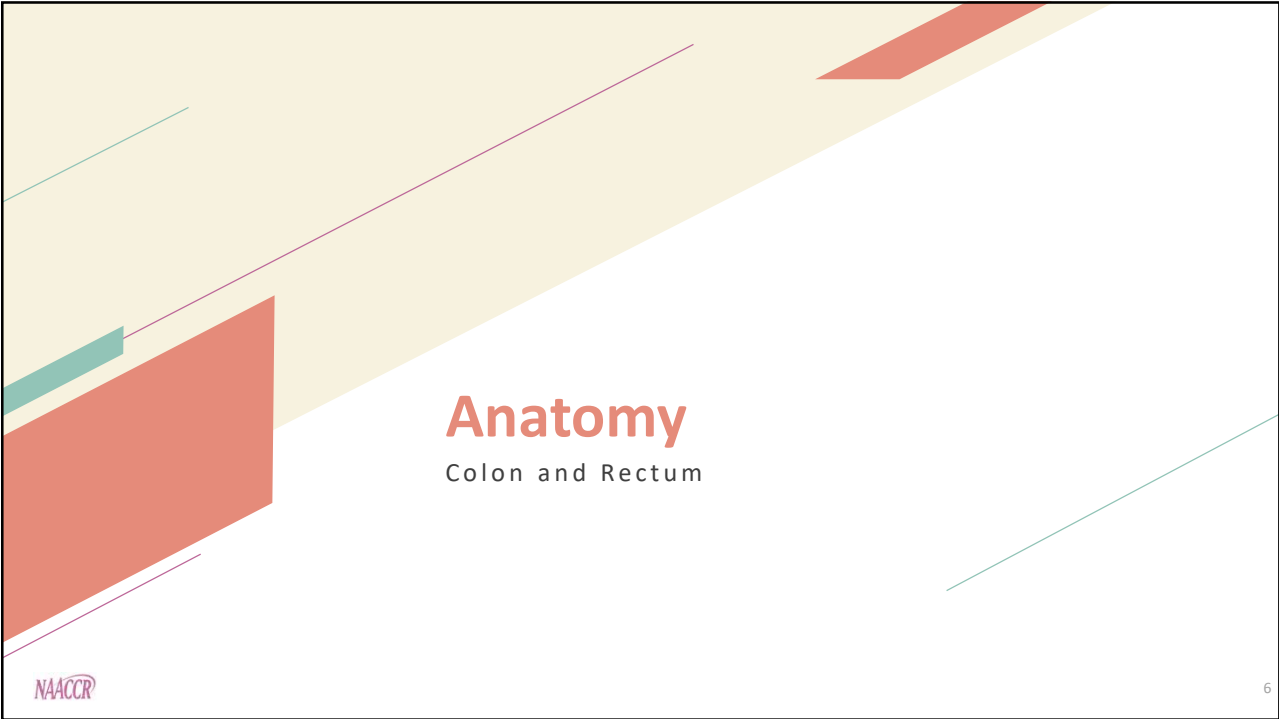
Agenda

- Anatomy/Overview
- Case Scenario 1
- Case Scenario 2
- Case Scenario 3




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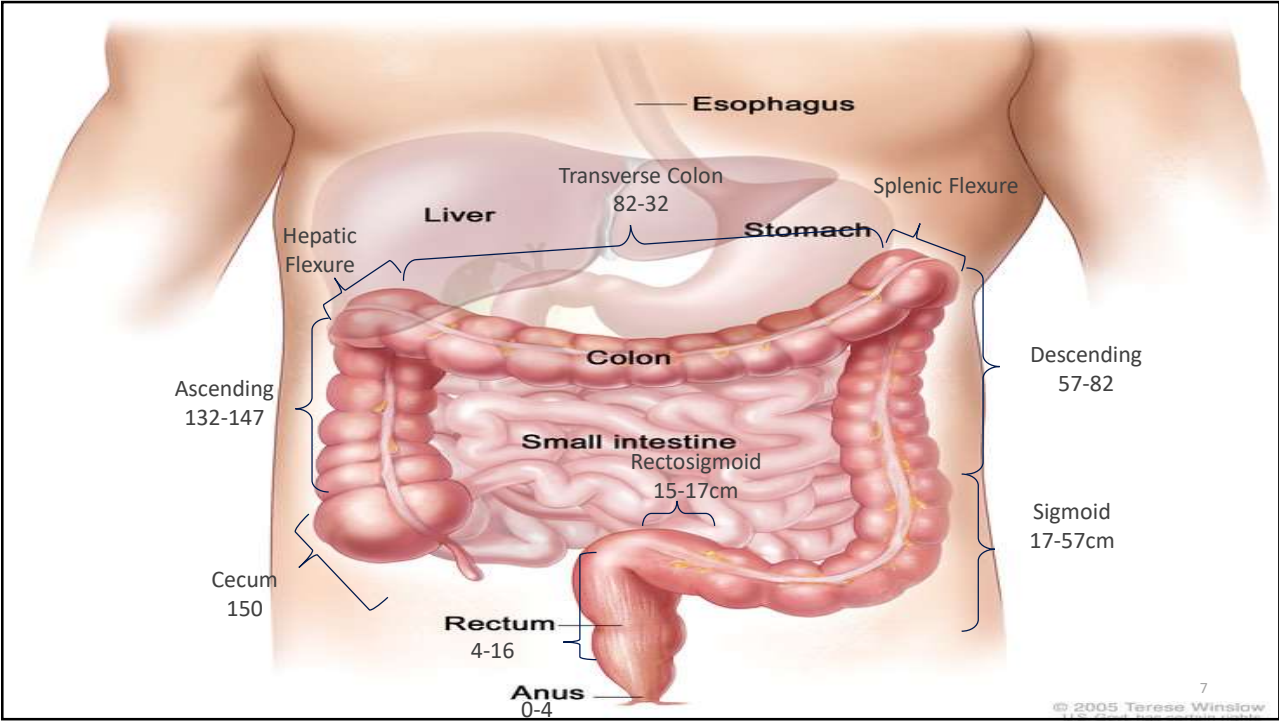
Anatomy

Colon and Rectum

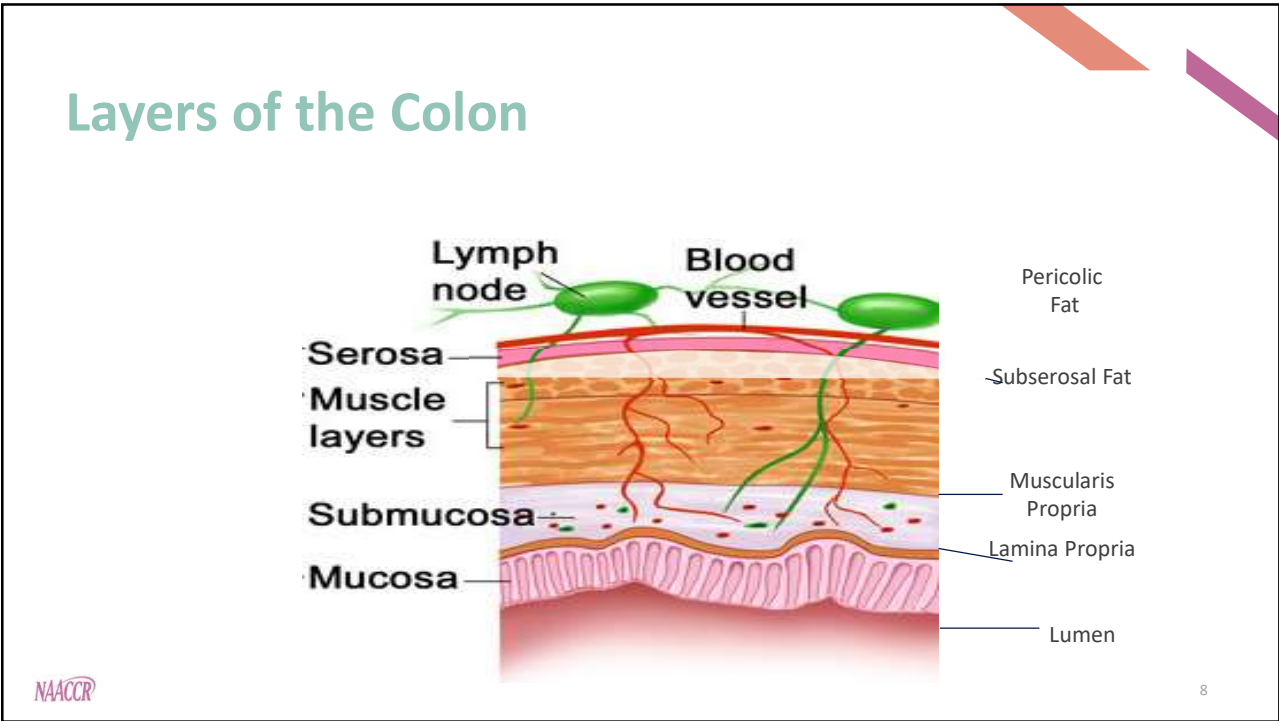


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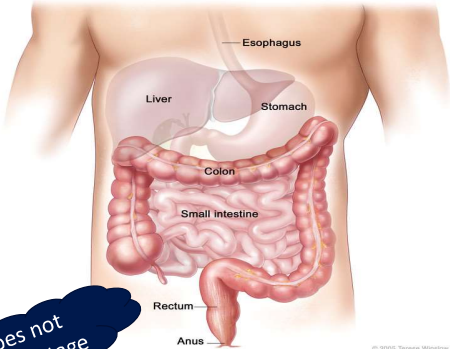


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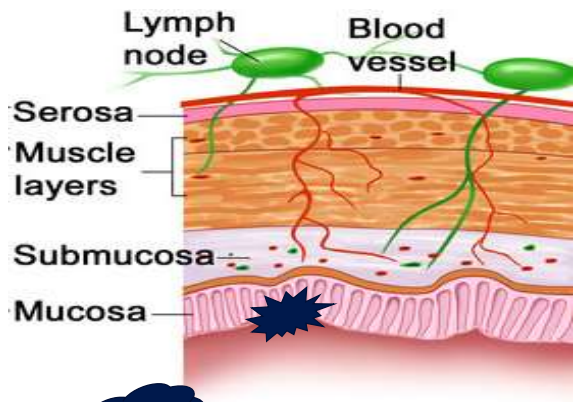
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Intraluminal/Intramural vs Intramucosal



Does not impact stage

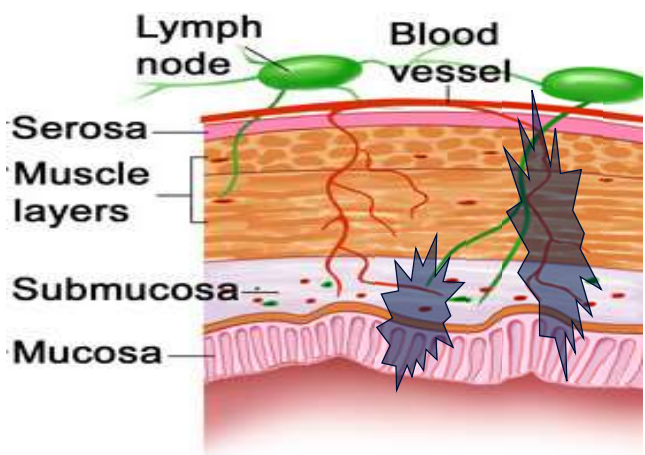
Intraluminal-extending from on part of the colon to another along the lumen



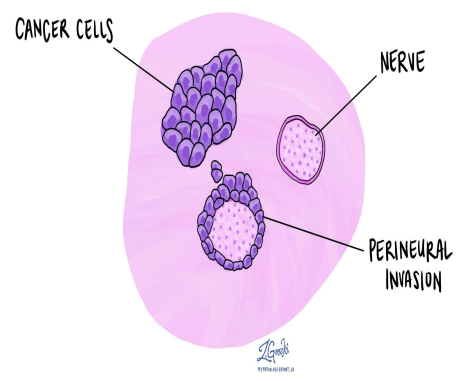
Does impact stage

Intramucosal-confined to the mucosa

Lymphovascular Invasion (LVI) Perineural Invasion

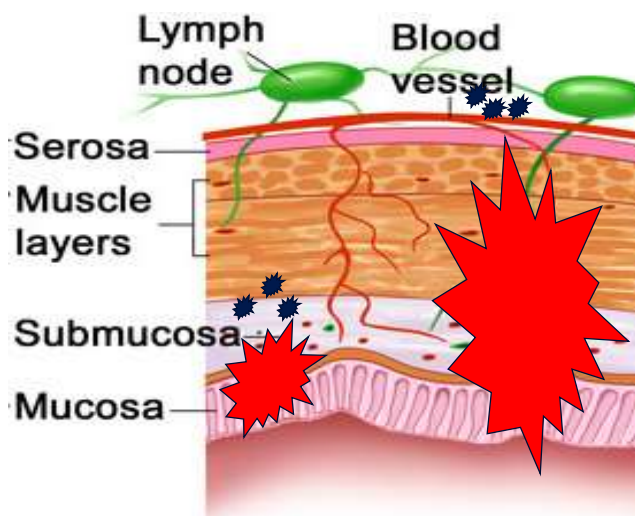


PERINEURAL INVASION = CANCER CELLS ATTACHED TO A NERVE



Tumor Budding vs Tumor Deposits

- Tumor Budding (not collected)
 - 1-4 tumor cells out in front of the primary tumor.
- Tumor deposits
 - A tumor focus in the pericolic/perirectal fat or in adjacent mesentery (mesocolic or rectal fat) within the lymph drainage area of the primary tumor, but without identifiable lymph node tissue or vascular structure.

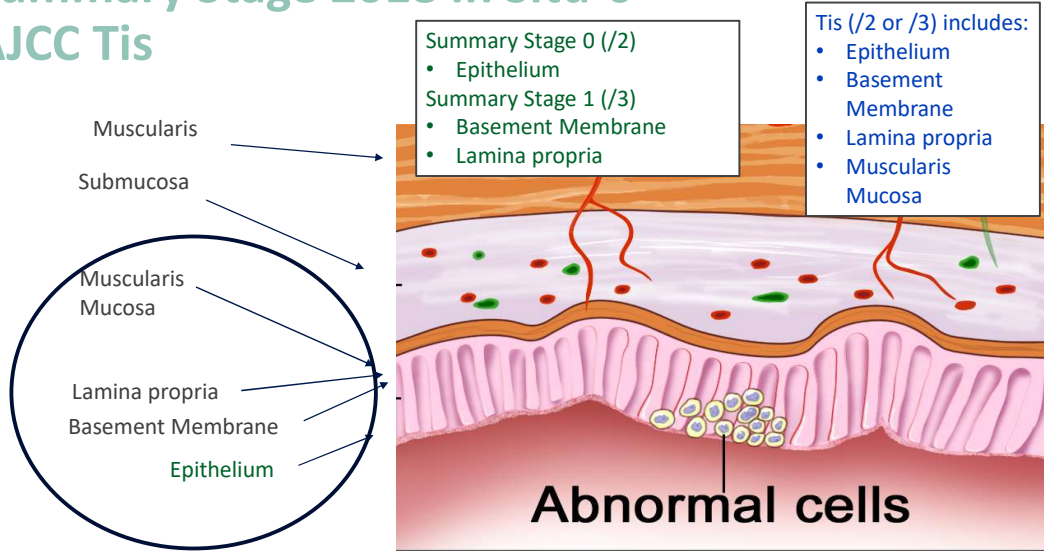


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Summary Stage 2018 In Situ-0 AJCC Tis



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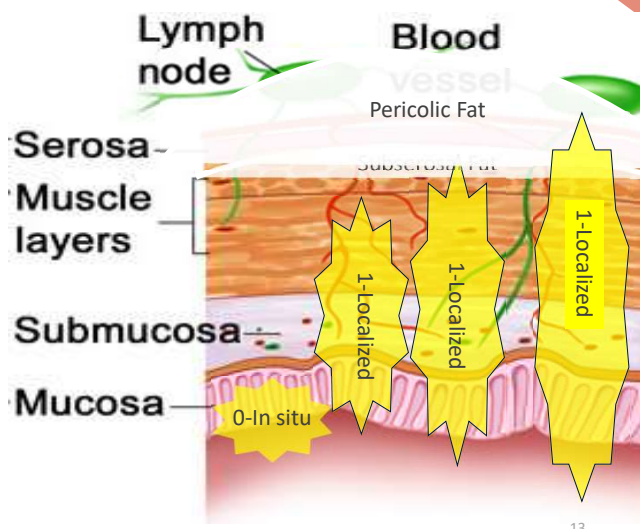
Summary Stage 2018

1- Localized

- Invasive tumor confined to:
 - Intramucosal NOS
 - Lamina propria
 - Mucosa NOS
 - Muscularis mucosae
 - Muscularis propria
 - Perimuscular tissue invaded
 - Polyp NOS
 - Submucosa
 - Subserosal tissue/fat**
 - Transmural NOS
 - Wall NOS

2-Regional by Direct Ext

- All colon sites
 - Invasion of/through **serosa**
 - Extension into/through:
 - Abdominal wall
 - Adjacent tissue NOS
 - Small intestine
 - Pericolic fat



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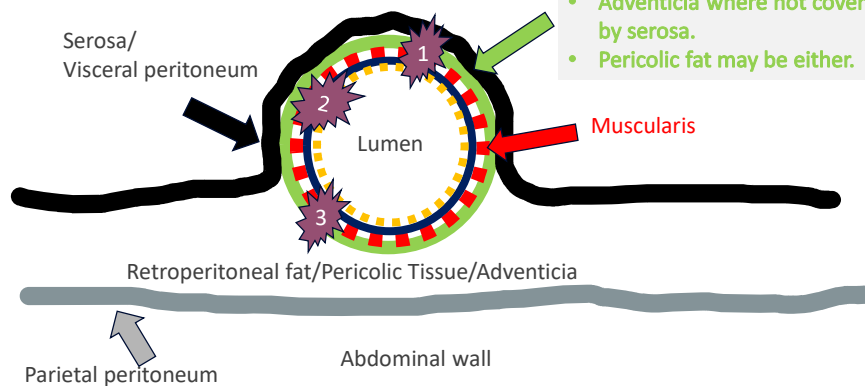
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Poll 1-Localized vs Regional

Peritonealized-portion of the colon covered by peritoneum (serosa)

- Subserosal fat were covered by serosa.
- Adventicia where not covered by serosa.
- Pericolic fat may be either.



Ascending or Descending Colon

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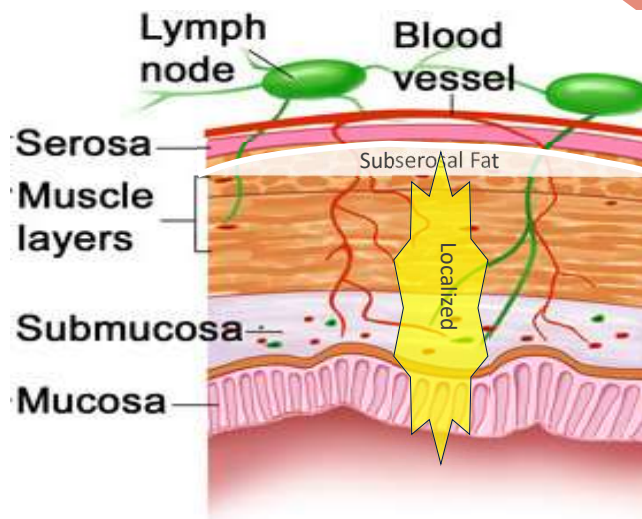
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What is EOD Primary Tumor/SS2018 for the two cases below...

1. Primary site is cecum (totally encased by peritoneum). Tumor invades into, but not through the subserosal fat. Peritoneum is present, but not involved.
 - ➡ a. 300 (localized) or
 - b. 400 (RE)

2. Primary site is ascending colon (partially peritonealized). Tumor invades into, but not through the subserosal fat. Peritoneum is present, but not involved.
 - ➡ a. 300 (localized) or
 - b. 400 (RE)



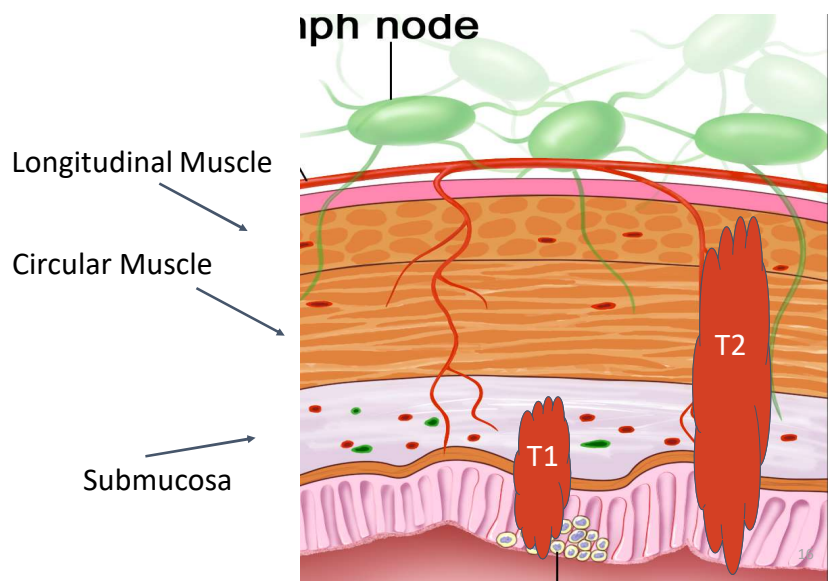
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Confined to the Colon Wall

- Invasion into, but not through the submucosa
- Invasion into, but not through the muscularis



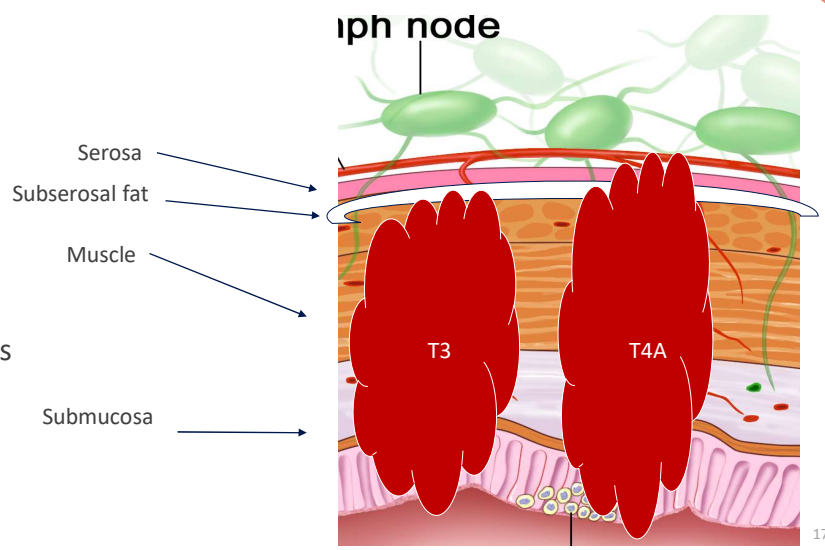
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Through the Musculature

- Invasion through the muscularis
 - No involvement of the serosa
 - No involvement of adjacent organs or structures
- Invasion into the serosa with no involvement of other sites and structures



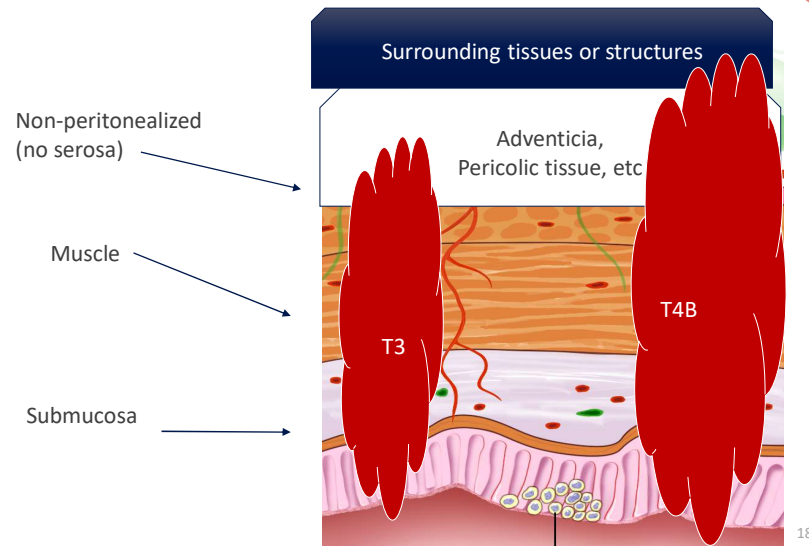
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Through the Musculature

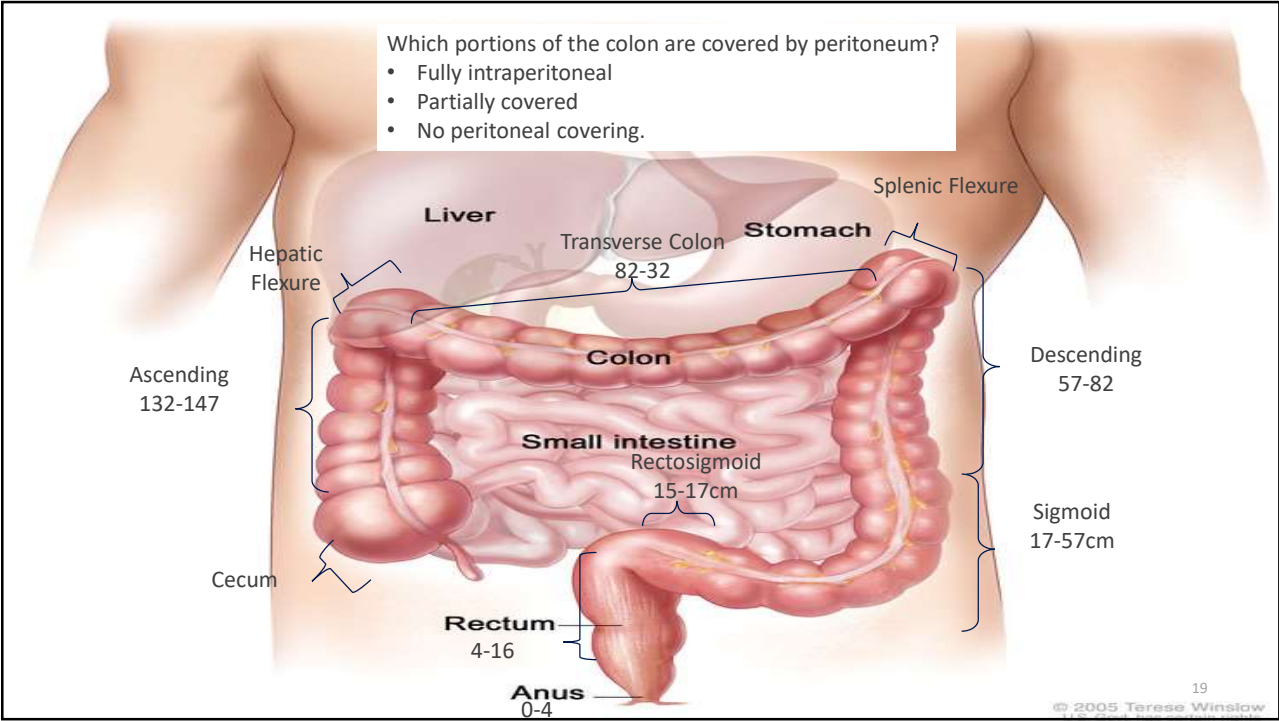
- Invasion through the muscularis
 - No involvement of the serosa
 - No involvement of adjacent organs or structures
- Invasion into the serosa with no involvement of other sites and structures



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Peritoneum/Serosa

- Cecum
 - Fully covered
- Ascending Colon
 - Posterior not covered
- Transverse
 - Fully covered
- Descending
 - Posterior not covered
- Sigmoid
 - Fully covered
- Rectum
 - Upper 2/3 partial
 - lower 1/3 not covered

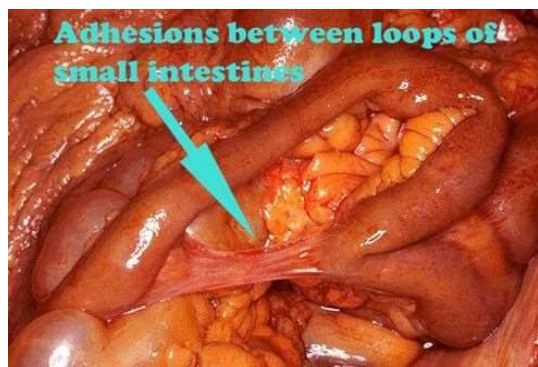
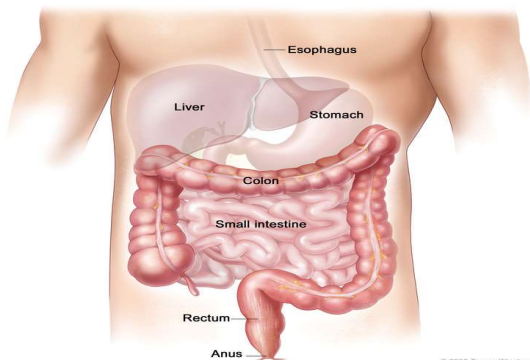
The diagram shows the following parts:

- Colon**
- Small intestine**
- Rectum**
- Anus**

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Adhesions



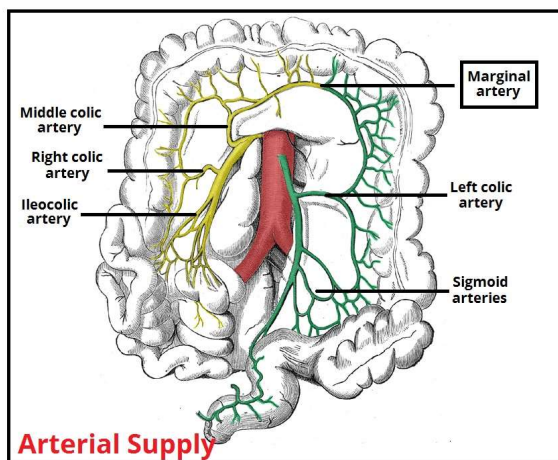
- If adhesions contain malignancy, they are considered tumor extension.
- If adhesions do not contain malignancy, they are not a staging factor.



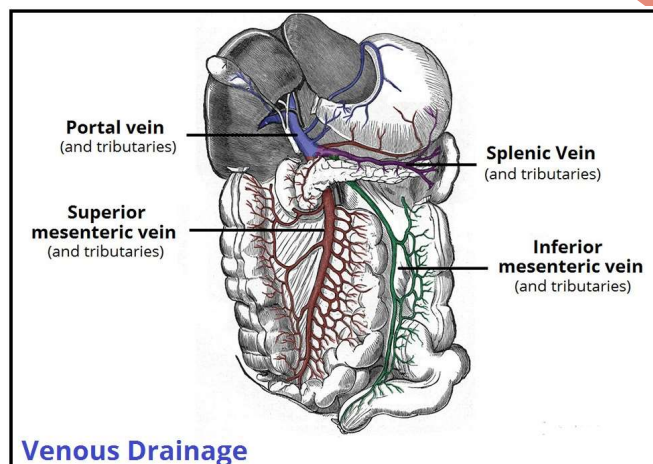
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Colon Blood Supply



Arterial Supply



Venous Drainage

<http://teachmeanatomy.info/abdomen/gi-tract/colon/>



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Phase-Standard

CoC Operative Standard 5.6 Colon Resection

Measure of Compliance

- Each calendar year, the cancer program fulfills the compliance criteria:
 - 1. Resection of the tumor-bearing bowel segment and complete lymphadenectomy is performed en bloc with proximal vascular ligation at the origin of the primary feeding vessel(s).
 - 2. Operative reports for resections for colon cancer document the required elements in synoptic format.

Synoptic Operative Report Requirements

- Operation performed with curative intent (Yes/No)
- Tumor location
- Extent of colon and vascular resection
 - Examples:
 - Right hemicolectomy – ileocolic, right colic (if present);
 - Extended right hemicolectomy – ileocolic, right colic (if present), middle colic;



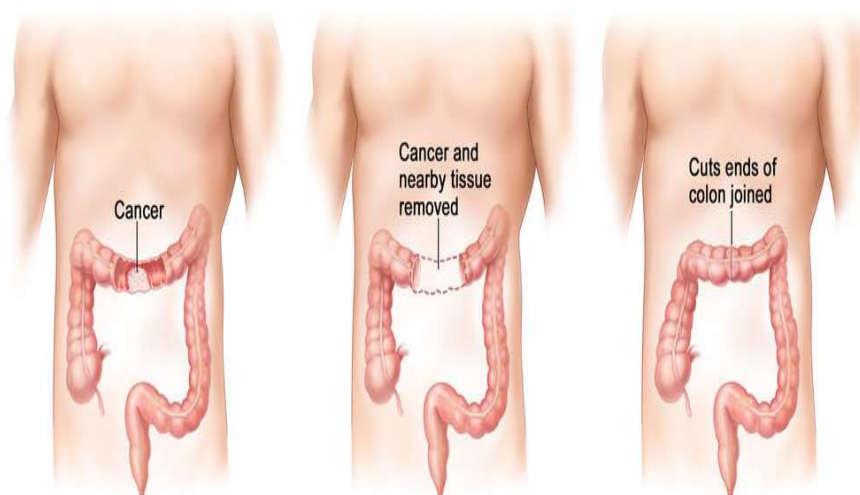
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Surgery

Resection of the Colon with Anastomosis

- STORE 2022
- SEER Appendix C: Site Specific Coding Modules
 - Colon, Rectosigmoid, Rectum
 - Codes removed
 - 11 Photodynamic therapy (PDT)
 - 13 Cryosurgery
 - 14 Laser



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CoC Operative Standard 5.7 Total Mesorectal Excision

- Measure of Compliance
 - Each calendar year, the cancer program fulfills the compliance criteria:
 1. Total mesorectal excision is performed for patients undergoing radical surgical resections of mid and low rectal cancers, resulting in complete or near-complete total mesorectal excision.
 2. Pathology reports for resections of rectal adenocarcinoma document the quality of TME resection (complete, near complete, or incomplete) in synoptic format.

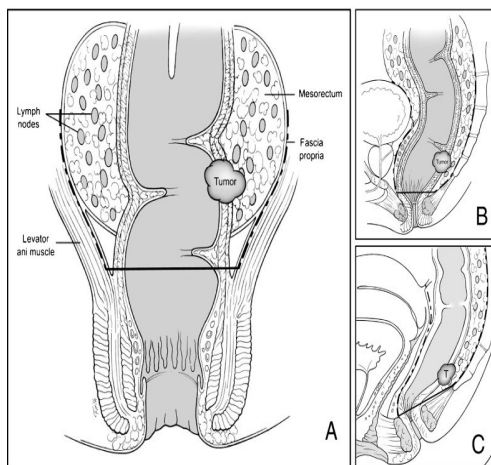
https://www.facs.org/-/media/files/quality-programs/cancer/coc/optimal_resources_for_cancer_care_2020_standards.ashx



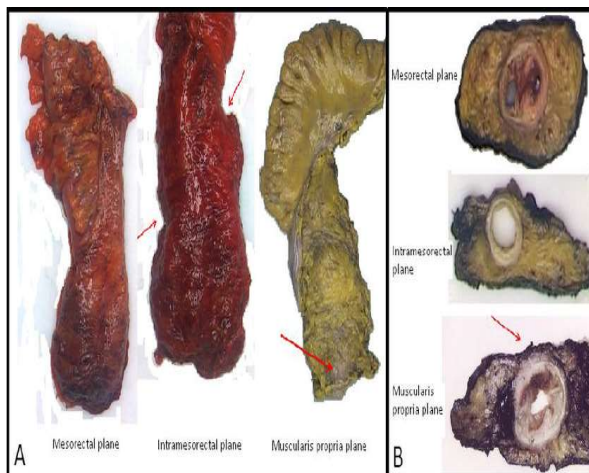
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TME/CRM



Sphincter-Sparing Surgery in Patients with Low-Lying Rectal Cancer: Techniques, Oncologic Outcomes, and Functional Results - Scientific Figure on ResearchGate. Available from: https://www.researchgate.net/figure/Appropriate-planes-for-total-mesorectal-excision-a-Anterior-view-demonstrating_fig1_263094035 [accessed 19 Apr, 2022]



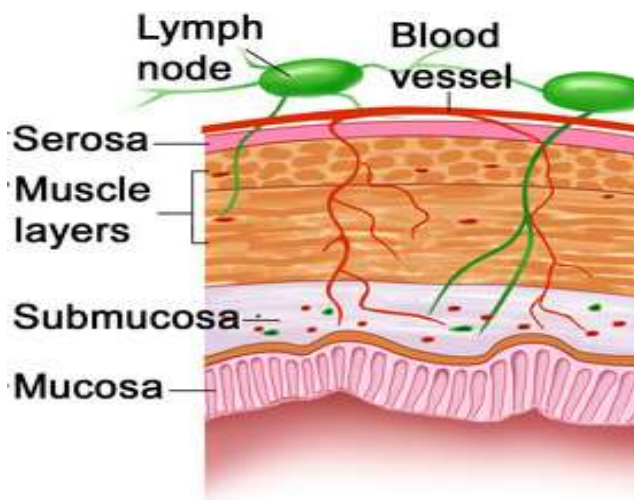
Bosch, Steven & Nagtegaal, Iris. (2012). The Importance of the Pathologist's Role in Assessment of the Quality of the Mesorectum. Current colorectal cancer reports. 8. 90-98. 10.1007/s11888-012-0124-7.

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Colon Primaries

- Ninety-eight percent of colon cancers are adenocarcinoma and adenocarcinoma subtypes.
- Use the Solid Tumor Rules to determine multiple primaries and assign histology
 - Timing rule for rules M7/M8 changed for 2022
 - LAMN and HAMN 8480/2 are reportable for 2022+



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What does the MSS biomarker mean?

About **85%**

of colorectal tumors are MSS with a functional MMR process and **no mutations** in their MMR genes.

Approximately **15%**

of colorectal cancer patients have dMMR and are MSI-H.

In 3-5% of those patients, MSI-H is caused by Lynch syndrome due to a hereditary mutation (also called a germline mutation) that is passed from generation to generation. Lynch syndrome patients have a higher chance of developing colorectal, endometrial, gastric, ovarian or other cancers.

<https://www.youtube.com/watch?v=s7Dx3fr0fjM>

<https://www.youtube.com/watch?v=eqbgU1aTFR8>



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<https://www.ccalliance.org/colorectal-cancer-information/biomarkers/biomarkers-mss>

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Biomarkers

Biomarker	
KRAS and NRAS	
KRAS/NRAS Wild-Type (negative for mutation) EGFR-inhibitor drugs may be an option for treatment	KRAS/NRAS Mutant (positive for mutation) EGFR-inhibitor drugs may not be an option for treatment
BRAF	
BRAF Wild-Type (negative for mutation) May be eligible for EGFR-inhibitor drugs	BRAF Mutation (usually v600) Patient do not respond to EGFR-inhibitor drugs
MSI/MMR	
MSI-H or dMMR May not respond well to standard chemotherapy May respond well to immunotherapy treatments	MSI-L or MSS or pMMR Should respond to standard chemotherapy May not respond well to immunotherapy



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Neoadjuvant Treatment

Neoadjuvant Therapy

- Systemic treatment and/or radiation therapy before intended or performed surgical resection

Neoadjuvant Therapy-- Clinical Response

- Records the clinical outcomes of neoadjuvant therapy as determined by the managing physician (oncologic surgeon, radiation oncologist or medical oncologist).

Neoadjuvant Therapy-- Treatment Effect

- This data item provides information related to the quality of care and describes the pathological outcomes after neoadjuvant therapy.

These data items are only required by SEER for cases diagnosed 2021 and later



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Case Scenario #1 – Summary of Workup

- 9/18 Screening colonoscopy: rectal mass located 3cm above dentate line, biopsied
 - Bx path: Invasive well differentiated (WD) adenocarcinoma
- 9/30 CEA 8.5 ng/mL (<5.0 ng/mL)
- 10/7 PET/CT: hypermetabolic presacral LNs, bilateral calcified & non-calcified pulmonary nodules
- 10/9 MRI Pelvis: low to mid rectal tumor with extramural invasion. Tumor extends up to the low posterior mesorectal fascia with abnormal mesorectal and extra mesorectal LNs
- 10/22 MD note: cT3N1M0 Stage IIIB rectal cancer, recommend neo-adjuvant chemo and radiation, followed by surgery



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Case Scenario #1 – Summary of Treatment

- 10/25 - 12/5 neo-adjuvant Xeloda
- Radiation Treatment Summary:

Treatment Site	Energy	Dose/Fx (cGy)	#Fx	Total Dose (cGy)	Start Date	End Date	Elapsed Days
Pelvis IMRT	6x	180	25/25	4500	10/28/22	12/2/22	35
Pelvis Boost IMRT	6x	180	3/3	540	12/4/22	12/5/22	2
Total:				5040	10/28/22	12/5/22	37

- 1/31 – Operative Report: Robotic assisted abdominoperineal resection (APR) with Lymph Node dissection
- 2/5 – Begin adjuvant Xeloda



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Case Scenario #1 – Pathology Synoptic Report

- PROCEDURE: Abdominoperineal resection.
- LOCATION OF TUMOR: Rectum.
- TUMOR SIZE: 4 x 2.3 x 0.9 cm.
- MACROSCOPIC TUMOR PERFORATION: Not identified.
- MACROSCOPIC INTACTNESS OF MESORECTUM: Complete.
- HISTOLOGIC TYPE: Adenocarcinoma.
- HISTOLOGIC GRADE: Moderately differentiated (post-treatment).
- MICROSCOPIC DEPTH OF INVASION: Tumor invades through the muscularis propria into perirectal soft tissue
- MARGINS: Proximal margin: Negative (tumor is 21 cm from margin). Distal margin: Negative (tumor is 4.5 cm from margin).
- MARGINS: Circumferential (radial) margin: Negative (tumor is 9 mm from margin, slide A6). Mesenteric margin: Not applicable. Deep margin: Not applicable. Mucosal margin: Not applicable.
- TREATMENT EFFECT (modified Ryan score, scale 0-3): Partial response, score 2.
- LYMPHOVASCULAR INVASION: Not identified.
 - SMALL VESSEL LYMPHOVASCULAR INVASION: Not identified.
 - LARGE VESSEL (VENOUS) INVASION: Not identified.
- PERINEURAL INVASION: Not identified.
- TUMOR DEPOSITS: Not identified.
- LYMPH NODE STATUS: Number of lymph nodes involved: 4.
- NUMBER OF LYMPH NODES EXAMINED: 12.



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Case Scenario #1 – Tumor Description

Data Item	Code	Explanation
Primary Site	C20.9	
Histology	8140	
Behavior	3	
Tumor Size Clinical	999	
Tumor Size Pathological	999	There was neo-adjuvant therapy prior to surgery. Do NOT use a post-neoadjuvant size to code path tumor size.
Tumor Size Summary	999	
Grade Clinical	1	Well differentiated per biopsy path report
Grade Pathological	9	Neo-adjuvant therapy, code = 9
Grade Post Therapy Clin (yc)	<blank>	Neo-adjuvant therapy complete, no microscopic exam done prior to resection
Grade Post Therapy Path (yp)	2	Moderately differentiated per surgery path report



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Grade Post Therapy Clin (yc)

Code	Description
1	G1: Well Differentiated
2	G2: Moderately Differentiated
3	G3: Poorly Differentiated
4	G4: Undifferentiated
9	Grade Cannot be assessed; Unknown
<blank>	See Note 1

Note 1: Leave Grade Post Therapy Clin (yc) blank when

- No neoadjuvant therapy
- Clinical or pathological case only
- Neoadjuvant therapy completed, no microscopic exam is done prior to surgery/resection of primary tumor
- There is only one grade available and it cannot be determined if it is clinical, pathological, post therapy clinical or post therapy pathological

Note 2: Assign the highest grade from the microscopically sampled specimen of the primary site following neoadjuvant therapy or primary systemic/radiation therapy.

Note 3: If there are multiple tumors with different grades abstracted as one primary, code the highest grade.

Note 4: G4 includes anaplastic.

Note 5: Code 9 (unknown) when

- Microscopic exam is done after neoadjuvant therapy and grade from the primary site is not documented
- Microscopic exam is done after neoadjuvant therapy and there is no residual cancer
- Grade checked "not applicable" on CAP Protocol (if available) and no other grade information is available



Poll Question



Poll Question #3 – What Grade is it?

Scenario	Grade Clinical	Grade Path	Grade Post Therapy Clin (yc)	Grade Post Therapy Path (yp)
#1 Biopsy – MD Adenocarcinoma Neo-Adjuvant Therapy followed by Surgical resection – no residual cancer	2	9	<blank> See Note 1	9 See Note 7
#2 Biopsy – MD Adenocarcinoma Neo-Adjuvant Therapy Follow-up Bx shows no residual Surgical resection not done	2	9	9 See Note 5	<blank> See Note 1
#3 Biopsy – MD Adenocarcinoma Neo-Adjuvant Therapy Follow-up BX shows WD Adenocarcinoma Surgical resection – no grade documented	2	9	1	1 See Note 6



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Case Scenario #1 – AJCC Staging

	T	N	M	Stage	Explanation
Clinical	cT3	cN1	cM0	IIIB	
Pathological					Neo-adjuvant therapy, no pathological staging
Post-Therapy Clin					Neoadjuvant therapy complete, no post-therapy assessment in medical record prior to surgery
Post-Therapy Path	ypT3	ypN2a	cM0	IIIB	Tumor invades pericorectal tissue, 4 nodes involved



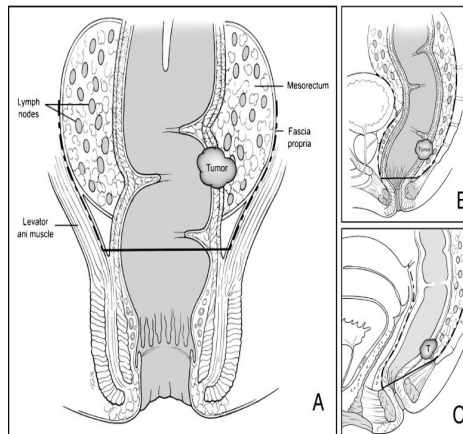
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Case Scenario #1 – EOD and Summary Stage

What we know?

- Pre-treatment MRI: Tumor extends up to mesorectal fascia
- Surgical Path report: Tumor invades perirectal tissue, 4/12 LNs involved, partial response to treatment



Sphincter-Sparing Surgery in Patients with Low-Lying Rectal Cancer: Techniques, Oncologic Outcomes, and Functional Results - Scientific Figure on ResearchGate. Available from: https://www.researchgate.net/figure/Appropriate-planes-for-total-mesorectal-excision-a-Anterior-view-demonstrating_fig1_263094035 [accessed 19 Apr, 2022]

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Case Scenario #1 – EOD and Summary Stage

Data Item	Code	Explanation
EOD Primary Tumor	400	Per the pre-treatment MRI, the tumor extends “up to” the mesorectal fascia. The mesorectal fascia is a layer of connective tissue enclosing the perirectal fat (mesorectum) that surrounds the rectum. Perirectal fat invasion is listed under code 400
EOD Regional Nodes	300	
EOD Mets	00	
Summary Stage 2018	4	Perirectal fat + perirectal lymph nodes



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Case Scenario #1 – SSDIs

Data Item	Code	Explanation
Lymphovascular Invasion	9	Unknown prior to neoadjuvant therapy, not identified on surgical path report
Macroscopic Evaluation of Mesorectum (new for 2022+)	30	Complete per path synoptic report
CEA PreTx Lab Value	8.5	
CEA PreTx Interpretation	1	Elevated
Tumor Deposits	00	
Perineural Invasion	0	
Circumferential Resection Margin	9.0	9mm
KRAS	9	
Microsatellite Instability	0	Mismatch repair (MMR) intact, no loss of nuclear expression of MMR proteins. Path Addendum: MLH1 expression: present, PMS2 expression: present, MSH2 expression: present; MSH6 expression: present
BRAF Mutational Analysis (new for 2021+)	9	
NRAS Mutational Analysis (new for 2021+)	9	



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Macroscopic Evaluation of Mesorectum

Records whether a total mesorectal excision (TME) was performed and the macroscopic evaluation of the completeness of the excision.

- Applies to **Rectal Cases Only**
- TME removes fatty tissue (mesorectum) around the rectum during surgery and is used for curative resection of tumors of the middle and lower thirds of the rectum
- Usually as part of Low Anterior Resection or Abdominoperineal Resection
- **Information for this data item comes from the pathology report only**
- It is a checklist item in the [ColoRectal CAP Protocol](#):
 - Macroscopic Evaluation of Mesorectum
- Can be found in the Synoptic report section on the pathology report

*Beginning in 2022 the words "Total Mesorectal Excision (TME)" have been removed from surgery code 30 for Rectum

Code	Description
00	Patient did not receive TME
10	Incomplete
20	Nearly Complete
30	Complete
40	TME performed, unknown if incomplete, near complete, complete TME performed, but pathology report not available Physician statement that TME performed, no mention of incomplete, nearly complete or complete status
99	Unknown if TME performed
<Blank>	Site not rectum (C209)



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Macroscopic Evaluation of Mesorectum



Colorectal CAP Protocol Note A

Incomplete

- Little bulk to the mesorectum
- Defects in the mesorectum down to the muscularis propria
- After transverse sectioning, the circumferential margin appears very irregular

Nearly Complete

- Moderate bulk to the mesorectum
- Irregularity of the mesorectal surface with defects greater than 5 mm, but none extending to the muscularis propria
- No areas of visibility of the muscularis propria except at the insertion site of the levator ani muscles

Complete

- Intact bulky mesorectum with a smooth surface
- Only minor irregularities of the mesorectal surface
- No surface defects greater than 5 mm in depth
- No coning towards the distal margin of the specimen
- After transverse sectioning, the circumferential margin appears smooth

Zuhdy, Mohammad. (2020). Trans-anal versus Laparoscopic Total Mesorectal Excision in rectal cancer patients . 10.13140/RG.2.2.16458.52168.



Macroscopic Evaluation of Mesorectum

EXCERPT FROM CASE SCENARIO # 1 GROSS PATHOLOGY:

- “The mesorectum appears grossly intact and complete.”

EXCERPT FROM CASE SCENARIO # 1 SYNOPSIS:

- PROCEDURE: Abdominoperineal resection.
- LOCATION OF TUMOR: Rectum.
- TUMOR SIZE: 4 x 2.3 x 0.9 cm.
- MACROSCOPIC TUMOR PERFORATION: Not identified.
- MACROSCOPIC INTACTNESS OF MESORECTUM: Complete.
- HISTOLOGIC TYPE: Adenocarcinoma.
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- MARGINS: Proximal margin: Negative (tumor is 21 cm from margin). Distal margin: Negative (tumor is 4.5 cm from margin).). Circumferential (radial) margin: Negative (tumor is 9 mm from margin, slide A6). Mesenteric margin: Not applicable.



Case Scenario #1 – Summary of Treatment

- 10/25 - 12/5 neo-adjuvant Xeloda
- Radiation Treatment Summary:

Treatment Site	Energy	Dose/Fx (cGy)	#Fx	Total Dose (cGy)	Start Date	End Date	Elapsed Days
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- 2/5 – Begin adjuvant Xeloda



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Case Scenario #1 – Surgery/Systemic Treatment

Data Item	Code	Explanation
Diagnostic Staging Procedure	02	Rectal biopsy
Neoadjuvant Therapy	1	Neo-adjuvant therapy completed according to tx plan
Neoadjuvant Therapy-Clinical Response	8	Neo-adjuvant therapy complete, response not documented
Neoadjuvant Therapy-Treatment Effect	3	Score 2 per path Synoptic report
Surgical Procedure of Primary Site	50	Abdominoperineal resection
Scope of Regional Lymph Node Surgery	5	12 lymph nodes examined
Surgical Procedure of Other Site	0	
Chemotherapy	02	Single Agent - Xeloda
Hormonal Therapy	00	
Immunotherapy	00	
Hematologic Therapy	00	
Systemic/Surgery Sequence	4	Xeloda both before and after surgery



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Case Scenario #1 – Radiation Therapy

Radiation	Phase 1	Phase 2	Phase 3
Primary Treatment Volume	54 (rectum)		
Radiation to Draining Lymph Nodes	06 (pelvic LNs)		
Rad Treatment Modality	02 (photons)		
Ext Beam Planning Technique	05 (IMRT)		
Dose Per Fraction	00180		
Number of Fraction	028		
Total Dose	005040		
Total Number of Phases	01	Per STORE Manual pg 57: A new phase begins when there is a change in the target volume of a body site, treatment fraction size, modality, or treatment technique. Although the last three fractions were described as a “boost”, the target volume, modality, planning technique and dose per fraction did not change. Therefore, there is only one phase of radiation	
Radiation Treatment Discontinued Early	01		
Total Dose	005040		
Radiation/Surgery Sequence	2		



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Questions?



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Case Scenario #2 – Summary of Workup/Treatment

- Patient with two months of intermittent abdominal pain and black/red stool
- 8/30 CT A/P: mesenteric fat seen telescoping into cecum, likely 2nd to occult mass, enlarged pericecal lymph nodes
- 8/31 CT Chest: no evidence of mets
- 9/1 Colonoscopy: malignant appearing large mass in cecum, biopsied
 - Biopsy Path Report: adenocarcinoma, moderately differentiated, Microsatellite instability - High
- 9/3 Surgery – Lap Assisted Rt Hemicolectomy, omentectomy: probable peritoneal implant on omentum, bulky transmural cecal tumor
- 10/13 Folfox for 12 cycles

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Case Scenario #2 – Excerpt of Path Report

- OMENTECTOMY: metastatic adenocarcinoma
- COLON/RECTUM SYNOPTIC REPORT:
- PROCEDURE: Right hemicolectomy
- MACROSCOPIC INTACTNESS OF MESORECTUM: Not applicable
- TUMOR SITE: Cecum
- HISTOLOGIC TYPE: Adenocarcinoma; Histologic Type Comments: Focally the tumor shows mucinous features \R\5-10%
- HISTOLOGIC GRADE: G2: Moderately differentiated
- TUMOR SIZE: Greatest dimension (Centimeters): 7.0; Additional Dimension (Centimeters): 4
- TUMOR DEPOSITS: Present; Number of Deposits: 2
- TUMOR EXTENSION: Tumor invades through the muscularis propria into pericorectal tissue
- MACROSCOPIC TUMOR PERFORATION: Not identified
- LYMPHOVASCULAR INVASION: Present;
 - Small vessel lymphovascular invasion
 - Large vessel (venous) invasion, intramural
 - Large vessel (venous) invasion, extramural
- PERINEURAL INVASION: Not identified
- TUMOR BUDDING: NUMBER OF TUMOR BUDS: 6; Tumor Bud Score: Intermediate score (5-9)
- MARGINS (Centimeters):
 - Proximal Margin: Uninvolved by invasive carcinoma; Distance of Tumor from Margin: 5.0
 - Distal Margin: Uninvolved by invasive carcinoma; Distance of Tumor from Margin: 9.0
 - Radial or Mesenteric Margin: Uninvolved by invasive carcinoma; Distance of Tumor from Margin: 7.0
- NUMBER OF LYMPH NODES INVOLVED:13; Number of Lymph Nodes Examined: 15

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Case Scenario #2 – Tumor Description

Data Item	Code	Explanation
Primary Site	C180	Cecum
Histology	8140	Adenocarcinoma
Behavior	3	Invasive
Tumor Size Clinical	999	
Tumor Size Pathological	070	7cm tumor on path
Tumor Size Summary	070	
Grade Clinical	2	MD per biopsy
Grade Pathological	2	MD per surgical resection
Grade Post Therapy Clin (yc)	<blank>	No neo-adjuvant therapy
Grade Post Therapy Path (yp)	<blank>	No neo-adjuvant therapy



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Case Scenario #2 – AJCC Staging

	T	N	M	Stage	Explanation
Clinical	cT(blank)	cN(blank>	cM0	99	There was not enough information in the clinical workup to assign clinical T or N. The findings of a transmural tumor and probably omental mets at time of surgery are part of pathological staging and not clinical staging. See AJCC Chapter 1 “Clinical Classification”
Pathological	pT3	pN2b	pM1c	IVC	Pericorectal tissue invaded, involved LNs, mets to omentum
Post-Therapy Clin					No neo-adjuvant therapy
Post-Therapy Path					No neo-adjuvant therapy



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Case Scenario #1 – EOD and Summary Stage

What we know?

- Tumor invades pericolorectal tissue, 13/15 LNs involved, mets to omentum

EOD Primary Tumor Code 300	EOD Primary Tumor Code 400
<ul style="list-style-type: none"> • Extension through wall, NOS • Invasion through muscularis propria or muscularis, NOS <ul style="list-style-type: none"> • Rectum: WITH or WITHOUT intraluminal extension to colon and/or anal canal/anus • Non-peritonealized pericolic/perirectal tissues invaded (see Code 400 for peritonealized pericolic/perirectal tissues invaded. See Note 5) • Pericolic/perirectal tissues invaded, NOS (unknown whether non-peritonealized or peritonealized. See Note 5) • Perimuscular tissue invaded • Subserosal tissue/(sub)serosal fat invaded • Transmural, NOS • Wall, NOS 	<ul style="list-style-type: none"> • Adjacent (connective) tissue(s), NOS • Fat, NOS • Gastrocolic ligament (transverse colon and flexures) • Greater omentum (transverse colon and flexures) • Mesentery (including mesenteric fat, mesocolon) • Pericolic fat • Perirectal fat • Peritonealized pericolic/perirectal tissues invaded (see code 300 for non-peritonealized pericolic/perirectal tissues invaded. See Note 5) • Rectovaginal septum (rectum) • Retroperitoneal fat (ascending and descending colon only)



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Excerpt from Colon/Rectum CAP Protocol

Tumor Extent

- No invasion (high grade dysplasia)
- Invades lamina propria / muscularis mucosae (intramucosal carcinoma)
- Invades submucosa
- ~~Invades into muscularis propria~~
- Invades through muscularis propria into pericolorectal tissue
- Invades visceral peritoneum (including tumor continuous with serosal surface through area of inflammation)
- Directly invades or adheres to adjacent structure(s) (specify): _____
- Cannot be determined: _____
- No evidence of primary tumor

The CAP protocol data element “Tumor Extent” does not include an option to indicate if peritonealized or non-peritonealized soft tissue is invaded (only that pericolorectal tissue is invaded). So, this information will not be available in the Synoptic report. Therefore, for sites that are partially peritonealized, you must look to the Gross in the path report to see if it describes the tumor’s relation to the serosa/peritoneal surface.



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EOD Primary Tumor – Note 5

Note 5: Invasion into "pericolonic/pericolorectal tissue" can be either codes 300 or 400, depending on the primary site. Some sites are entirely peritonealized; some sites are only partially peritonealized or have no peritoneum. Code 300 may not be used for sites that are entirely peritonealized (cecum, transverse colon, sigmoid colon, rectosigmoid colon, upper third of rectum).

› Code 300

- › 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

› Code 400

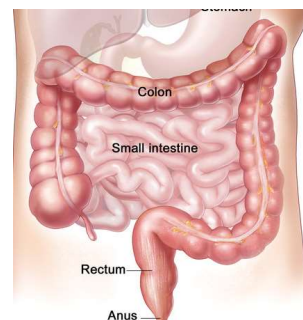
- › Mesentery
- › Peritonealized pericolic/perirectal tissues invaded [Ascending Colon/Descending Colon/Hepatic Flexure/Splenic Flexure/Upper third of rectum: anterior and lateral surfaces; Cecum; Sigmoid Colon; Transverse Colon; Rectosigmoid; Rectum: middle third anterior surface]
- › Pericolic/Perirectal fat

› If the pathologist does not further describe the "pericolic/perirectal tissues" as either "non-peritonealized pericolic/perirectal tissues" vs "peritonealized pericolic/perirectal tissues" 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 300.



Peritonealized vs Non-Peritonealized

Sub-Site	Non-Peritonealized	Peritonealized
Cecum		X (entirely)
Ascending Colon	X (posterior surface)	X (anterior and lateral surfaces)
Hepatic Flexure	X (posterior surface)	X (anterior and lateral surfaces)
Transverse Colon		X (entirely)
Splenic Flexure	X (posterior surface)	X (anterior and lateral surfaces)
Descending Colon	X (posterior surface)	X (anterior and lateral surfaces)
Sigmoid		X (entirely)
Rectosigmoid		X (entirely)
Upper Third Rectum	X (posterior surface)	X (anterior and lateral surfaces)
Middle Third Rectum	X (posterior surfaces)	X (anterior surface)
Lower Third Rectum	X (entirely)	



Case Scenario #2 – EOD and Summary Stage

Data Item	Code	Explanation
EOD Primary Tumor	400	See Note 5 in instructions. Pericorectal tissue invasion per path report. No other information in the Gross Description. The cecum is entirely peritonealized, so we know peritonealized pericolic tissue was invaded. Assign code 400
EOD Regional Nodes	300	13/15 lymph nodes involved
EOD Mets	50	Peritoneal implant on omentum was seen during surgery and confirmed to be metastatic adenocarcinoma in path report
Summary Stage 2018	7	

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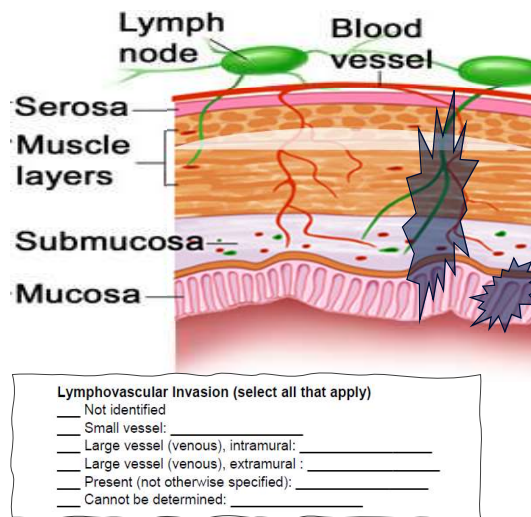
Case Scenario #2 – SSDIs

Data Item	Code	Explanation
Lymphovascular Invasion	4	LVI, small vessel LVI and large vessel venous invasion per path report
Macroscopic Evaluation of Mesorectum (new for 2022+)	<blank>	Site not rectum (C209)
CEA PreTx Lab Value	XXXX.9	
CEA PreTx Interpretation	9	
Tumor Deposits	02	2 per path report
Perineural Invasion	0	Not identified per path
Circumferential Resection Margin	70.0	7cm per path
KRAS	9	
Microsatellite Instability	2	High per biopsy
BRAF Mutational Analysis (new for 2021+)	9	
NRAS Mutational Analysis (new for 2021+)	9	

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Lymphovascular Invasion

Code	Label
0	Lymphovascular Invasion stated as Not Present
1	Lymphovascular Invasion Present/Identified
2	Lymphatic and small vessel invasion only (L)
3	Venous (large vessel) invasion only (V)
4	BOTH lymphatic and small vessel AND venous (large vessel) Invasion
8	Not Applicable
9	Unknown/Indeterminate/not mentioned in path report



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Case Scenario #2 – Surgery/Systemic Treatment

Data Item	Code	Explanation
Diagnostic Staging Procedure	02	
Neoadjuvant Therapy	0	
Neoadjuvant Therapy-Clinical Response	0	
Neoadjuvant Therapy-Treatment Effect	0	
Surgical Procedure of Primary Site	40	Rt Hemicolectomy
Scope of Regional Lymph Node Surgery	5	
Surgical Procedure of Other Site	2	Omentectomy
Chemotherapy	03	Folfox is multi-agent chemotherapy regimen per SEER*Rx
Hormonal Therapy	00	
Immunotherapy	00	
Hematologic Therapy	00	
Systemic/Surgery Sequence	3	

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Case Scenario #2 – Radiation Therapy

Radiation	Phase 1	Phase 2	Phase 3
Primary Treatment Volume	00		
Radiation to Draining Lymph Nodes	00		
Rad Treatment Modality	00		
Ext Beam Planning Technique	00		
Dose Per Fraction	00000		
Number of Fraction	000		
Total Dose	000000		
Total Number of Phases	00		
Radiation Treatment Discontinued Early	00		
Total Dose	000000		
Radiation/Surgery Sequence	0		



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Questions?



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Case Scenario #3 – Summary of Workup/Treatment

- Patient presents with a positive hemocult test
- 3/23 Colonoscopy: semi-pedunculated/sessile polyp in rectum 15cm from anal verge, polyp removed by hot snare
 - Polypectomy Path Report: Invasive moderately differentiated adenocarcinoma
- 3/25 CEA 1.5 (0.0-3.5)
- 5/11 Surgery: Low Anterior Resection (LAR) with Lymph Node Dissection
 - LAR Path Report: no residual malignancy, 26 lymph nodes negative for carcinoma, no tumor deposits, margins and radial margin negative
- No other treatment



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Case Scenario #3 – Polypectomy Path Report

FINAL DIAGNOSIS

- Colon Polyp, Rectum, Polypectomy: - Invasive Moderately Differentiated Adenocarcinoma Arising In Tubulovillous Adenoma, 0.5 Cm In Greatest Dimension Microscopically –
- Tumor Invading Submucosa.
- No Lymphovascular Invasion Identified.
- Resection Margin Negative For Malignancy

ADDENDUM

- DNA MISMATCH REPAIR TESTS Testing Performed on: Block: C5, COLON, RECTUM, POLYPECTOMY Immunohistochemistry (IHC) Results for Mismatch Repair (MMR) Proteins:
 - MLH1 Intact nuclear expression MSH2 Intact nuclear expression MSH6 Intact nuclear expression PMS2 Intact nuclear expression

SYNOPTIC

- TUMOR Tumor Site: Rectum
- HISTOLOGIC TYPE: Adenocarcinoma
- HISTOLOGIC GRADE: G2: Moderately differentiated
- SIZE OF INVASIVE CARCINOMA: Greatest dimension in Centimeters (cm): 0.5
- TUMOR EXTENT TUMOR EXTENSION: Tumor invades submucosa
- LYMPHOVASCULAR INVASION: Not identified
- TYPE OF POLYP IN WHICH INVASIVE CARCINOMA AROSE: Tubulovillous adenoma
- POLYP SIZE: Greatest dimension in Centimeters (cm): 2.8
- POLYP CONFIGURATION: Sessile
- MARGINS
 - Deep Margin (stalk margin): Uninvolved by invasive carcinoma ; Distance of Invasive Carcinoma from Margin: Cannot be assessed: sections with invasive carcinoma do not have resection margin.
 - Mucosal Margin: Uninvolved by invasive carcinoma



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Polypectomy... Surgery vs AJCC Staging/Grade

- Surgery data items and AJCC TNM/Grade Data Items are independent of each other and have their own set of guidelines.
- A polypectomy coded as surgery does not automatically mean that it should be used to assign Pathological TNM
- Conversely, using Polypectomy findings to assign Clinical TNM does not mean the polypectomy should be coded as a diagnostic/staging procedure
- There is no correlation between the surgery codes and the AJCC TNM staging
- They need to be coded independently!

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Polypectomy... Surgery vs AJCC Staging/Grade

- Polypectomies should be coded as surgery when there are:
 - Clear margins OR
 - Microscopic margins only (in the pathology report)
- Polypectomies should only be coded as a diagnostic/staging procedure when there are macroscopic margins (seen by the naked eye)
 - E.g. the physician states in the procedure report that the entire polyp was not removed
- CAnswer Forum Post: [Polypectomy 02 vs 28 - CAnswer Forum \(facs.org\)](#)

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Polypectomy... Surgery vs AJCC Staging/Grade

AJCC TNM Staging – It's all about Intent

- If the intent of a polypectomy is diagnostic, to determine if cancer exists, then the polypectomy results should be used to assign Clinical Stage and Clinical Grade
- If the intent of a polypectomy is to remove the cancer, then the polypectomy results are used for Pathological Stage and Pathological Grade
- Margin status of the Polypectomy has no bearing on assigning Clinical/Pathologic stage, it is all about intent

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Poll Question

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Poll Question #4

- Screening colonoscopy with polypectomy
- Path: MD intramucosal adenoca, margins neg
- No imaging
- Physician says no other treatment needed

	Answer	Why?
Is the polypectomy a diagnostic/staging procedure or surgery?	Surgery	Polypectomy w/neg margins on path
What is the Clinical Grade	9	The polypectomy is the treatment in this scenario as the physician states no other treatment needed
What is the Pathological Grade	2	MD Adenocarcinoma from path
Would the polypectomy information be used for clinical staging?	No	



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Case Scenario #3 – Tumor Description

Data Item	Code	Explanation
Primary Site	C209	
Histology	8140	
Behavior	3	
Tumor Size Clinical	005	0.5cm per polypectomy path report
Tumor Size Pathological	000	
Tumor Size Summary	005	
Grade Clinical	2	The grade from the polypectomy is used to assign clinical grade in this case. The polypectomy was not definitive treatment.
Grade Pathological	2	The grade from the clinical workup can be used for the pathological grade when there is surgical resection of the primary tumor and there is no residual cancer on resection
Grade Post Therapy Clin (yc)	<blank>	No neo-adjuvant therapy
Grade Post Therapy Path (yp)	<blank>	No neo-adjuvant therapy

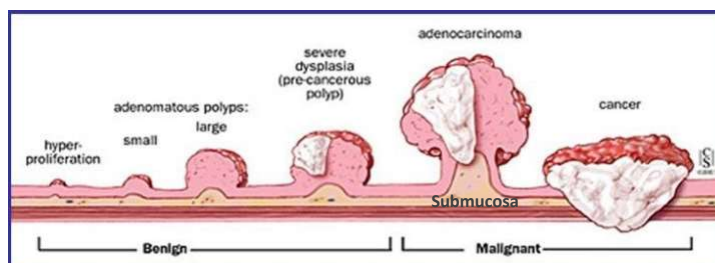


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Case Scenario #3 – EOD and Summary Stage

Data Item	Code	Explanation
EOD Primary Tumor	100	Tumor invades submucosa
EOD Regional Nodes	000	
EOD Mets	00	
Summary Stage 2018	1	



Lahiri, Sitanshu. (2015). Application of Oncolytic Viruses for Cure of Colorectal Cancer. Cancer Research Journal. Vol. 3. 76-93. 10.11648/j.crj.20150304.13.



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Case Scenario #3 – AJCC Staging

	T	N	M	Stage	Explanation
Clinical	cT1	cN0	cM0	I	The intent of the polypectomy was diagnostic, and it was not intended as definitive treatment. Therefore, information from the polypectomy can be used for clinical staging.
Pathological	pT1	pN0	cM0	I	Information from the date of diagnosis through surgical resection can be used to assign pathological TNM. Therefore, even though there was no residual tumor on resection, information from the polypectomy can be used to assign the T category.
Post-Therapy Clin					No neo-adjuvant therapy
Post-Therapy Path					No neo-adjuvant therapy



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Case Scenario #3 – SSDIs

Data Item	Code	Explanation
Lymphovascular Invasion	0	
Macroscopic Evaluation of Mesorectum	99	The primary site is rectum. But the path report does not indicate if a TME was done.
CEA PreTx Lab Value	XXXX.9	Only CEA prior to polypectomy or resection should be used. The CEA was done after polypectomy.
CEA PreTx Interpretation	9	
Tumor Deposits	00	
Perineural Invasion	9	
Circumferential Resection Margin	XX.1	No residual tumor
KRAS	9	
Microsatellite Instability	0	MMR proteins are intact
BRAF Mutational Analysis	9	
NRAS Mutational Analysis	9	



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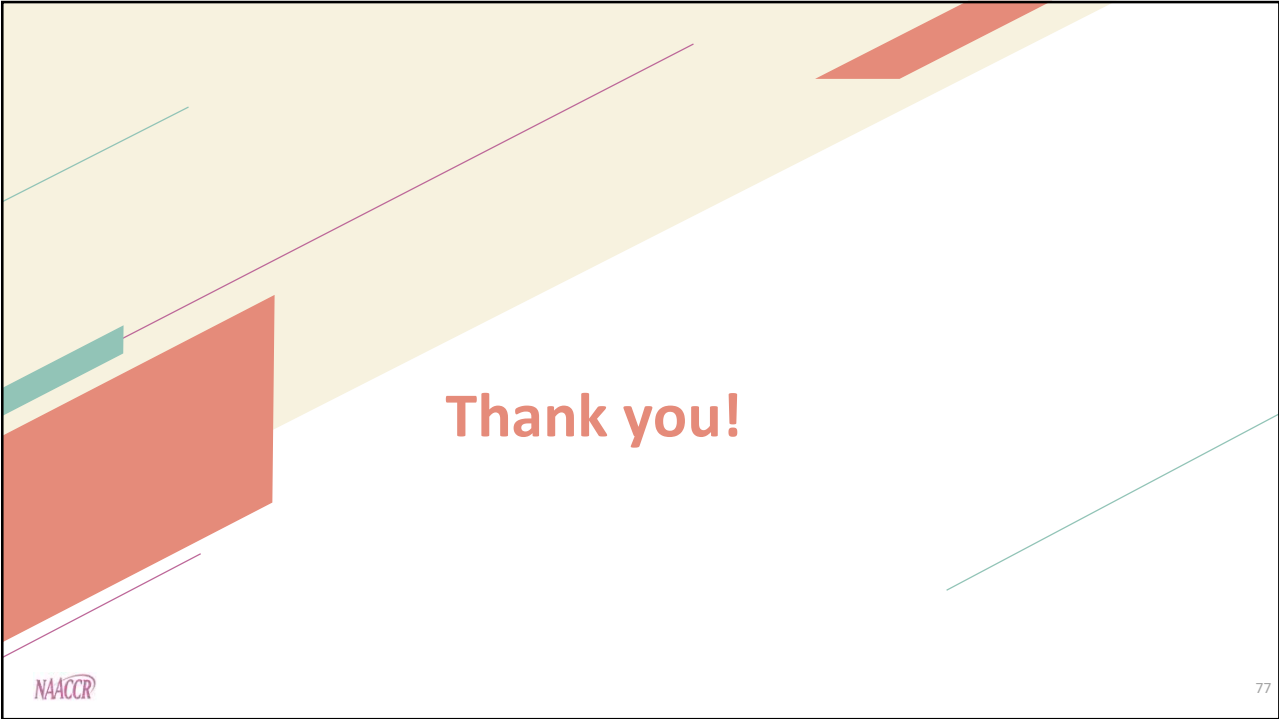
Case Scenario #3 – Treatment

Data Item	Code	Explanation
Diagnostic Staging Procedure	00	The polypectomy is considered surgery and not a diagnostic procedure. Colonoscopy procedure report states polyp was removed by hot snare, no macroscopic margins seen
Neoadjuvant Therapy	0	
Neoadjuvant Therapy -Clinical Response	0	
Neoadjuvant Therapy -Treatment Effect	0	
Date of First Surgical Procedure	03/23/22	The polypectomy was the first surgical procedure, so the date of the polypectomy is recorded
Surgical Procedure of Primary Site	30	Low Anterior Resection was the most definitive surgery
Scope of Regional Lymph Node Surgery	5	
Surgical Procedure of Other Site	0	
No Systemic Therapy		
No Radiation Therapy		

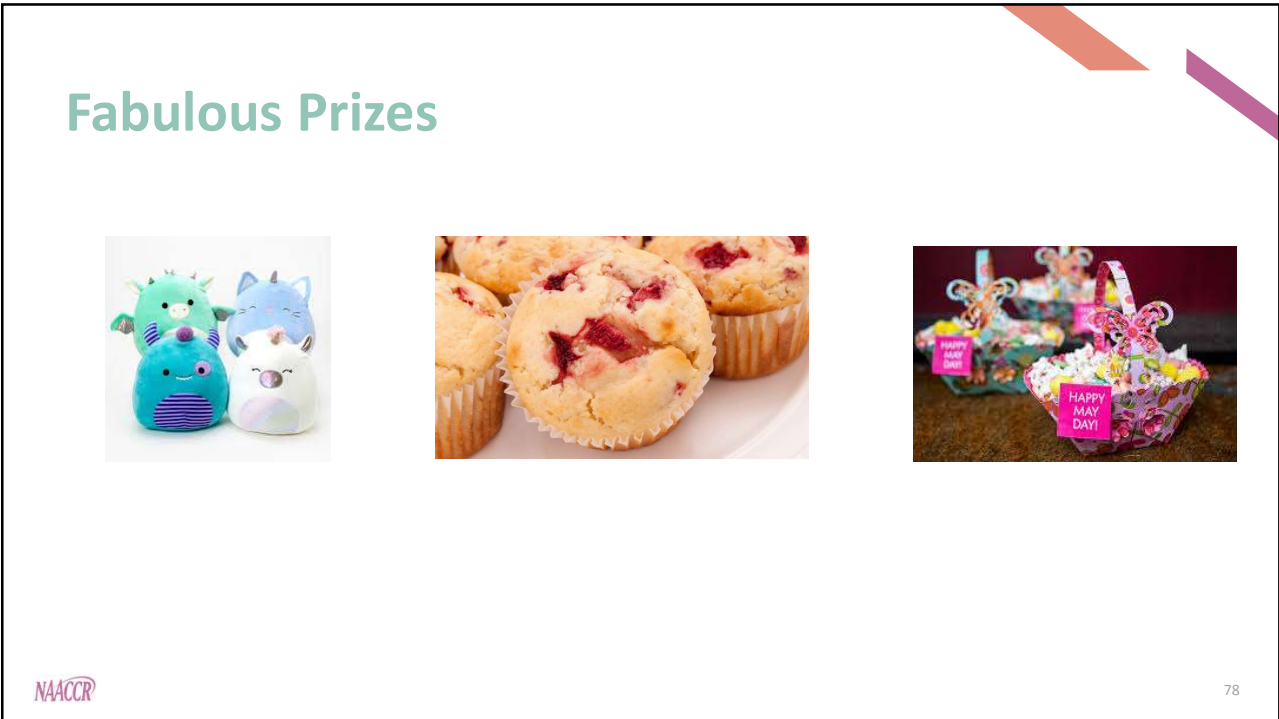


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Coming UP...

- Central Nervous System 2022
 - Jim Hofferkamp, CTR
 - 6/02/2022
- Back to The Future: What year is it and What did I miss?
 - Guest Host: Nancy Etzold, CTR and Lisa Landvogt, CTR
 - 7/07/2022



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CE Certificate Quiz/Survey

CE Phrase

Link

<https://survey.alchemer.com/s3/6563877/Colon-2022>



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Thank you!

- jhofferkamp@naaccr.org
- amartin@naaccr.org

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