

# SAEMS Abdominal Pain Standing Order

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## **TRAINING MODULE FOR ABDOMINAL PAIN**

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## Objectives

- Identify location of anatomical structures in the abdomen
- Identify the pathology of the abdomen
- Identify life-threatening abdominal pathology
- Identify types of pain that can be experienced
- Identify signs and symptoms of abdominal pain
- Describe prehospital assessment and management of abdominal pain

# Incidence

“ The complaint of abdominal pain is a common one and most complaints are associated with symptoms of nausea, vomiting and diarrhea from problems within the abdomen itself. Acute and severe abdominal pain is almost always a symptom of intraabdominal disease. But ten to fifteen percent of abdominal pain originates from outside the abdomen such as; lumbar spine fracture, myocardial infarction, pulmonary embolism, and pneumonia, yet the primary complaint is abdominal pain. ”

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As a prehospital provider it is not necessary to identify the cause, but to recognize the basic signs of serious conditions, and to provide necessary interventions and transportation. The patient with an acute abdomen can deteriorate quickly, requiring frequent reassessment and rapid transportation.

# Abdominal Pathology

The abdomen is an anatomical area that is bounded by the lower margin of the ribs and diaphragm above, the pelvic bone (pubic ramus) below, and the flanks on each side. Although abdominal pain can arise from the tissues of the abdominal wall that surround the abdominal cavity (such as the skin and abdominal wall muscles), the term abdominal pain generally is used to describe pain originating from organs within the abdominal cavity. Organs of the abdomen include the stomach, small intestine, colon, liver, gallbladder, spleen, pancreas, circulatory, and reproductive. The associated symptoms such as nausea, vomiting, anorexia, hematuria or melena usually indicate a serious problem.

# Abdominal Pathology

“ The “acute abdomen” refers to the sudden onset of abdominal pain and can be defined as:

An intraabdominal process of recent onset (up to three days) causing severe pain and often requiring surgical intervention.

This may be caused by one or more of the following conditions: ”

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**Mechanical process** (incarcerated hernia), **Inflammatory process** (appendicitis), **Vascular occlusion** (mesenteric arterial thrombosis),  
Congenital defect (omphalocele) or **Traumatic event** (ruptured spleen)

# Abdominal Pathology

“ **Abdominal emergencies** can be divided into gastrointestinal, genitourinary, or reproductive system emergencies. It is difficult for the prehospital provider to determine the source of the abdominal problem in the field, but the approach to managing the patient with acute abdominal pain should be consistent regardless of the system involved.

”

The following is a list of some conditions which may result in acute abdominal discomfort requiring rapid, life-saving surgical intervention:

Bleeding esophageal varices, abdominal aortic aneurysm, ruptured ectopic pregnancy, perforated ulcer, abdominal trauma, appendicitis, incarcerated hernia, peritonitis, intestinal obstruction or mesenteric infarction

## Other causes of abdominal pain

Abdominal pain can be caused by inflammation (diverticulitis, colitis), by stretching or distention of an organ (for example, obstruction of the intestine, blockage of a bile duct by gallstones, swelling of the liver with hepatitis), or by loss of the supply of blood to an organ (for example, ischemic colitis).

To complicate matters, however, abdominal pain also can occur for unclear reasons without inflammation, distention, or loss of blood supply. An important example of this latter type of pain is the irritable bowel syndrome (IBS). These latter types of pain are often referred to as functional pain because no recognizable (visible) causes for the pain have been found.

# Pain Assessment

There are three patterns of pain that are associated with the abdomen. The **first** is:

❖ **Visceral pain-** originates from the stretched muscle fibers in the wall of a hollow organ, spasm of these muscles or stretching of the capsule of the organ when it attempts to relieve an obstruction:

- ✓ Usually first type of pain experienced
- ✓ Usually diffuse and poorly localized
- ✓ Often associated with nausea and vomiting

The intermittent quality of the pain with obstruction of a hollow viscus coincides with the peristaltic waves of the organ and can be described as colicky and the patient appears restless attempting to find some relief with writhing and massage of the affected area

## Pain Assessment Continued

There are three patterns of pain that are associated with the abdomen. The **second** is:

❖ **Somatic pain-** The parietal peritoneum lines the abdominal cavity and the interior (inferior) surface of the diaphragm. Peritoneum becomes irritated if bacterial invasion has occurred:

- ✓ Ruptured viscus (perforated peptic ulcer)
- ✓ Bleeding into the cavity (trauma)
- ✓ Extending infection (pelvic inflammatory disease)
- ✓ Ischemic process (mesenteric occlusion)

When the parietal peritoneum is irritated, somatic pain results and is more localized and can be sharp and constant. It is usually aggravated by movement and patients are typically hunched over and immobile

## Pain Assessment Continued

There are three patterns of pain that are associated with the abdomen. The **third** is:

❖ **Referred pain-** pain experienced at a site other than where the local irritation is occurring:

▪ Overlapping sensory nerves in the spinal nerves in the spinal cord result in pain being felt in two areas:

✓ Pain radiates to distant sites like right scapula with acute Cholecystitis

✓ Pain that originates in the flank and radiates to the groin with renal colic

Obtaining a thorough history of the patient's pain is important in determining the pathophysiology alterations contributing to the pain making appropriate supportive measures

# **ASSESSMENT AND HISTORY**

*Thorough patient history and perform a complete detailed assessment*

## **The Way the Pain Begins**

Questions that should be ask by the EMT or Paramedic when assessing their patient:

- When does the pain occur?
- Constant?
- More often in the morning or at night?
- If the pain comes and goes, about how long does it last each time?
- Does it occur after eating certain types of foods or after drinking alcohol?
- Women-During menstruation?

## **Characteristics of the Pain - History**

Information obtained by taking a patient's history is important in helping EMTs and Paramedics determine the cause of pain. This includes the way the pain begins, its location, pattern, and duration. It also includes what makes the pain worse as well as what relieves it. Associated signs and symptoms, such as fever, diarrhea, or bleeding also are considered.

## Associated Symptoms Pearls

- ❖ Inquire about associated symptoms
  - Fever- infectious process may result in elevated temperature
    - ✓ Acute appendicitis can cause anorexia and fever
  - Constipation-bowel obstructions can lead to vomiting
- ❖ Age and gender provide helpful hints
  - Babies with abdominal pain usually indicative of atresia, hernia or stenosis
  - Children could be intussusception, hernia or appendicitis
  - Female think about cholecystitis, ectopic pregnancy or PID
  - Males think about ulcers because they suffer this more than females
  - Geriatric with new onset atrial fibrillation think mesenteric emboli.
  - Bowel obstruction from adhesions from previous surgeries

# Assessment

## History

- Age
- Past medical/surgical history
- Palliation/Provocation
- Quality (cramping, constant, sharp, dull, etc.)
- Region/Radiation/Referred
- Severity (use pain tools)
- Time (duration/repetition)
- Last meal eaten
- Last bowel movement
- ?Emesis
- Menstrual history (pregnancy)
- OPQRST

## Signs and Symptoms

- Pain
- Character of pain (constant, intermittent, sharp, dull, etc.)
- Distention
- Constipation
- Diarrhea
- Anorexia
- Radiation
- *Associated symptoms: (Helpful to localize source)*
- Fever, headache, blurred vision, weakness, malaise, myalgias, cough, dysuria, mental status changes, rash

## Differential

- CNS (increased pressure, headache, stroke, CNS lesions, trauma or hemorrhage, vestibular)
- Myocardial infarction
- Drugs (NSAID's, antibiotics, narcotic, chemotherapy)
- GI or Renal disorders
- Diabetic ketoacidosis
- Gynecologic disease (ovarian cyst, PID)
- Infections (pneumonia, influenza)
- Electrolyte abnormalities
- Food or toxin induce
- Medication or Substance abuse
- Pregnancy

# USING PAIN SCALES

For children less than 4 years old use an observational behavioral pain scale such as CHEOPS (Children's Hospital of Eastern Ontario Pain Scale) or FLACC (shown here).

Medscape® [www.medscape.com](http://www.medscape.com)

Categories	Scoring		
	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, quivering chin, clenched jaw
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid, or jerking
Cry	No cry (awake or asleep)	Moans or whimpers; occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to; distractible	Difficult to console or comfort

**Note:** Each of the five categories Face (F), Legs (L), Activity (A), Cry (C), and Consolability (C) is scored from 0-2, which results in a total score between 0 and 10.

From Merkel, Voepel-Lewis, Shayevitz, & Malviya (1997). The FLACC: A behavioral scale for scoring postoperative pain in young children. *Pediatric Nursing*, 23(3) 293-297.

Source: *Pediatr Nurs* © 2003 Jannetti Publications, Inc.

For children 4-12 years old use a self report scale such as the Wong-Baker Faces shown here.



**0**

No  
Hurt



**2**

Hurts  
Little Bit



**4**

Hurts  
Little More



**6**

Hurts  
Even More



**8**

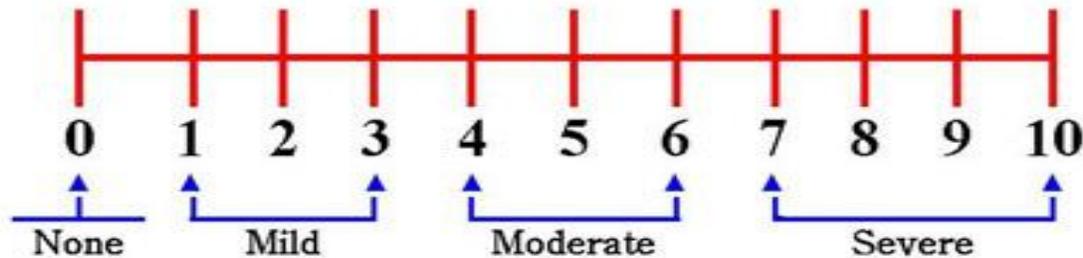
Hurts  
Whole Lot



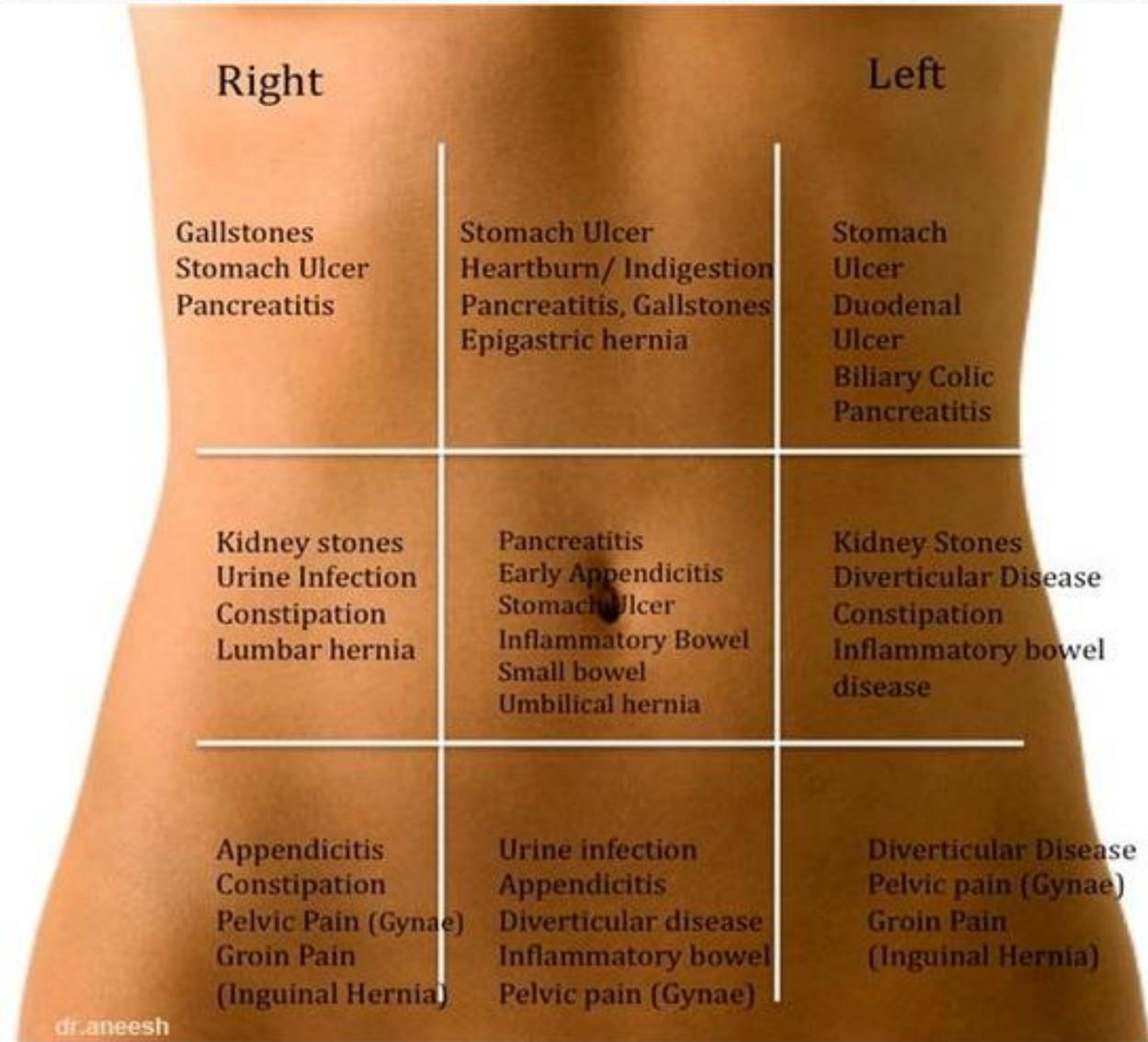
**10**

Hurts  
Worst

For ages 12 and older use a self report scale such as a simple descriptive pain intensity scale or the numeric rating scale. A facial pain scale is usable if the pt is unable to communicate using a descriptive or numeric scale.



# Illnesses that Cause Abdominal Pain



## Location

- Right upper quadrant
- Left upper quadrant
- Left lower quadrant
- Right lower quadrant
- Span upper abdomen
- Span lower abdomen
- Span entire abdomen



## Pattern

- Radiating
- Constant discomfort
- Stabbing
- Wavy cramping



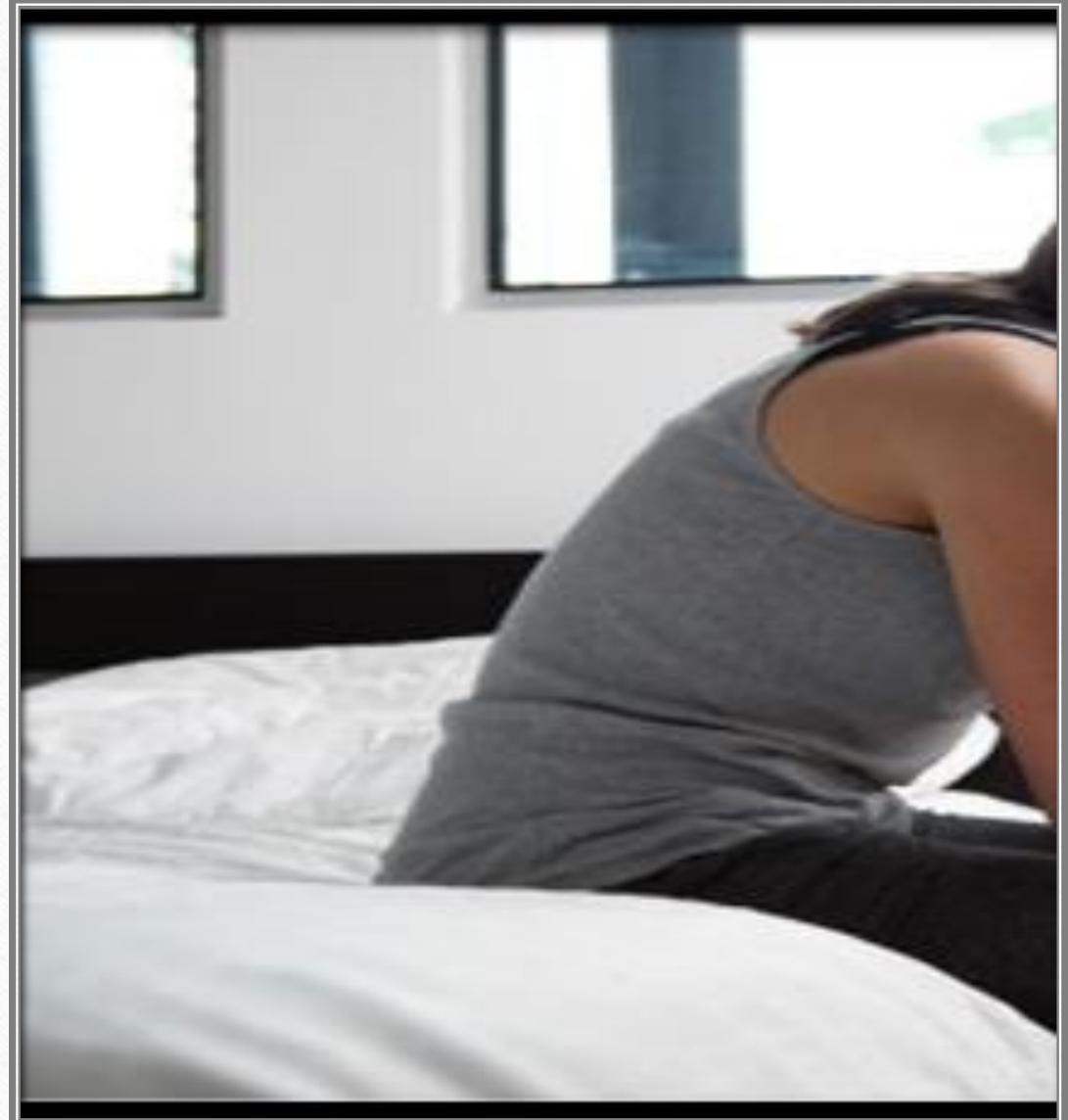
## Duration

- Constant
- Comes and goes over time
- Lasting minutes or hours
- Lasting one day or more



## What Provokes Pain?

- Coughing
- Breathing
- Sneezing
- Movement
- Palpation
- Relief from external pressure



## What Relieves Pain?

- Eating
- Lying on one side
- Staying still
- Moving
- Vomiting
- Relief from external pressure



## Signs & Symptoms

- Fever
- Nausea
- Vomiting
- Diarrhea
- Rectal bleeding
- Vaginal bleeding
- Abdominal appearance
- Guarding
- Tenderness
- Heat in area



## Physical Exam Pearls

- ❖ When assessing the patient's abdomen preferably in a supine position with the knees bent to reduce intraabdominal pressure look for
  - Scars
  - Bruising
  - Rashes
  - Discolorations
  - Lesions
- ❖ Observe the symmetry of the abdomen and look at the shape:
  - Pulsatile mass is observed
    - ✓ Could be indicative of an abdominal aortic aneurysm (AAA)
    - ✓ AAA could potentially rupture if palpated
    - ✓ Patients with a palpable, pulsating mass should be immediately transported to closest hospital capable of rapid surgical intervention

## Physical Exam Pearls

❖ Auscultation of abdomen typically follows inspection because the bowel is sensitive to touch and bowel sounds are best evaluated prior to palpation

❖ Percussion determines

- Presence of gas or fluid in the hollow organs or peritoneal cavity
- Determines whether any organs are enlarged organ (spleen or liver)
- Intraabdominal mass

*In the prehospital environment auscultation and percussion are two assessment techniques which are rarely performed*

❖ Orthostatic vital signs: supine to sitting BP then to standing BP, drop or drop of SBP of .20 mm Hg or increase HR > 20 bpm at any time

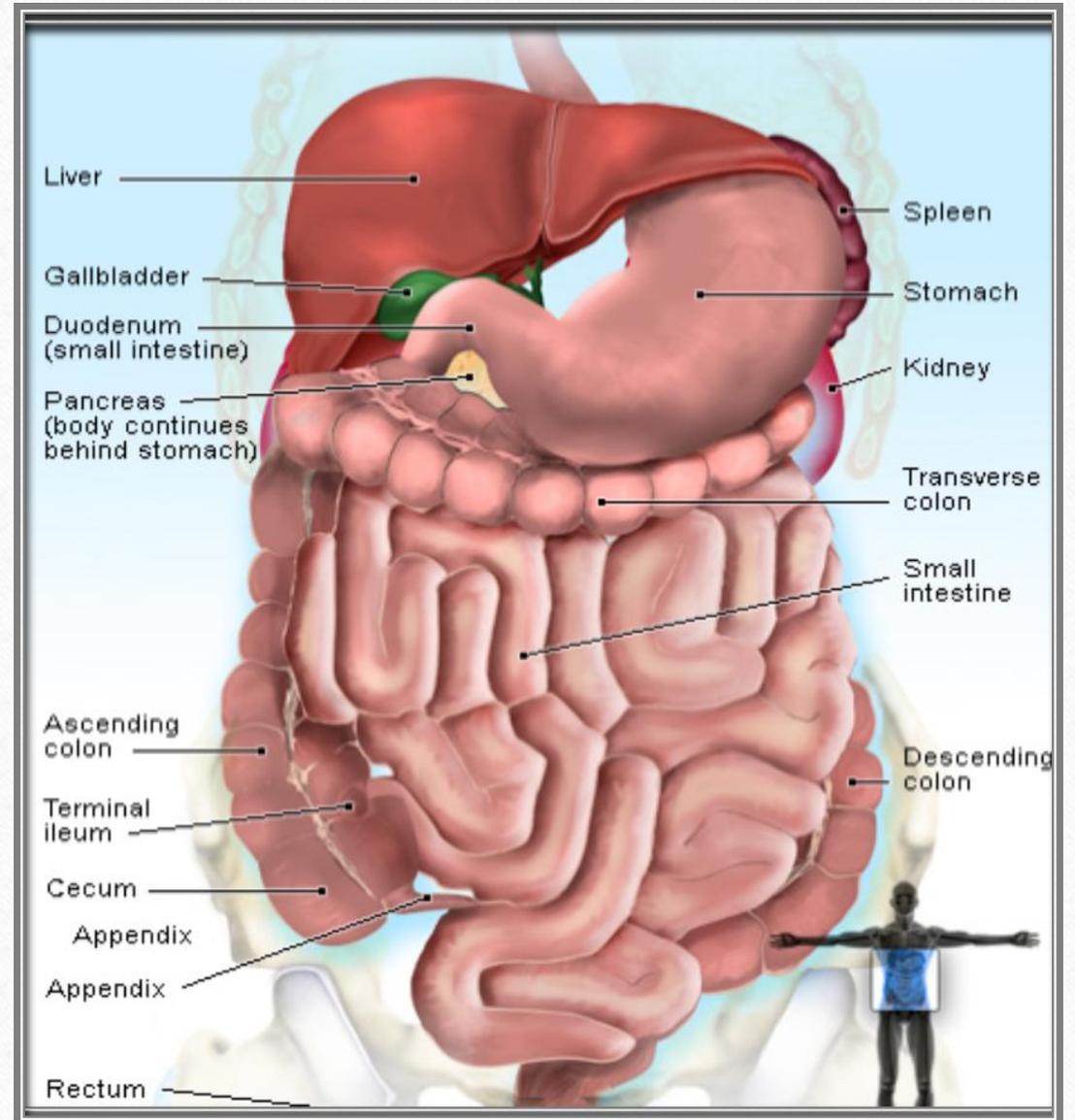
❖ Abdominal pain in women of childbearing age should be treated as an ectopic Pregnancy until proven otherwise

❖ NPO for any patient with abdominal pain

❖ Appendicitis presents with vague, peri-umbilical pain which migrates to the RLQ over time

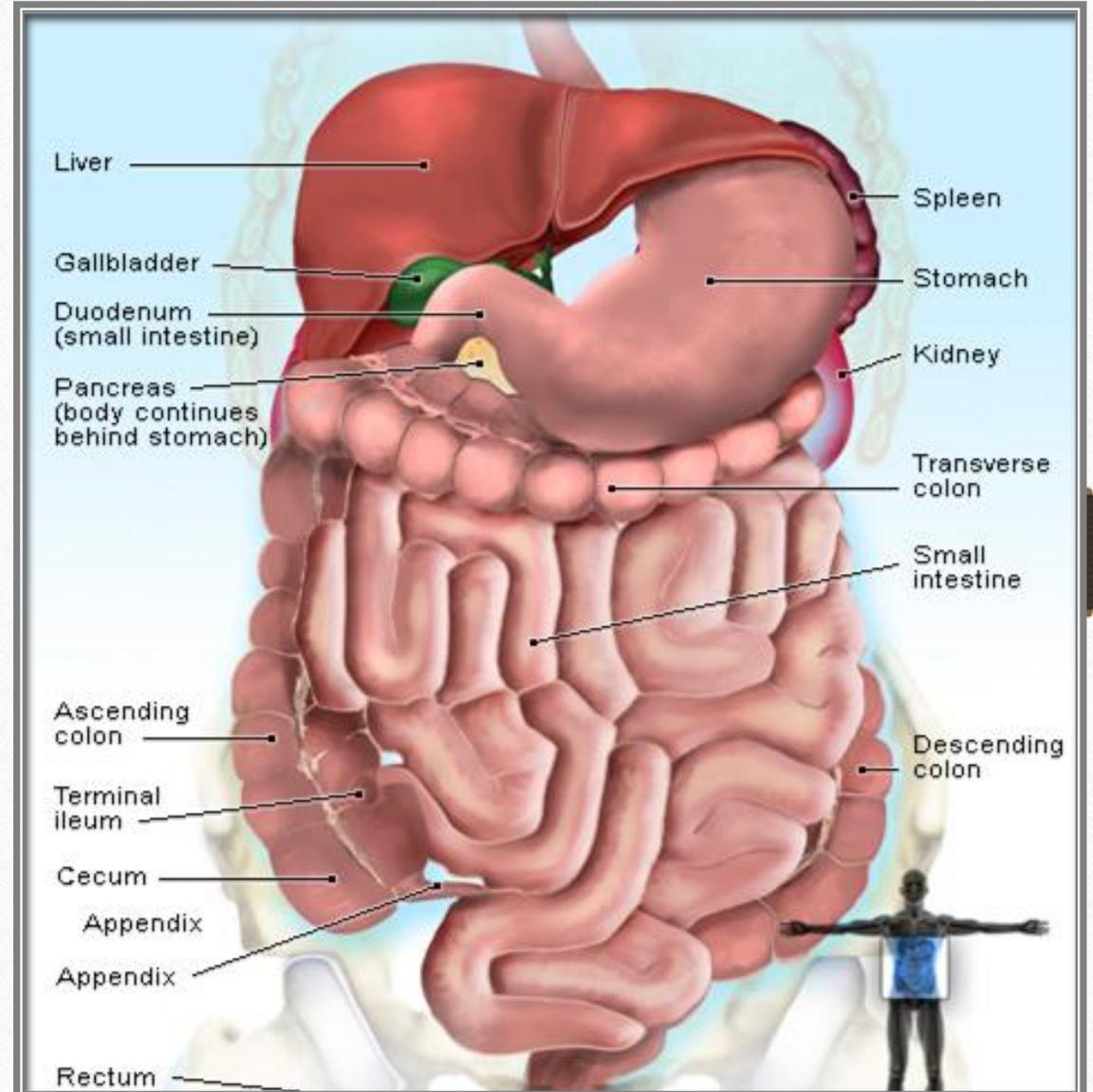
## Right Upper Quadrant

- Liver - Hepatitis
- Gall Bladder - Gallstones
- Bile Duct - Cholangitis
- Kidney – Kidney Stones
- Transverse Colon
- Ascending Colon



## Left Upper Quadrant

- Liver - Hepatitis
- Stomach – Gastritis
- Kidney – Kidney Stones
- Spleen – Abscess, rupture
- Duodenum
- Pancreas – Pancreatitis (can span upper right)
- Descending Colon

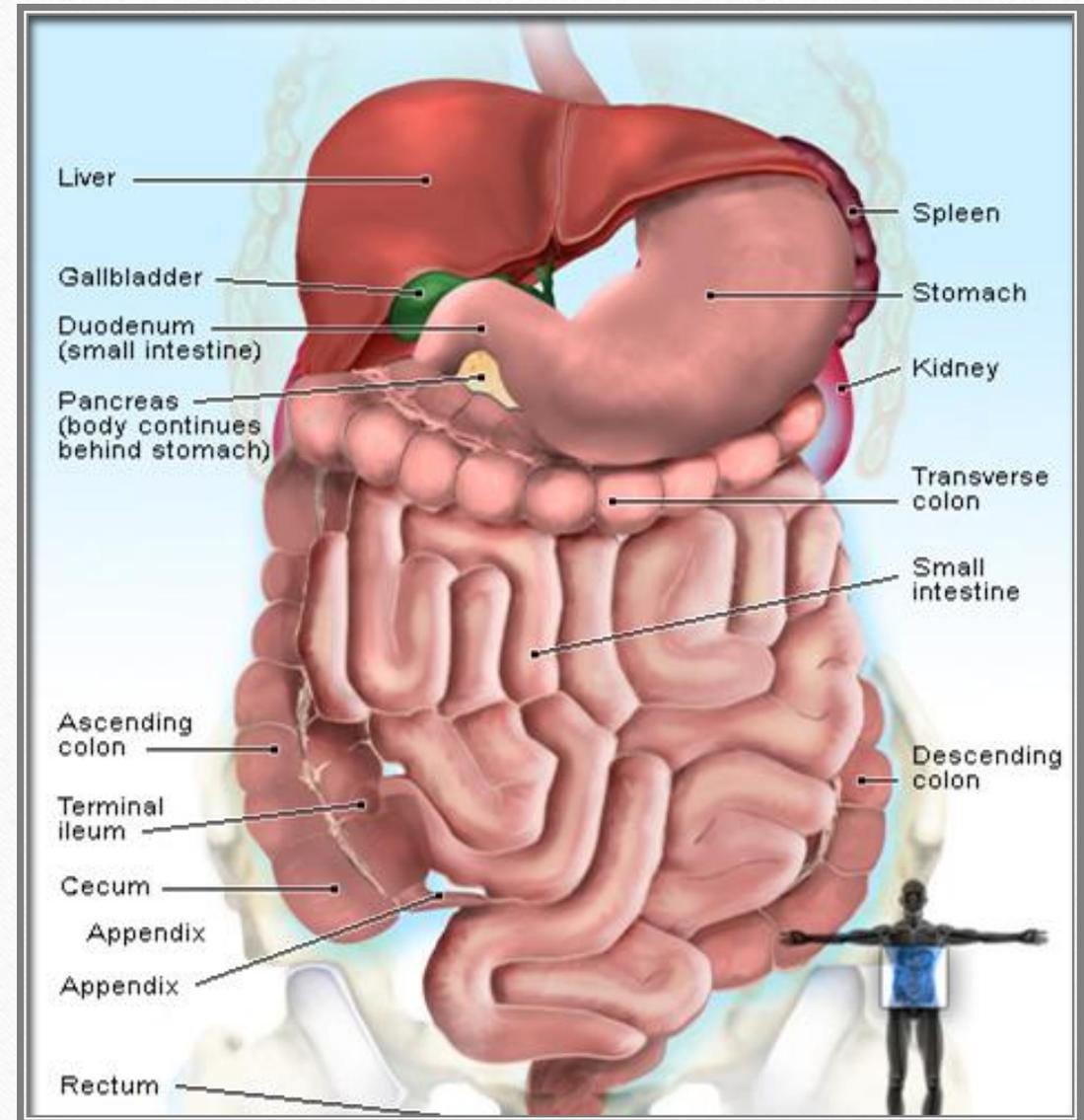


## Right or Left Upper Quadrant Pain

- Acute pancreatitis – inflammation in the pancreas
- Shingles
- Lower lobe pneumonia
- Myocardial ischemia – caused by critical coronary artery obstruction
- Angina
- Radiculitis – inflammation of a spinal nerve root

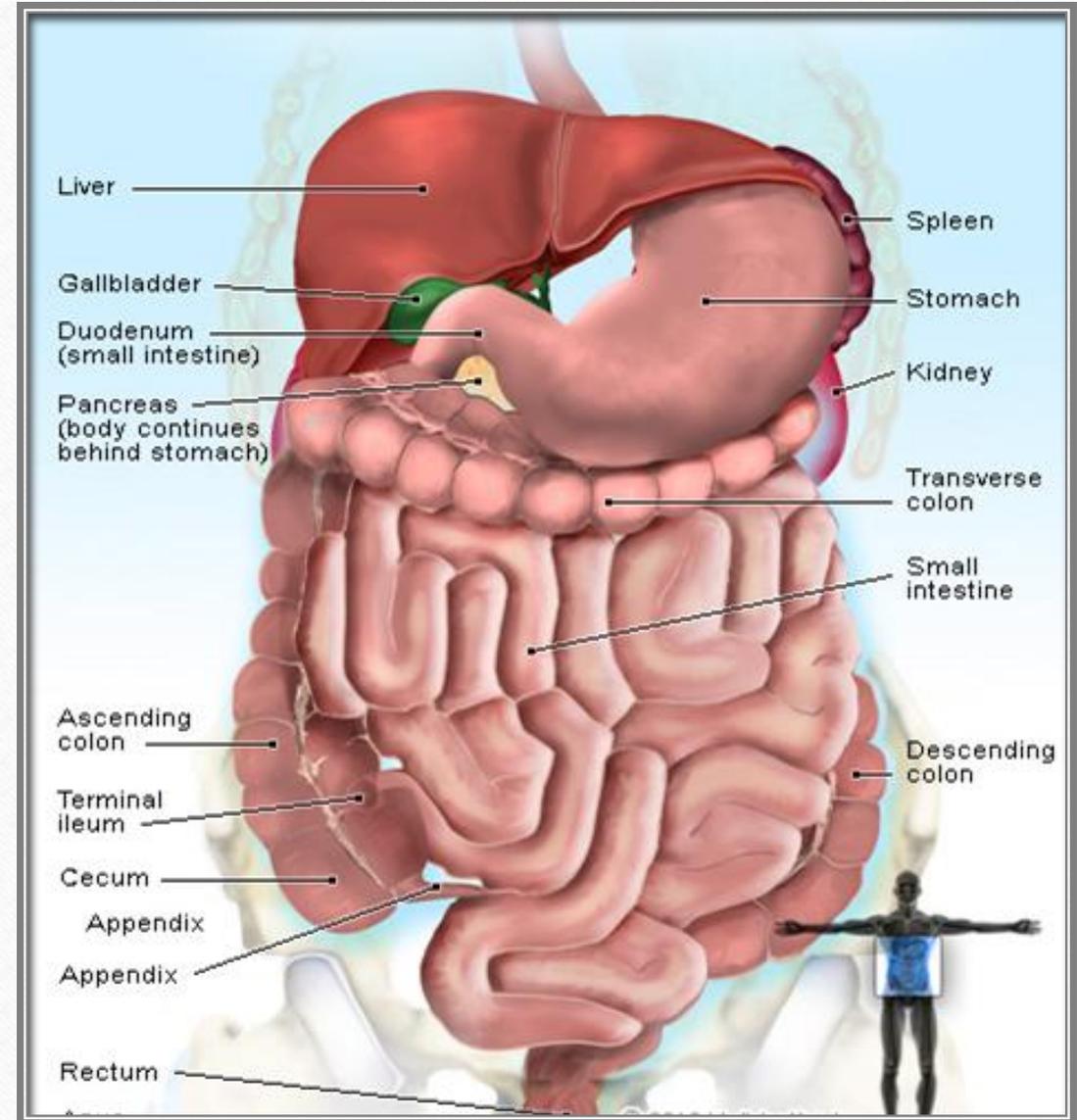
## Lower Left Quadrant

- Small Intestine – Diverticulitis
- Ovary – Cyst
- Rectum
- Bladder – Cystitis
- Testicle - Torsion



## Right Lower Quadrant

- Ascending Colon
- Appendix - Appendicitis
- Cecum – Blockage, Cancer, IBS
- Uterus
- Ovary - Cyst
- Bladder – Infection, Cancer, Interstitial Cystitis
- Testicle - Torsion



## Right or Left Lower Quadrant Pain

- Abdominal abscess
- Abdominal wall hematoma
- Cystitis
- Diverticulitis
- Endometriosis
- Hernia
- Pelvic inflammatory disease
- Kidney Stones
- Ruptured abdominal aortic aneurysm
- Ruptured ectopic pregnancy
- Torsion of ovarian cyst or teste

## **Inclusions from Abdominal Pain Standing Order**

- Use on patients with complaint of abdominal pain

## **Exclusions from Abdominal Pain Standing Order**

- Pregnancy – follow OB/GYN Standing Order
- Patients meeting Trauma Triage Decision Scheme

# Management of Abdominal Pain

- This standing order (SO) may be considered for patients who complain of abdominal pain and should be managed with immediate supportive care to include oxygen to maintain sat  $> 94\%$  and if angina equivalent present, consider cardiac monitor and/or 12 lead ECG monitoring if ALS
- Considerations on these conditions:
  - *Pregnancy*-these patients may often be transported directly to a labor and delivery inpatient unit, bypassing the ED. Telemetry information regarding gestational age, complications, etc. is important in making destination decisions
  - *Trauma triage* -Patients who meet the SAEMS Trauma Triage Decision Scheme are not eligible for this SO usage
- Patients that have normal volume status can have an IV of NS/LR at TKO (if permitted) and transported in position of comfort. If volume depleted, bolus with 20ml/kg, reassessing hemodynamic and pulmonary status frequently
- ALS can follow Nausea/Vomiting/Diarrhea SO and Pain Management SO as needed

# Conclusion

Acute abdominal distress may be the result of conditions involving several different organ systems. According to some references there are approximately one hundred different causes of abdominal pain. The expectation of the field provider is not to diagnose, but to recognize and manage those potentially life-threatening conditions in these patients. Knowledge of the organs and illnesses as well as a thorough patient history and complete detailed assessment will assure that the EMT or Paramedic is able to give the best patient care.

## References

- <http://doitandhow.com>
- <http://emsonline.net>
- <http://emsworld.com>
- <http://emsworld.com>
- <http://Healthfixit.com>
- <http://Mayoclinic.org>
- <http://Medicinenet.com>
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