

# **Abdomen**

## **abdominal wall, layers, blood supply, venous and lymphatic drainage, and innervation of abdominal wall, peritoneum**

borders	outer cranial: 1/ xiphoid process 2/ costal arch 3/ Th12 vertebra
	outer caudal: 1/ iliac crest 2/ anterior superior iliac spine 3/ inguinal lig. 4/ mons pubis
	inner cranial: diaphragm (right dome extends to the 4th intercostal space left dome extends to the 5th intercostal space)
	inner caudal: plane through terminal line

## **Abdominal wall**

<b>Orientation lines</b>	1/ xiphisternal line – at level of Th8 vertebra 2/ subcostal line – at level of L3 vertebra 3/ bispinal line (transtubercular) – at level of L5 vertebra
clinically important lines	1/ transpyloric line – at level of L1 vertebra, through: pylorus superior part of duodenum (duodenal bulb) fundus of gallbladder body of pancreas spleen duodenojejunal flexure beginning of superior mesenteric a. root of transverse mesocolon cisterna chyli hilum of kidney lower border of spinal cord
,	2/ transumbilical line – at level of L4 vertebra
<b>Abdominal regions</b>	epigastrium – epigastric region, left and right hypochondriac regions mesogastrium – umbilical region, left and right lateral regions hypogastrium – pubic region, left and right inguinal regions
<b>Lumbar vertebrae (5)</b>	1/ body of vertebra 2/ vertebral arch – lamina of arch, pedicle of arch superior and inferior vertebral notch – intervertebral foramen vertebral foramen 3/ processes: superior articular process and superior articular surface inferior articular process and inferior articular surface – mammillary process costal process – accessory process spinous process

<b>Layers of abdominal wall</b>	1/ skin 2/ subcutaneous tissue + superficial fascias + suprafascial structures 3/ deep fascia – fascia of external oblique abdominis m. 4/ muscles of abdominal wall 5/ transversalis fascia 6/ parietal peritoneum
superficial fascias	1/ Camper's fascia (fatty layer) – down continues to dartos m. 2/ Scarpa's fascia (membranous layer) – down continues to superficial perineal fascia of Colles' dartos m. + Colles' fascia = tunica dartos
suprafascial structures	1/ arteries and veins: cutaneous brr. of posterior intercostal aa. and vv. cutaneous brr. of musculophrenic a. and v. superficial epigastric a. and v. superficial circumflex iliac a. and v. thoracoepigastric v. ← abdominal subcutaneous v. ← paraumbilical vv.
	2/ lymphatics: axillary lnn. inguinal lnn.
	3/ innervation: lateral and anterior cutaneous brr. of intercostal nn. (Th7-Th11) subcostal n. (at level of Th12 vertebra) iliohypogastric n. from lumbar plexus (at level of L1 vertebra) ilioinguinal n. from lumbar plexus (at level of L1 vertebra) – enters scrotum through superficial inguinal ring
deep fascia	fascia of external oblique abdominis m. down continues to scrotum as external spermatic fascia to thigh as fascia lata
muscles of abdominal wall	1/ ventral group: rectus abdominis m. – tendinous intersections rectus sheath (anterior layer, posterior layer) arcuate line (Douglas), linea alba pyramidalis m.
	2/ anterolateral group: external oblique abdominal m. inguinal lig. (lacunar lig. – pectenial lig., reflex lig.) – superficial inguinal ring: medial and lateral crus intercrural fibers internal oblique abdominal m. transversus abdominis m. – semilunar line
	3/ dorsal group: quadratus lumborum m. psoas major m. and psoas minor m.

transversalis fascia	– deep inguinal ring: interfoveolar lig. inguinal falx (conjoint tendon)
parietal peritoneum	internal surface of anterior abdominal wall five peritoneal folds which extend toward umbilicus: 1/ median umbilical fold – obliterated urachus supravesical fossa 2/ medial umbilical fold (paired) – obliterated umbilical a. medial inguinal fossa – superficial inguinal ring 3/ lateral umbilical fold (paired) – inferior epigastric vessels lateral inguinal fossa – deep inguinal ring
arteries of abdominal wall	posterior intercostal aa. – lateral cutaneous brr. superior epigastric a. from internal thoracic a. – anterior cutaneous brr. inferior epigastric a. from external iliac a. – anterior cutaneous brr. superficial epigastric a. from femoral a. deep circumflex iliac a. from external iliac a. superficial circumflex iliac a. from femoral a.
veins of abdominal wall	thoracoepigastric v. abdominal subcutaneous vv. posterior intercostal vv. – lateral cutaneous brr. superficial epigastric v. superficial circumflex iliac v. deep circumflex iliac v. superior epigastric v. – anterior cutaneous brr. inferior epigastric v. – anterior cutaneous brr.
innervation of abdominal wall	intercostal nn. (at level of Th7-Th11 vertebrae) lateral and anterior cutaneous brr. muscular brr. subcostal n. (at level of Th11 vertebra) iliohypogastric n. from lumbar plexus (at level of L1 vertebra) ilioinguinal n. from lumbar plexus (at level of L1 vertebra)
<b>inguinal canal</b>	entrance: deep inguinal ring (in lateral inguinal fossa) medial and lateral crus, intercrural fibers exit: superficial inguinal ring (in medial inguinal fossa) interfoveolar lig., inguinal falx (conjoint tendon)
walls	anterior: aponeurosis of external oblique abdominal m. superior: internal oblique and transversus abdominal m. inferior: inguinal lig. posterior: transversalis fascia (interfoveolar lig., inguinal falx)
content	♂ spermatic cord, cremasteric a., ilioinguinal n., genital br. of genitofemoral n. ♀ round ligament of uterus, artery of round lig., ilioinguinal n., genital br. of genitofemoral n.

## Peritoneum

layers	1/ parietal peritoneum 2/ visceral peritoneum
spaces	1/ peritoneal cavity with peritoneal fluid 2/ extraperitoneal space
<b>peritoneal cavity</b>	transverse mesocolon divides peritoneal cavity into: 1/ supramesocolic part 2/ inframesocolic part
excavations	♀ vesicouterine pouch, rectouterine pouch (Douglas) ♂ rectovesical pouch
peritoneal folds	greater omentum 1/ gastrophrenic lig. 2/ gastosplenic lig. 3/ gastrocolic lig.
	lesser omentum 1/ hepatogastric lig. 2/ hepatoduodenal lig.: portal v. proper hepatic a. bile duct
	mesentery – root of mesentery mesocolon – transverse mesocolon mesoappendix mesosigmoid mesorectum
peritoneal recesses	left and right subphrenic recesses left and right subhepatic recess – falciform lig. of liver hepatorenal recess around duodenojejunal flexure: superior and inferior duodenal recesses paraduodenal recess – paraduodenal fold (inferior mesenteric v.) retroduodenal recess
	around ileocaecal orifice: superior and inferior ileocaecal recess, retrocaecal recess around sigmoid colon: intersigmoid recess around ascending and descending colon medial and lateral paracolic recesses
supramesocolic part	blood supply from celiac trunk omental bursa (lesser peritoneal cavity) epiploic (Winslow) foramen, vestibule, isthmus superior, inferior, and splenic recesses
inframesocolic part	root of mesentery divides inframesocolic part of peritoneal cavity into: right inframesocolic part – blood supply from superior mesenteric a. left inframesocolic part – blood supply from inferior mesenteric a.