Abdominal Assessment

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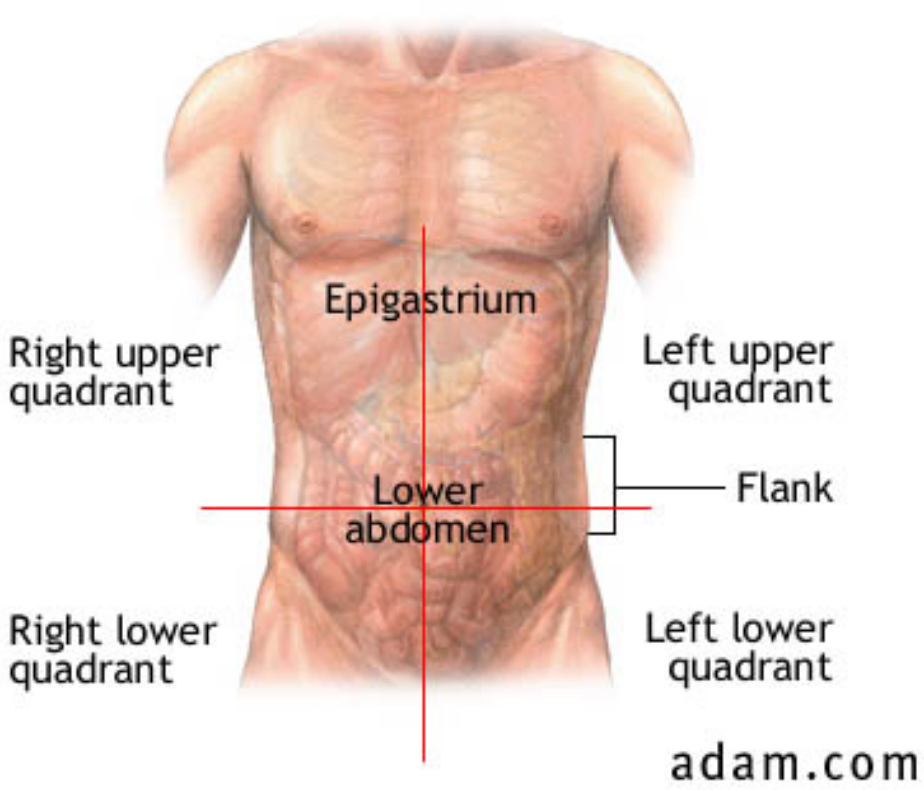
Objectives:

1. Outline the steps in performing an abdominal examination.
2. Describe the role of auscultation in assessing abdominal function.
3. Explain ileus and bowel obstruction including similarities and differences

Performing an abdominal exam is a critical function is determining the safety of utilizing the gastrointestinal tract and whether disease pathology is present. Performing an abdominal assessment and examination can provide the RD with objective information for use in a number of areas including feeding tube placement and enteral feeding readiness and tolerance.

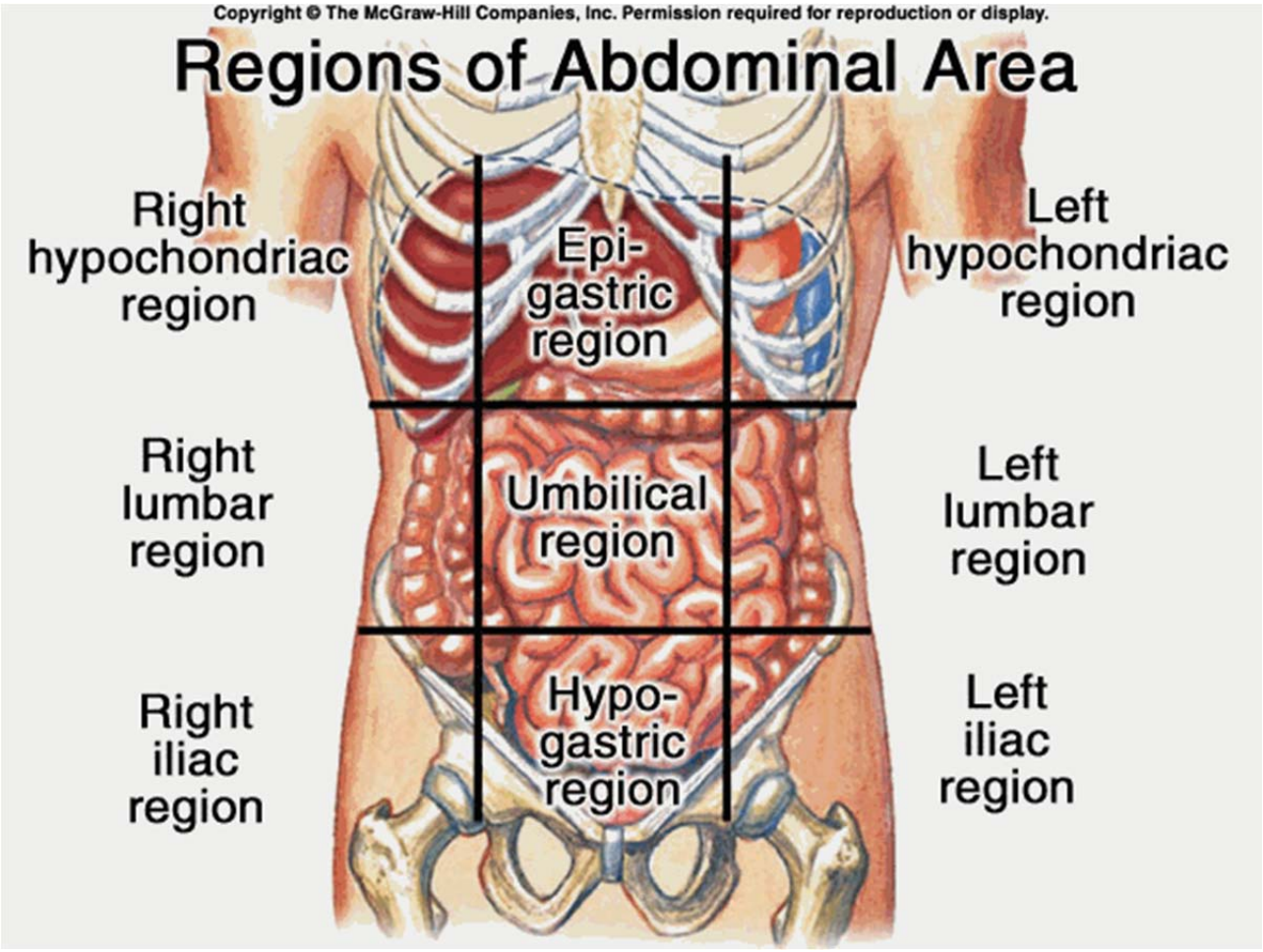
I. Abdominal Region Terminology
   a. Quadrants
      i. RUQ – right upper quadrant
      ii. LUQ – left upper quadrant
      iii. RLQ – right lower quadrant
      iv. LLQ – left lower quadrant



Quadrant	Organs
Right Upper	• Right liver lobe • Gallbladder • Pylorus • First three parts of the duodenum • Pancreas head • Right kidney • Right hepatic flexure • Part of ascending colon • Right half of transverse colon
Left Upper	• Left liver lobe • Spleen • Majority of stomach • Jejunum and proximal ileum • Body and tail of pancreas • Left kidney • Left splenic flexure • Portion of descending colon • Left half of transverse colon
Right Lower	• Cecum • Appendix • Majority of ileum • Inferior portion of ascending colon • Right ovary

	• Right uterine tube • Right ureter
Left Lower	• Sigmoid colon • Inferior portion of descending colon • llft ovary • Left uterine tube • Left ureter

b. Nine Regions
   i. epigastric, umbilical and hypogastric
   ii. right hypochondriac, right lumbar and right iliac
   iii. left hypochondriac, left lumbar and left iliac



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Abdominal Region	Organ
Right hypochondriac	Liver Gallbladder Small intestine

	Ascending colon Transverse colon Right kidney
Epigastric	Esophagus Stomach Liver Pancreas Small intestine Transverse colon Right and left kidneys and ureters Spleen
Left hypochondriac	Stomach Liver (tip) Pancreas (tail) Small intestine Transverse colon Descending colon Left kidney Spleen
Right lumbar	Liver (tip) Gallbladder Small intestine Ascending colon Right kidney
Umbilical	Stomach Pancreas Small intestine Transverse colon Right and left kidneys and ureters
Left lumbar	Small intestine Descending colon left kidney tip
Right iliac	Small intestine Appendix Cecum Ascending colon Right ovary and fallopian tube
Hypogastric	Small intestine Sigmoid colon Rectum uterus Right and left ovaries and fallopian tubes Right and left ureters Bladder Prostate
Left iliac	Small intestine

	Descending colon Sigmoid colon Right and left ovaries Left fallopian tube

II. Components of the Abdominal Exam

a. Inspection
   i. Inspection is visual review of the abdomen. It involves assessing both the symmetry and contour of the abdomen. Contour describes the overall shape of the abdomen while symmetry is used to assess specific areas of imbalance.
   ii. Inspection also includes:
      1. checking for bruises, discolorations or straie
      2. assessing the umbilicus – is it inflamed, clean?
      3. assessing skin turgor - is the patient dehydrated?
      4. looking for movement associated with peristalsis

b. Auscultation
   i. Primary purpose is to listen for bowel sounds. Also is used to assess vascular sounds
   ii. Procedure:
      1. Perform prior to palpation and percussion.
      2. Use the diaphragm of the stethoscope.
      3. Place lightly against the skin.
      4. Begin in the RLQ at the ileocecal valve area
   iii. What are bowel sounds?
   iv. Bowel sounds originate from the movement of air and fluid through the small intestine. Bowel sounds are high pitched, gurgling or scratching sounds that occur approximately every 5 to 15 seconds. They can be heard in all four quadrants.
   v. Hyperactive bowel sounds are loud, high-pitched, rushing and tinkling sounds (borborygmi). Absent bowel sounds are defined as lack sounds after 5 minutes of auscultation.
   vi. Bowel Obstruction
      1. Symptoms: pain, nausea, vomiting, hyperactive peristalsis, constipation, occasional diarrhea.

c. Percussion
   i. Serves two purposes:
      1. To detect gaseous distention and/or fluid within the abdomen.
      2. To assess the size and position of solid organs within the abdomen.

ii. Tympany and dullness are sounds heard through percussion.
    1. Tympany represents air and fluid and usually predominates due to the presence of air in the colon and small bowel.
    2. Dullness indicates solid masses
    3. Percussion sounds of the stomach area will vary with the time of the last meal.

d. Palpation
    i. Used to substantiate findings noted from previous measures of assessment and to further explore the abdomen. Palpation permits evaluation of the major abdominal organs in terms of shape, size, position and tenderness.
    ii. Light palpation is a gentle exploration using both hands. Useful to detect overall abdominal tenderness.
    iii. Deep palpation is used to detect masses and to assess abdominal organs.

Assessment of Bowel Sounds

Hyperactive Bowel Sounds	Hypoactive or Absent Bowel Sounds
♦ Increased bowel motility ♦ Stenotic bowel ♦ Early bowel obstruction ♦ Gastroenteritis ♦ Subsiding ileus	♦ Decreased bowel motility due to: ➢ Inflammation ➢ Gangrene ➢ Paralytic ileus ➢ Peritonitis ➢ Surgical manipulation ♦ Late bowel obstruction ♦ Lower lobe pneumonia

III. Ileus
a. Absence of peristalsis or function
b. Lack of mechanical issue
c. Causes
    i. Peritonitis
    ii. Sepsis
    iii. Medications, especially narcotics
    iv. Metabolic disturbances
    v. Hyperglycemia and hypokalemia
d. Characterized by absent or hypoactive bowel sounds and abdominal distention

IV. Bowel Obstruction
a. Defined as a partial or complete blockage
b. Causes

i. Extrinsic include adhesions, volvulus or hernias
ii. Intrinsic include tumor, stricture, or stenosis
iii. Intraluminal include bezoars, fecal material or gallstones

Signs and Symptoms of Intestinal Obstruction

General Signs	• Distention • Hyperactive bowel sounds of high-pitched, tinkling nature • Minimum rebound tenderness • Pain
Signs of Proximal Obstruction	• Acute onset • Bilious emesis • Frequent bouts of pain
Signs of Distal Obstruction	• Distention (minimal) • Onset may be more gradual • Less vomiting • Less frequent bouts of pain

Dilated loops of small bowel consistent with ileus - distended stomach

Dilated bowel loops – suspicious for SBO. Proximal dilated bowel loops combined with a clear transition point (beyond which there is no dilation) points to the likelihood of a bowel obstruction.

Handout adapted from Malone AM and Cresci G.

Self-Assessment Questions

1. The first step in conducting an assessment of the abdominal area is to:
   a. Inspect
   b. Auscultate
   c. Percuss

d. Palpate

2. If a clinician wanted to assess whether a feeding tube has crossed the pylorus and is located in the duodenum, which abdominal quadrant would be auscultated:
   a. Right upper quadrant
   b. Right lower quadrant
   c. Left upper quadrant
   d. Left lower quadrant

3. Which of the following is not a factor involved in the development of ileus:
   a. Peritonitis
   b. Sepsis
   c. Medications, especially narcotics
   d. Hyperkalemia

Key

1. A
2. C
3. D

References

Bickley LS, Szilagyi PG. The Abdomen. In: Bickley LS, Szilagyi PG (eds). *Bates' Guide to Physical Examination and History Taking*. Lippincott Williams & Wilkins. Philadelphia, PA; 2009.

Study Guide, Nutrition-Focused Physical Assessment Skills for Dietitians. A publication of DNS/ADA. 2000.

Parkman HP. Gastrointestinal Motility and Functional Disorders. ACP Medicine. http://online.statref.com/Document/DocumentBodyContent.aspx?docAddress=uvq9geMpJ. Accessed 2/15/11

Alkhoury F, Helton WS. Intestinal Obstruction. ACP Medicine. http://online.statref.com/Document/DocumentBodyContent.aspx?docAddress=XVXNVri. Accessed 2/15/11