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**Instructions  
For  
Question Writers**

# American Board of Colon and Rectal Surgery

## Instructions for Question Writers

Introduction .....	2
General Overview of Question Writing Process .....	2
Guidelines for Submitting Items .....	3
ABCRS Exam Terminology Recommendations .....	4
Instructions for Entering Assigned Questions on Website .....	12
Categories/Subcategories.....	13
Writing an Effective Key Concept.....	19
Writing an Effective Stem.....	20
Application of Knowledge.....	21
Writing A-Type Items .....	22
Avoiding Common Question Flaws .....	23
Writing Stems and Lead-ins.....	25
Commonly Used Lead-ins.....	26
Writing Options .....	27
Item Examples .....	29
Conclusion .....	31

## **Introduction**

The preparation of good examination questions is much more difficult than most critics think. The natural tendency of new question writers is to prepare extremely difficult questions that test small bits of obscure, rare information. Questions of this nature perform very poorly. Likewise, questions that are too easy perform poorly because they do not discriminate between test takers. This guide has been designed to help question writers prepare better questions and incorporate question theory as well as validity in question writing.

Please review this guide carefully prior to writing your question as it contains important information that should be taken into consideration during the question writing process.

## **General Overview of Question Writing Process**

Each year the board updates a robust roster of question writers and group leaders. All question writers are strongly encouraged to attend a question writing workshop prior to writing any questions. Each examination, Oral, Continuing Certification, or Written, differs slightly but the following is a general overview of the question writing process.

1. Each question writer will be assigned a specific topic for their question(s).
2. Once the questions are completed and submitted to the ABCRS question bank, they will be reviewed by the group leader. A group review is set up that includes all members of the writing group, and the exam chair if possible.
3. During the group review, the group leaders will make appropriate edits and set the status of the question to either “Approved for Committee,” “Author to Review,” or “Not Accepted.”
  - a. “Approved for Committee” – these questions are reviewed during the spring committee meeting, edited as necessary, and then the status changed to either “Assigned to Exam Chair,” “Author to Review,” “Not Accepted,” or “Move to MOC.”
  - b. “Author to Review” – these questions are sent back to the author to review, edit, and resubmit for the exam chair to review.
  - c. “Not Accepted” – these questions are unsalvageable.
4. Questions that are “Assigned to Exam Chair” for review are either accepted into the “Test Pool” or set to any one of the status’s listed above. If a question has been “Moved to MOC,” it can be considered for the Continuing Certification exam.
5. After the exam chair has completed their review, feedback is conveyed to each question writer.

## **Guidelines for Submitting Items**

1. Review this entire booklet before beginning your assignment.
2. The items you are writing and reviewing are secure materials and should not be discussed with, or shown to, others. Please keep your items in a secure place, such as a locked file cabinet or secure folder on your computer when you are not working with them.

If you have any questions, please contact:

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# **ABCRS Exam Terminology Recommendations**

To maintain consistency in terminology among all the ABCRS board exams and to clarify questions raised by both examiners and candidates, a subcommittee was formed to make recommendations. Where appropriate and available, the literature and terminology used by other organizations were reviewed. It is expected that these recommendations will need regular review as science and terminology are likely to evolve.

Terminology recommendations for diseases and procedures are below:

Cultural humility in question writing	page 7
General Style Rules	page 8
Accepted abbreviations	page 8

## **Recommendations:**

### Disease related terminology

#### 1. AIN/ HSIL/LSIL terminology

Recommend the use of LSIL and HSIL in lieu of AIN.

#### 2. MSI vs IHC

Recommend:

1. IHC status should be used over MSI status. Deficient MMR (dMMR) or proficient MMR (pMMR) status should be described.
2. For most questions, the specific deficiency, e.g., loss of MSH-6 should be used.
3. If loss of MLH1 is described, then BRAF or MLH1 hypermethylation status should also be included unless the need for testing those is being evaluated.

#### 3. Carcinoid/neuroendocrine terminology

Recommend using the terminology “Neuroendocrine Tumor (NET)” rather than carcinoid when referring to well-differentiated neuroendocrine tumors in the appendix, small bowel, colon, or rectum. When referring to a poorly differentiated tumor, the appropriate terminology is “Neuroendocrine Carcinoma (NEC).”

“Carcinoid” should only be used in the context of “carcinoid syndrome.”

#### 4. Pathology reporting

Recommend use of: cTNM should be used to describe the clinical classification of colorectal cancer. The same terminology should be used to describe the results of MRI or ultrasound staging.

- A. pTNM should be used for the final pathology results.
- B. “y” should be used as an additional prefix if pre-operative therapy of any type was used.

C. In general, TNM staging should be used in exam questions although use of Stage 1-4 may be appropriate in some circumstances.

#### 5. Biofeedback, pelvic floor muscle retraining, physical therapy-

Recommend: use pelvic floor therapy rather than distinguish among biofeedback, pelvic floor physical therapy, pelvic floor muscle training.

#### 6. Reporting of fistula openings

Recommend: For the internal opening –

- A. The location should be described with the location using anterior, posterior, left or right lateral, left or right anterolateral and left or right posterolateral if opening is at dentate line.
- B. If the internal opening is above the dentate line, the location should be described both by centimeters above the dentate line and position – anterior, posterior, right or left lateral, right or left anterolateral and right or left posterolateral.
- C. For the external opening, the location should be described by the position (anterior, posterior, right or left lateral, right or left anterolateral and right or left posterolateral) and distance (cm) from the anal verge.

#### 7. Definition of types of colectomies

Recommend:

- A. Ileocolic resection: resection of colon and distal ileum during which ileocolic artery is ligated distal to right colic artery take-off with anastomosis of the colon to the ileum.
- B. Right colectomy: resection of colon during which ileocolic, right colic and right branch of middle colic arteries are ligated and the ileum anastomosed to the transverse colon.
- C. Extended right colectomy: resection of colon during which the ileocolic, right colic and middle colic arteries are ligated, and ileum anastomosed to the transverse colon.
- D. Transverse colectomy: resection of colon during which middle colic artery (both branches) are ligated with a colo-colonic anastomosis.
- E. Left colectomy: resection of colon (descending and sigmoid colon) during which the inferior mesenteric artery is ligated, and transverse colon anastomosed to the upper rectum.
- F. Extended left colectomy: resection of colon during which the inferior mesenteric artery and the left branch of the middle colic artery are ligated, and the transverse colon anastomosed to the upper rectum.
- G. Sigmoid colectomy: resection of colon during which sigmoid branches of the inferior mesenteric artery (IMA) or IMA are ligated, and the descending colon is anastomosed to the upper rectum.
- H. Anterior resection: resection of a portion of colon and portion of upper rectum during which branches of the inferior mesenteric artery (IMA) or IMA with an anastomosis above the peritoneal reflection.

- I. Low anterior resection: resection of sigmoid colon and upper rectum during which branches of the inferior mesenteric artery (IMA), or the IMA are ligated with anastomosis to mid rectum (OR below the peritoneal reflection).
- J. Coloanal (extended low anterior resection): resection of rectum during which branches of the inferior mesenteric artery (IMA), or the IMA are ligated with anastomosis to lower rectum or anal canal.
- K. Abdominoperineal resection: removal of rectum and anus with end colostomy.
- L. Total colectomy: removal of entire colon with anastomosis of ileum to the rectum.
- M. Subtotal colectomy with ileosigmoid anastomosis: removal of most of the colon with anastomosis of the ileum to the sigmoid colon.
- N. Subtotal colectomy with ileodescending anastomosis: removal of most of the colon with anastomosis of the ileum to the descending colon.
- O. Proctectomy: removal of rectum with either IPAA, coloanal or colostomy.
- P. Total proctocolectomy: removal of the entire colon and rectum with an end ileostomy.
- Q. Hartmann's procedure: resection of diseased portion of colon with proximal end used to form colostomy and distal end closed.

The following terms should not be used:

Subtotal colectomy without a modifier, abdominal colectomy, and hemicolectomy

8. Rectal cancer treatments: For rectal cancer, surgery is considered the definitive therapy for the purposes of these definitions.

Recommendations:

- A. Neoadjuvant describes cancer therapy provided before planned surgery.

Adjuvant describes cancer therapy given post-operatively.

- B. The specific therapy should be described in the order given.

Examples: the patient received neoadjuvant short course radiation followed by chemotherapy. It would be fine to specify the chemotherapy if authors felt it was important.

The patient received neoadjuvant chemotherapy followed by induction chemotherapy with long course radiation. It would be fine to specify the chemotherapy if the author feels it is important.

- C. Recommend that total neoadjuvant therapy and TNT should not be used as candidates have found that confusing and science is evolving.

## Cultural humility in question writing

### General

The use of personal characteristics can be an important part of a vignette and include age, gender, race, ethnicity, sexual orientation, gender identity, weight among many others. However, they are not always necessary, and their use may reinforce stereotypes.

General principles include:

1. Use personal characteristics only when they are clinically relevant or aid in distractor quality.
2. If necessary, consider using lesser-known populations with disorder. E.g., Use patient with southern European heritage rather than Black for a patient with sickle cell disease.
3. Use personal characteristics when an item would be unreasonably difficult without them. Avoid when inclusion makes the item too easy.
4. Goal for exam would be approximately equal representation of men and women and reflect the population in terms of race, ethnicity, and sexual orientation.
5. Use man/woman/boy/girl. Do not use male or female.
6. Avoid use when inclusion risks negative stereotyping.
7. When using race or ethnicity, place that descriptor in social history. E.g., Patient identifies as \_\_\_\_\_ or patient with \_\_\_\_\_ heritage.
8. Use an actual age or BMI rather than terms like elderly, obese, skinny.
9. List chronic diseases in past medical history rather than as a descriptor of the patient. E.g., Past medical history includes Crohn's disease rather than woman with Crohn's disease.

### Specific terms

1. Use Black rather than Afro-American or other options.
2. Appropriate choices for people with Hispanic heritage:
  - a. Men: either Hispanic or Latino(s)
  - b. Women: Hispanic or Latina(s)
  - c. Group: Hispanics or Latinos
3. For sexual orientation, describe the preferred sexual relationship. E.g., men who have sex with men, women who have sex with women.
4. Use Asian for people of Asian heritage unless a more specific reference (e.g., Korean) is appropriate.
5. For transgender people, use born male/female, identifies as male/female.



## General Style Rules

1. If a full question is asked, the stem ends with “?”. Each option is capitalized.
2. If the stem ends with a lead-in that is the first part of a sentence, (rather than “?”) the options are lower case unless they start with a proper noun.
3. Place hyphens between age-year-old. E.g., 23-year-old man.
4. Use a hyphen between a number and distance. E.g., 5-cm polyp. Do not use a hyphen between a number and location e.g., 7 cm from anal verge.
5. Follow-up, full-thickness, on-table x-ray, J-pouch require hyphens.
6. Preoperative, postoperative, workup, abdominoperineal, fistula in ano do not require hyphens.
7. > and < must be spelled out greater than and less than.
8. For cancer staging, the stage should be lower case and the number in Roman numerals.
9. All organisms are italicized.

## Abbreviations

Term	Abbreviation	A- Abbreviation always	B-spell out first, then abbreviate if used again	C-Never abbreviate
5-hydroxyindoleacetic acid	5IHAA		x	
5-aminosalicylic acid	5-ASA	x		
Abdominal x-rays	KUB, Abd series			x
Advanced cardiac life support	ACLS	x		
Acquired immunodeficiency syndrome	AIDS	x		
Antibiotics	ABX			x
Appendiceal adenocarcinoma	AA		x	
High grade appendiceal mucinous neoplasm	HAMN		x	
Low grade appendiceal mucinous neoplasm	LAMN		x	
Arteriovenous	AV		x	
Biopsy	BX			x
Carcinoembryonic antigen	CEA	x		
Circumferential resection margin	CRM		x	
Chest x-ray	CXR			x
Chronic obstructive pulmonary disease			x	
Clostridium difficile	C diff		x	
Complete blood count	CBC	x		
Computed tomography scan	CT	X (with modifier if		

		needed)		
Cytomegalovirus	CMV		x	
Diagnosis	DX			x
Digital rectal exam	DRE	x		
Disease free survival	DFS			x
Emergency department	ED		x	
Esophagogastroduoenoscopy	EGD		x	
Electromyogram	EMG		x	
Endoscopic retrograde cholangiopancreatography	ERCP	x		
Exam under anesthesia	EUA		x	
Extramural vascular invasion	EMVI		x	
Family history	FH			x
Fluorouracil	5-FU	x		
Fluorouracil, leucovorin, oxaliplatin	FOLFOX	x		
Fluorouracil, leucovorin, irinotecan hydrochloride	FOLFIRI	x		
Granulocyte stimulating factor	GCSF		x	
Hematoxylin and eosin	H&E	x		
High grade squamous intraepithelial lesion	HSIL		x	
High resolution anoscopy	HRA		x	
History	HX			x
Human immunodeficiency virus	HIV	x		
Ileoanal pouch procedure	IPAA		x	
Immunohistochemistry	IHC		x	
Intensive Care Unit	ICU	x		
Intravenous	IV			x
Leucovorin	Folinic acid			x
Low anterior resection	LAR		x	
Low grade squamous intraepithelial lesion	LSIL		x	
Lower extremity	LE			x
Ligation of intersphincteric fistula	LIFT		x	
Magnetic resonance imaging	MRI	X with modifier if needed		
Mismatch repair	MMR		x	
Mismatch repair deficient	dMMR		x	
Mismatch repair proficient	pMMR		x	
Nasogastric	NG		x	
Neuroendocrine tumor	NET		x	
Neuroendocrine carcinoma	NEC		x	
Nonsteroidal anti- inflammatory medication	NSAIDs	x		
Operation	OP			x
Overall survival	OS			x

Perineural invasion	PN		x	
Peritoneal cancer index	PCI		x	
Positron emission tomography	PET	x		
Postoperative day	POD		x	
Patient	PT			x
Radiofrequency ablation				x
Red blood count	RBC		x	
Rule out	R/O			x
Radiation therapy	RTX			x
Total mesorectal excision	TME		x	
Total parenteral nutrition	TPN	x		
Treatment	Rx			x
Small bowel follow-through	SBFT		x	
Status post	S/P			x
White blood count	WBC	x		
<b>Genetic colorectal cancer syndromes</b>	<b>Abbreviation</b>	<b>Always abbreviate</b>	<b>Spell out first, then abbreviate if used again</b>	<b>Never abbreviate</b>
Attenuated familial adenomatous polyposis	AFAP		x	
Colonic adenomatous polyposis of unknown etiology	CPUE		x	
Cowan/PTEN hamartoma tumor syndrome	CS/PTEN		x	
Familial adenomatous polyposis	FAP		x	
Hereditary non-polyposis colon cancer	HNPCC		x	
Juvenile polyposis syndrome	JPS		x	
L-Fraumeni syndrome	LFS		x	
Lynch Syndrome	LS		x	
MUTYH-associated polyposis	MAP		x	
Peutz-Jeghers syndrome	PJS		x	
Serrated polyposis syndrome	SPS		x	

<b>Vital signs</b>	<b>Abbreviation</b>	<b>In sentence</b>	<b>In list of vital signs</b>	
Temperature	T.	Celsius/Fahrenheit with °	T. followed by number only	
Blood pressure	BP	BP	BP followed by numbers only	

Heart rate	HR	Heart rate	HR with number only	
Respiratory rate	RR	Respiratory rate	RR with number only	

## Instructions for Entering Assigned Questions on Website

1. Go to [www.abcrs.org](http://www.abcrs.org).
2. Click on **“ABCRS Login.”**
3. Enter your Username and Password.
4. Click on the **“Write/Edit/View Written Exam Questions”** link in the upper left corner.
5. You will see the question template and the topics that have been assigned to you. All new questions numbers are designated **“Temp.”**
6. Click on the question number to create your question.
  - Select a **“Category”** from the drop-down list.
  - Select a **“Pillar”** from the drop-down list.
  - Enter the **“Key Concept”** in the **appropriate** box.
  - Enter the stem in the **“Question”** box.
  - Enter at least two references in the **“References”** box.
  - Enter the correct answers and three distractors in the **“Answer”** boxes.
  - Click on the radio button next to the correct answer to highlight.
7. If images are included, click **“Browse”** to add the image.
8. If you have not completed your question and wish to make additional revisions later, click on **“Save Only”**. This will allow you to re-enter the question.
9. To return to the **“Manage Questions”** page, click **“Close Window”**
10. After you entered and reviewed all the information, click **“Submit for Review.”**  
**Please note: Once you have officially submitted your questions, you will no longer be able to edit them.**
11. To view the number of assignments you received/submitted, click on the **“My Assignments”** button in the upper left-hand corner of the **“Manage Assignments”** window.

**\*\*Important\*\*** Please remember to update your information listed on your **“Profile Tab”**. This information must be current in order for us to communicate with you in a timely manner.

## Categories/SubCategories

One of the first things you are asked to do when you create a question in the database is to select a “category” that is assigned to that question. The category delineates the educational pillar the subject is covered under as well as potential subcategories as outlined below. Normally you will receive an assignment to write questions for a specific category/subcategory but if you are writing a question outside of your assignment you will need to be familiar with this classification. It is available in a drop-down menu as you begin the initiation of the question writing process.

### 1. Perioperative considerations and colonoscopy

- a. Prophylaxis (cardiac, VTE, SSI)
- b. Bowel Prep
- c. Pharmacology, fluids and electrolytes
  - i. Antibiotics
  - ii. Local anesthetics
  - iii. Conscious sedation
  - iv. Pain control (epidural, PCA, NSAIDS)
  - v. Enhanced Recovery Pathways and principles
  - vi. Ileus prevention
  - vii. Electrolyte imbalances
- d. Intraoperative complications
  - i. Hypotension
  - ii. Ventilation issues
  - iii. Hypercarbia and laparoscopy
  - iv. Bleeding
- e. Colonoscopy
  - i. Bowel prep
  - ii. Screening
  - iii. Tattooing/marking
  - iv. Polypectomy indications
  - v. Pedunculated polyps/Haggitt’s levels
  - vi. Sessile polyps/lift techniques
  - vii. Complications
    1. Perforation
    2. Bleeding

### 2. Anorectal

- a. Hemorrhoids
  - i. Etiology/pathogenesis
  - ii. Non-operative management (banding, infrared, sclerotherapy)
  - iii. Operative treatment and complications
  - iv. Pregnancy
  - v. Immunocompromised patients (leukemia, cirrhosis)
  - vi. Complications
    1. Pelvic Sepsis
    2. Bleeding
- b. Anal Fissure
  - i. Etiology/pathogenesis
  - ii. Nonoperative treatment
  - iii. Operative strategies

- iv. Concomitant fissures/suppuration
- v. Complications
- c. Abscess/fistula
  - i. Etiology/pathogenesis
  - ii. Assessment in office/OR
  - iii. Drainage strategies—office/OR
  - iv. Fistula location/assessment
  - v. Rectovaginal fistula
  - vi. Fournier's gangrene
  - vii. Hidradenitis
- d. Pilonidal Disease
- e. Pruritis ani and dermatoses (idiopathic, lichen planus sclerosis)
  - i. Etiology
  - ii. Diagnosis
  - iii. Medical treatment
- f. Sexually transmitted diseases
  - i. Bacterial (chlamydia, syphilis, gonorrhea)
  - ii. Viral (HPV, LGV, HIV, HSV)
- g. Anorectal trauma
  - i. Foreign body
  - ii. Childbirth injury/perineal laceration (acute)

### **3. Pelvic Floor, Fecal Incontinence, Lower GI motility/Constipation**

- a. Fecal incontinence
  - i. Evaluation (assessment of severity)
  - ii. Non-operative treatment (biofeedback)
  - iii. Operative therapy (overlapping sphincteroplasty, sacral nerve stimulation)
- b. Rectal prolapse
  - i. Etiology/pathogenesis
  - ii. Diagnosis and workup of problem
  - iii. Operative treatment
    - 1. Transanal approaches
    - 2. Transabdominal approaches
  - iv. Complications
  - v. Recurrence
- c. Solitary Rectal Ulcer
  - i. Diagnosis
  - ii. Treatment
  - iii. Complications
- d. Obstructed defecation
  - i. Rectocele
    - 1. Diagnosis and Evaluation
    - 2. Treatment (operative and non-operative)
  - ii. Paradoxical puborectalis syndrome and levator ani syndrome
    - 1. Diagnosis and evaluation
    - 2. Treatment
- e. Constipation
  - i. Functional constipation
  - ii. Slow transit constipation
    - 1. Evaluation and diagnosis

## 2. Treatment/indication for surgery

### 4. Benign Disease and IBD

- a. Crohn's Disease
  - i. Evaluation and Diagnosis
    - 1. Pathology
  - ii. Medical management
  - iii. Nutrition
  - iv. Anorectal Crohn's
    - 1. Abscess
    - 2. Fistula
    - 3. Fissure
    - 4. Complications of surgery
  - v. Small Bowel and Crohn's
    - 1. Duodenal Crohn's
    - 2. Surgery
    - 3. Short gut
    - 4. Complications of surgery
  - vi. Colonic Crohn's
    - 1. Surgery
    - 2. Complications of surgery
  - vii. Extraintestinal manifestations
- b. Ulcerative colitis
  - i. Evaluation and diagnosis
    - 1. Pathology
    - 2. Surveillance
    - 3. Indeterminate colitis
    - 4. Infectious complications
  - ii. Medical management
  - iii. Nutrition
  - iv. Cancer risk
  - v. Surgery
    - 1. Indications
    - 2. IPAA
      - a. Contraindications
      - b. Complications
      - c. Pouchitis
  - vi. Extraintestinal manifestations
- c. Infectious Colitis
  - i. C. difficile
    - 1. Medical management
    - 2. Surgical indications
  - ii. Other infectious colitidies
    - 1. CMV
    - 2. Tuberculosis
    - 3. Campylobacter
    - 4. Yersinia
    - 5. Salmonella
- d. Radiation Enteritis
  - 1. Radiation proctitis
- e. Neutropenic enteritis



- 1. Typhlitis
- f. Diversion colitis
- g. Microscopic colitis
  - 1. Lymphocytic
  - 2. Collagenous
- h. Ischemic colitis
- i. Diverticular Disease
  - i. Diverticular disease
    - 1. Etiology and pathogenesis
    - 2. Epidemiology
  - ii. Diverticulitis
    - 1. Uncomplicated
      - a. Medical management
      - b. Indications for surgery
    - 2. Complicated
      - a. Medical management
      - b. Surgical management
  - iii. Perforation
  - iv. Abscess
  - v. Fistula
  - vi. Chronic persistent
- j. Appendicitis
  - i. Acute
  - ii. Chronic
  - iii. Crohn's
- k. Bowel Obstruction
  - i. Small bowel obstruction
  - ii. Large bowel obstruction
    - 1. Evaluation and diagnosis
    - 2. Etiology
      - a. Cancer
      - b. Diverticulitis
      - c. Stercoral obstruction
      - d. Endometriosis
      - e. Volvulus
        - i. Cecal
        - ii. Sigmoid
      - f. Pseudo-obstruction (Ogilvie's)
    - 3. Colonic stent
    - 4. Surgery
- l. Endometriosis
  - i. Obstruction
  - ii. Bleeding
- m. Stomas
  - i. Ileostomy
    - 1. High output
    - 2. Obstructed
  - ii. Colostomy
    - 1. Retraction
    - 2. Ischemia
- n. Lower GI Bleed

- i. Evaluation and diagnosis
  - 1. Radionuclide scan
  - 2. CT angiogram
  - 3. Angiogram
  - 4. Colonoscopy
- ii. Small bowel
  - 1. Treatment
- iii. Colon
  - 1. Treatment

## 5. Neoplasia

- a. Colon cancer
  - i. Incidence
  - ii. Etiology
  - iii. Epidemiology
  - iv. Diagnosis
  - v. Staging
    - 1. Pathology
      - a. Histopathologic markers
      - b. Mismatch repair testing
      - c. K-ras
      - d. BRAF
    - 2. Imaging
  - vi. Surgical therapy
    - 1. Complications
    - 2. Locally advanced
    - 3. Recurrent
      - a. Anastomotic recurrence
      - b. Retroperitoneal recurrence
    - 4. Chemotherapy
- b. Rectal Cancer
  - i. Incidence
  - ii. Etiology
  - iii. Epidemiology
  - iv. Diagnosis
  - v. Staging
    - 1. Pathology
    - 2. Imaging
  - vi. Early stage rectal cancer
    - 1. Surgery
      - a. Local excision
        - i. Neoadjuvant chemotherapy and radiation
      - b. Radical resection
    - 2. Complications
    - 3. Local recurrence
  - vii. Advanced rectal cancer
    - 1. Neoadjuvant chemotherapy and radiation
    - 2. Surgery
      - a. Low anterior resection
        - i. Complications
        - ii. Function

- b. Abdominoperineal resection
        - i. Complications
        - ii. Tissue Flap
      - c. Local invasion
      - d. Recurrent
    - viii. Metastatic colorectal cancer
      - 1. Liver metastases
      - 2. Multivisceral metastases
      - 3. Palliation
  - c. Hereditary Colorectal Cancer
    - i. Lynch Syndrome/HNPCC
      - 1. Diagnosis
      - 2. Incidence
      - 3. Genetics
      - 4. Surgery
      - 5. Extra-gastrointestinal manifestations
    - ii. Familial Polyposis
      - 1. Diagnosis
      - 2. Incidence
      - 3. Genetics
      - 4. Surgery
      - 5. Extra-gastrointestinal manifestations
        - a. Desmoids
    - iii. MYH
    - iv. Peutz-Jaegers
  - d. Anal Neoplasms
    - i. AIN
    - ii. Paget's Disease of the Anus
    - iii. Squamous cell carcinoma
      - 1. Chemotherapy and radiation
      - 2. Surgery
      - 3. Recurrence
    - iv. Melanoma
  - e. Desmoids
  - f. Presacral tumors
    - i. Benign
    - ii. Malignant
    - iii. Complications
  - g. Small bowel neoplasms
    - i. Carcinoid
    - ii. Gastrointestinal stromal tumor
    - iii. Lymphoma
    - iv. Appendiceal

## 6. Miscellaneous

- a. Statistics
- b. Quality
- c. Ethics
- d. Patient safety

## Writing an Effective Key Concept

The anchor to writing an acceptable question is having an effective key concept. The key concept is a statement of fact upon which the stem and distractors are based. The key concept should have a subject (i.e. the clinical problem) and action (i.e. the treatment). Key concepts are those that experts in the field agree should be common knowledge and critical for practicing, board certified physicians. The key concept should be specific, concise, and definitive.

Common Difficulties with the Key Concept:

- a) Incomplete subject/action
  - a. Treatment of anal fissure (unacceptable) → the treatment of a chronic anal fissure is lateral internal sphincterotomy (acceptable).
  - b. Adjuvant chemotherapy for colon cancer → Resected Stage III colon cancer is treated with adjuvant chemotherapy.
- b) Verbose/Esoteric
  - a. The treatment of colon cancer in patients with no metastatic disease based on preoperative CT scan, and elevated preoperative CEA and a first degree relative is surgery → The treatment of resectable nonmetastatic colon cancer is segmental colectomy.
- c) Controversial
  - a. The treatment of FAP is prophylactic two stage restorative proctocolectomy.

Examples of acceptable Key Concepts:

- The treatment of prolapsed, incarcerated gangrenous hemorrhoids is excision.
- Stapled hemorrhoidopexy is associated with a higher rate of early recurrence compared to hemorrhoidectomy at one year.
- A minimum of 12 lymph nodes should be resected/examined for colon cancer for acceptably staging accuracy.
- Optimal resection of a colon cancer includes resection of a segment of colon with a 5 cm margin and en bloc mesorectal excision of the complete nodal basin with high ligation.
- Injury to nervi erigentes at level of middle hemorrhoidal artery will lead to erectile dysfunction.
- Gaining length for a pouch to reach may involve mobilization to the third portion of the duodenum, serial “scoring” of the mesentery, and selective division of the mesenteric arcades, along with change in pouch configuration from J to S-pouch.

## Writing an Effective Stem

As a question writer for the American Board of Colon and Rectal Surgery, your goal is to provide the highest-quality test material possible to ensure that all examinees who become certified are knowledgeable in our field, not just test-wise. Well-written and appropriately edited examination material is critical for all examinees to demonstrate the depth and breadth of their knowledge.

Writing high-quality, effective test questions is difficult. In fact, many test questions we have been exposed to are NOT well written. This can include questions that appear on elementary school tests, as well as on recent continuing medical education examinations. When basic question writing principles are not used, test questions may be confusing or otherwise unclear, verbose, esoteric, or not as effective as they could be. These instructions can help you avoid these problems when writing questions for The American Board of Colon and Rectal Surgery.

This Question Writing Guide provides instruction in effective question writing. It gives samples of questions that are well constructed as well as those that are not. ***Because the Examination Committee does not accept most flawed questions, the time you spend writing them is wasted.*** Therefore, the extra effort you put toward well-constructed questions not only expedites the review process, but also improves the quality of the examination and helps ensure the qualifications of the candidates who pass.

# Application of Knowledge

## What is application of knowledge?

Test questions can be written in two basic ways. By requiring:

**(1) Mere recall of facts (1<sup>st</sup> order)**

**(2) Application of knowledge to answer the question (2<sup>nd</sup> order)**

A question requiring application of knowledge (2<sup>nd</sup> order) provides a specific scenario and asks the examinees to apply their knowledge in interpreting this information and recalling appropriate facts to determine the correct answer. In contrast, recall questions (1<sup>st</sup> order) simply require knowledge of isolated facts to determine the correct answer. **While a written exam will certainly include questions that require recall of facts, it also requires application of knowledge (2<sup>nd</sup> order questions).**

## How do you write a 2<sup>nd</sup> order question?

One of the most common approaches to writing this type of question involves composing a clinical vignette. The vignette should provide some or all of the following information: initial symptoms, underlying conditions, other appropriate clinical findings, and appropriate laboratory studies. The lead-in for this type of question would ask a question pertaining to diagnosis, management, related findings, or other information. This type of question requires an examinee to apply his or her knowledge, as they would in a clinical situation. *The largest flaw with a second order question is including information that is not required to answer the question. Information should be included if it is important to answer the question or provides clarifying information required to answer the question.*

Questions that test application of knowledge should be structured to ask for a specific piece of information and are driven by the key concept. The STEM can be structured to ask for:

- ▶ Associated clinical findings
- ▶ Optimal treatment
- ▶ Implications of a given clinical decision
- ▶ Complications of a disease process or treatment

# Writing A-Type Items

An A-type question utilizes the multiple-choice format, which involves a single best answer. Four answer choices should be provided (one correct answer and three distractors), with there being **only one best answer as agreed upon amongst experts in the field**. While the distractors may be partially true, the single best answer must be the most appropriate response. Options should be lettered **A, B, C, and D**.

## **Basic Rules**

- 1. The key concept drives the STEM and options.** Key concepts should involve situations that would be encountered in a typical practice. Avoid trivial, tricky, or unnecessarily complex key concepts.
- 2. Focus the STEM on testing application of knowledge, not an isolated fact.** Using a clinical vignette provides a good background for testing application of knowledge.
- 3. Write a STEM that is focused and poses a clear question.** The examinee should be able to formulate an answer to the question without looking at the options. If the examinee must read every option to gather additional information before being able to answer the question, the item is not well focused and should be rewritten.
- 4. Write options that are homogeneous, with all options falling into the same category as the correct answer** (e.g., all diagnoses, treatments, associated conditions, etc.). All distractors should be viable; they should all be grammatically consistent, logically compatible, and approximately the same length. If the answers involve therapeutic options, generally they are listed from least to most invasive.
- 5. Write the stem to contain all the information needed to answer the question.** Options should be relatively short and should not contain additional background information, only the completion of the statement or question posed in the stem. The examinees should be able to formulate an answer the question without looking at the options.
- 6. List options in logical or alphabetical order.** For example, questions asking for procedures should start with least invasive and work down to most invasive procedures. Diagnoses can be listed alphabetically.

**Do NOT write any items asking “Which of the following is true?” or “Each of the following is true EXCEPT”** these items are almost always unfocused with options that are not homogeneous and will not be accepted by the board.

If your questions follow all these rules, they most likely are well phrased and focused on an appropriate subject.

## ***Avoiding Common Question Flaws***

A number of question flaws can benefit test-wise examinees. People who are not candidates for this examination should not be able to answer the questions correctly based on their construction alone. **Typical item flaws include:**

- √ ***Absolute terms*** in options, such as *always, never, or only*.
- √ ***Subjective and nonspecific terms*** such as *may, might, can, could, common(ly), frequent(ly), usually, sometimes, and rarely*; these terms are too vague to be used for questions with one best answer and have different meanings to different people. **Adding the term “most” to frequent or likely (e.g., The most likely diagnosis...) helps focus and clarify the item.**
- √ ***Logical clues*** or giving a subset of options that allows the examinee to rule out the distractors.
- √ ***Repetition of words or phrases*** in the stem and options (this refers to the test taking jargon as “clanging”).
- √ ***Making the correct option the longest one.*** The most detailed option is usually the correct answer.
- √ ***Grammatical clues.*** An option that does not grammatically fit the stem is usually not the correct answer.
- √ ***Convergence.*** The correct answer includes elements that are common to the distractors.
- √ ***Unnecessary difficulty.*** Tricky or complicated stems; long, complicated options – remember options should be of the same length.
- √ ***Negative terms*** in stem or options, which require reverse thinking, should not be used. Use of negative terms in options, especially in association with a negatively phrased question (Each of the following EXCEPT) can be confusing and tricky. In many cases, options with negative terms are not homogeneous.

Use only one term or concept per option. Using “and” or “or” in the stem or some options is either asking more than one question or asking for more than one answer. In options, these terms often clue one option as correct or incorrect. If used in the stem, the question is testing more than one concept.



Avoid instructional information. The examinee should have the background knowledge necessary to answer the item; if the instruction is needed, the item may not be appropriate for the examination.

Do not use multiple true/false items, such as “Each of the following is true EXCEPT” items. In addition to the problems associated with negative items, asking multiple true-false statements is not the best way to test the knowledge of examinees. In addition, the negative format requires the candidate to use reverse thinking twice, which makes an item unnecessarily tricky. Options for these items are almost always not focused and not parallel.

Avoid using statistical information or comparisons in options, as neither tests the application of knowledge and both usually results in options not being homogeneous.

## **Writing Stems and Lead-ins**

When composing questions using clinical vignettes, use realistic scenarios involving situations likely to develop in a typical practice. The stem should identify a patient and any pertinent information needed to answer the question. This information may include some or all of the following:

- √ Patient age
- √ Patient gender (use man, woman, boy, girl, infant) – and only use gender if it is pertinent to formulating the answer
- √ Presenting symptom(s) or underlying condition and duration
- √ Findings on physical examination
- √ Findings on laboratory evaluation
- √ Results of other diagnostic testing
- √ Issues arising during surgery

**The stem should not include unnecessary information**, however, a question may be more readable if it includes patient information, such as “A 45-year-old patient” even if age and gender are not important to the question.

The stem should not include information about culture, race, socioeconomics, or sexual preferences unless this information is *absolutely necessary* to answer the question.

When composing questions that do not contain vignettes, keep all information relevant. Some items may be short and not contain a vignette but still test application of knowledge. Some vignettes may be quite brief, while others may be more detailed. Occasionally, recall of information is important to test, as in anatomy questions.

The language used in the stem and options should be clear and concise. Avoid jargon and inflated diction. Test items should be written with the purpose of effectively measuring the examinees understanding and ability to apply principles.

If you include an image to be assessed as part of your question, there is an opportunity to upload it as an attachment to your question in the database. It is imperative that you submit images of high resolution. One of the most frequent criticisms by examinees is that the image was unclear. The best way to avoid this is to submit images of high quality ensuring that all identifying patient information that is HIPPA protected is removed. If there is concern with the image during the review process, the author will be contacted.

## ***Commonly used lead-ins are listed below:***

### Basic Science: Mechanisms

- Which of the following is the most likely mechanism of action?
- Which of the following is the most likely explanation for these findings?
- Which of the following is the most likely additional finding?
- Which of the following is the most likely site of the lesion?
- Which structure is most likely to be involved?
- Laboratory evaluation is most likely to show
- This agent acts at the receptor for

### Diagnosis

- Which of the following is the most likely diagnosis?
- These findings are most consistent with
- Which of the following is the most likely associated condition?
- Which of the following is the most likely site of the lesion?
- This patient is at increased risk for (development of)

### Management/Therapy

- Which of the following is the most appropriate next step?
- Which of the following is the treatment of choice?
- Which of the following is the most likely outcome of *[specify treatment]*?
- Which of the following is the most likely result of interaction between these drugs?
- Which of the following is the most appropriate treatment? *[e.g., pharmacotherapy]*
- Which of the following is the most appropriate management? *[e.g., management other than pharmacotherapy or a mix of pharmacologic, surgical, or other types of therapy or observation]*

## Writing Options

Options consist of the correct answer and three distractors, or incorrect answers. Distractors should be plausible, with none standing out as obviously incorrect. In a well-constructed question, each distractor will be chosen by at least a few examinees. Potential sources of distractors include faulty reasoning and common misconceptions and errors. Distractors should not contain information that could give clues to the correct answer.

Well-written distractors should be:

- ✓ **Homogeneous** with the correct answer; all should be diagnoses, treatment options, laboratory studies or values, etc.
- ✓ **Plausible** to an uninformed examinee.
- ✓ **Incorrect** or significantly inferior to the correct answer.
- ✓ **Similar** to the correct answer in length and construction.
  - ✓ *Ordered* in a logical way, e.g. from least to most invasive, alphabetically.
  - ✓ *Grammatically consistent with the stem.*

Well-written distractors should NOT:

- ✓ Give a clue to the correct answer.
- ✓ Use ambiguous or non-specific terms such as never, frequently, almost, etc...
- ✓ Use “all of the above” or “none of the above.”
- ✓ Be mutually exclusive.

Distractors affect the difficulty of the item. For example, review the following option sets that accompany the same question:

1. Which of the following companies manufactures sildenafil citrate (Viagra)?
  - A. General Mills
  - B. General Motors
  - C. IBM
  - D. Pfizer
  
2. Which of the following companies manufactures sildenafil citrate (Viagra)?
  - A. Eli-Lilly
  - B. Glaxo-Wellcome
  - C. Novartis
  - D. Pfizer

In the first example, the options are quite different, with only one pharmaceutical company listed. Someone who knows very little about this subject could easily answer this correctly.

In the second example, the question becomes more difficult because of the homogeneity of the options. Someone with limited knowledge would find all the options to be plausible.

## Item Examples

### Well-Written A-Type Items

Examples of well-written A-type items are given below:

1. Levatoroplasty is indicated for management of anal incontinence associated with
  - A. imperforate anus
  - B. rectal procidentia
  - C. radiation therapy
  - D. solitary rectal ulcer

Answer: B

*This item involves recalling information, but it is well constructed and is an appropriate way to ask for the condition that is effectively managed by this procedure.*

2. A 30-year-old woman has an anovaginal fistula with incontinence of liquid stool following an injury during childbirth. Endoanal ultrasonography indicates a sphincter defect. Which of the following is the most appropriate management?
  - A. Endorectal advancement flap repair
  - B. Overlapping sphincteroplasty
  - C. Biofeedback followed by endorectal advancement flap repair
  - D. Inversion of the fistula with layered closure transvaginally

Answer: B

*This item follows suggested item writing guidelines. An improvement would include putting options in either alphabetical or logical (least to most invasive) order.*

3. A 31-year-old man has poorly localized pain at the base of the spine with radiation to the buttocks. Digital rectal examination reveals a palpable presacral mass. Radiographs show scimitar sacral deformity. Which of the following is the most likely diagnosis?
  - A. Anterior sacral meningocele
  - B. Chordoma
  - C. Neurofibroma
  - D. Osteogenic sarcoma

Answer: A

*This item sample is ideal: The stem contains a vignette and a focused lead-in; the options are homogeneous and similar in length.*

***The above examples all pass “the cover test”: the question can be answered without looking at the answers.***

## Flawed A-Type Items

Examples of flawed A-type items with suggested revisions are given below:

1. Each of the following statements about pudendal nerve injury during childbirth is true EXCEPT
  - A. it may be associated with a third-degree tear during childbirth
  - B. it is more common in multiparous women than primigravid women
  - C. forceps delivery decreases the likelihood of injury
  - D. epidural anesthesia, superficial episiotomy, and caesarian section do not cause injury

Answer: C

*While this item appears to test knowledge of several different points, it has a number of flaws. The stem is not focused; the examinee cannot answer the question without looking at the options. The stem asks multiple true-false questions. A negative term is used in the stem. There is no indication of what the question seeks to test B risk factors, associated findings, sequelae, comparisons, etc. Options are not homogeneous. Use of nonspecific terms in options (may, almost, more common) makes the option ambiguous and subject to individual interpretation. Comparisons (than) should not be used in options. Negative terms should not be used in options and are particularly confusing when combined with a negatively phrased question. D is not parallel to others as multiple options are given. To revise, this item should focus on one aspect, such as associated findings or causes of injury.*

### Suggested Revision:

The most appropriate *management/procedure for repair* of pudendal nerve injury is

- *Revise options to be viable managements*

**Or,**

Pudendal nerve injury primarily manifests as

- *Revise options to be presenting symptoms*

### **Or, for application of knowledge:**

A \_\_\_-year-old woman has \_\_\_\_\_ [symptoms of pudendal nerve injury]. Which of the following is the most likely associated feature/condition? [Or as for the most likely diagnosis, unless this would be too easy with the symptoms listed]

- *Revise options to fit new stem (associated features, conditions, or symptoms; or, viable diagnoses)*

2. When evaluating anorectal function after low anterior resection

- A. resting and squeeze pressures are markedly lower in patients with tenesmus and soiling
- B. the rectoanal inhibitory reflex may be preserved
- C. radiation therapy significantly affects resting and squeeze pressures
- D. the capacity and compliance of the neorectum are not affected by radiation therapy

Answer: B

*Once again, this item appears to test several points of knowledge, but by doing so it becomes unfocused; items should test only one concept. The stem is not focused; the examinee cannot answer the question without looking at the options. Options are not homogeneous and are longer and more detailed than the stem. Options contain nonspecific terms, comparisons, multiple answers within the same option, and negative terms. To revise, this item should focus on one aspect, such as most likely sequela.*

Suggested Revision:

Which of the following is the most likely adverse finding following low anterior resection of the rectum?

- *Revise options to fit stem*

***Or use a patient vignette, e.g.,***

A \_\_\_-year-old patient is undergoing low anterior resection of the rectum. Which of the following is the most likely postoperative complication [*or, finding*]?

- *Revise options to fit stem*

## **Conclusion**

The American Board of Colon and Rectal Surgery thanks you for taking the time to participate in this very important process. The ABCRS also strongly suggests that you participate in question writing workshops that normally take place during the annual ASCRS meeting. The ABCRS thanks you for your work on writing examination items.