

Worksheet

Body Structure

True or False

Examine the following statements. Identify if the statement is true or false	True	False
1. The term histology means “the study of tissues.”	✓	
2. Lipid is the main carbohydrate that provides energy to cells.		✓
3. ATP is produced by the cell’s mitochondria.	✓	
4. Genes control the formation of proteins.	✓	
5. Connective tissue is composed of muscle cells.		✓
6. Cells are organized into tissues, which are arranged into organs.	✓	
7. The integumentary system lines the digestive organs.		✓
8. Enzymes speed up chemical reactions.	✓	
9. The medulla makes up the outer region of an organ.		✓
10. The roots nucle/o and kary/o mean “nucleus.”	✓	
11. A coronal plane divides the body into superior and inferior parts.		✓
12. The diaphragm separates the abdominal cavity from the thoracic cavity.	✓	
13. The hypogastric region is inferior to the stomach.	✓	
14. The root dactyl/o refers to the arm.		✓

	True	False
15. In humans, the terms anterior and ventral refer to the same anatomic direction.	✓	
16. A sinus is a wall that divides two cavities.		✓
17. The root celi/o refers to the lower back.		✓
18. The intercostal muscles are between the ribs.	✓	
19. The dorsal cavity contains the brain and spinal cord.	✓	
20. Epithelial tissue covers body surfaces.	✓	

Fill-in-the-Blank

Complete the sentence with the correct term(s).	Answers
21. The large membrane that lines the abdominopelvic cavity is the _____.	<i>peritoneum</i>
22. The muscle that separates the thoracic cavity from the abdominal cavity is the _____.	<i>diaphragm</i>
23. The root celi/o pertains to the _____.	<i>abdomen</i>
24. The adjective cervical refers to the _____.	<i>neck</i>
25. The most superior and medial region of the abdomen is the _____ region.	<i>epigastric</i>
26. If the abdomen is divided into four parts, each part is called a(n) _____.	<i>quadrant</i>
27. The cranial cavity contains the _____.	<i>brain</i>
28. The term cephalic pertains to the _____.	<i>head</i>
29. A lateral structure is located toward the _____.	<i>side</i>
30. Another term for dorsal is _____.	<i>posterior</i>
31. The opposite of inferior is _____.	<i>superior</i>
32. The root brachi/o means _____.	<i>arm</i>
33. The adjective that means “above the kneecap” is _____.	<i>suprapatellar</i>
34. A central opening within a tube or hollow organ is called a(n) _____.	<i>lumen</i>
35. The nose is divided by the nasal _____.	<i>septum</i>
36. The opposite of distal is _____.	<i>proximal</i>

	Answers
37. The sum of all the physical and chemical activities that occur in the body make up _____.	<i>metabolism</i>
38. The material that fills the cell and holds the organelles is the _____.	<i>cytoplasm</i>
39. The control region of the cell is the _____.	<i>nucleus</i>
40. The catalysts needed for metabolic reactions are called _____.	<i>enzymes</i>
41. The process of body cell division is _____.	<i>mitosis</i>
42. The body's state of internal stability is called _____.	<i>homeostasis</i>
43. The basic structural and functional unit of the living organism is the _____.	<i>cell</i>
44. A threadlike body in the nucleus that contains the genes is a(n) _____.	<i>chromosome</i>
45. The simple sugar that circulates in the blood and provides energy is _____.	<i>glucose</i>
46. The thick fluid secreted by cells that lubricates and protects tissues is _____.	<i>mucus</i>
47. Cytogenesis is the formation of _____.	<i>cells</i>
48. The abbreviation for the cell's energy compound is _____.	<i>ATP</i>
49. Adipose tissue is designed to store _____.	<i>lipids; fat, fats</i>
50. The outer layer of the cell that is composed mostly of lipids and proteins is the _____.	<i>plasma membrane</i>
51. A group of cells that works together for a specific purpose is a(n) _____.	<i>tissue</i>
52. The inner region of an organ is called the _____.	<i>medulla</i>
53. The study of tissues is _____.	<i>histology</i>
54. The category of organic compounds that includes sugars and starches is _____.	<i>carbohydrates</i>
55. A category of organic compounds that includes structural materials, enzymes, and some hormones is _____.	<i>proteins</i>
56. A specialized structure in the cytoplasm of a cell is a(n) _____.	<i>organelle</i>
57. Cell division is known as _____.	<i>mitosis</i>
58. The simplest tissue that lines, covers, or supports an organ is a(n) _____.	<i>membrane</i>
59. The type of metabolism in which body substances are made and the building phase of metabolism is _____.	<i>anabolism</i>
60. A complex sugar compound stored in liver and muscles that is broken down into glucose when needed for energy is _____.	<i>glycogen</i>

	Answers
61. _____ means “of or relating to the head.”	Cephalic
62. The abdomen can be divided into four sections, or _____.	quadrants
63. _____ means “nearer to the point of attachment or to a given reference point.”	Proximal
64. _____ means “pertaining to the navel.”	Umbilical
65. _____ refers to “lying down,” specifically according to the part of the body resting on a flat surface.	Decubitus position
66. The muscle that separates the thoracic from the abdominal cavity is the _____.	diaphragm
67. The large serous membrane that lines the abdominopelvic cavity and covers the organs within it is the _____.	peritoneum
68. The forearm is technically known as the _____.	antebrachium
69. The stage that cells are in when they are not dividing is _____.	interphase
70. Simple epithelium has _____ of epithelial cells.	one
71. The _____ plane divides the body into superior and inferior parts.	transverse OR horizontal
72. The _____ regions of the abdomen are named for a bone of the pelvis.	iliac

Matching

Match the following terms and write the appropriate letter next to each term.

Term	Answers	Definition
73. polymorphic	<i>C</i>	A. study of form
hyperplasia	<i>B</i>	B. overdevelopment
morphology	<i>A</i>	C. having many forms
atrophy	<i>D</i>	D. wasting of tissue
74. somatotropic	<i>C</i>	A. immature red blood cell
hydrophilic	<i>D</i>	B. formation of a nucleus
erythroblast	<i>A</i>	C. acting on the body
karyogenesis	<i>B</i>	D. attracting water
75. proteolytic	<i>B</i>	A. high blood sugar
hyperglycemia	<i>A</i>	B. destroying protein
phagocyte	<i>D</i>	C. the building phase of metabolism
anabolism	<i>C</i>	D. cell that takes in waste
76. parenchyma	<i>A</i>	A. the functional tissue of an organ
neoplasia	<i>D</i>	B. outer region of an organ
genesis	<i>C</i>	C. origin
cortex	<i>B</i>	D. new formation of tissue
77. adactyly	<i>D</i>	A. largeness of the feet
pedometer	<i>C</i>	B. fusion of the fingers or toes
syndactyly	<i>B</i>	C. instrument that measures footsteps
macropodia	<i>A</i>	D. absence of a finger or toe
78. epidermis	<i>C</i>	A. dividing wall
fundus	<i>B</i>	B. base of a hollow organ
meatus	<i>D</i>	C. outer layer of the skin
septum	<i>A</i>	D. a passage or opening

Term	Answers	Definition
79. sphincter	<i>D</i>	A. a cavity
sinus	<i>A</i>	B. under the tongue
decubitus	<i>C</i>	C. lying down
sublingual	<i>B</i>	D. a circular muscle
80. proximal	<i>B</i>	A. toward the bottom of the spine
caudal	<i>A</i>	B. nearer to the point of attachment
medial	<i>D</i>	C. face up
supine	<i>C</i>	D. toward the midline

Pronounce It

For each phonetic transcription in this section, pronounce the term aloud and write it in the space provided, being careful to spell it correctly.

	Answers
81. ING-gwih-nal	<i>inguinal</i>
82. IL-e-ak	<i>iliac</i>
83. DI-ah-fram	<i>diaphragm</i>
84. SE-le-ak	<i>celiac</i>
85. lap-ah-ROT-o-me	<i>laparotomy</i>
86. DAK-til-o-spazm	<i>dactylospasm</i>
87. in-trah-U-ter-in	<i>intrauterine</i>
88. in-trah-OK-u-lar	<i>intraocular</i>
89. ep-ih-GAS-tre-um	<i>epigastrium</i>
90. LU-men	<i>lumen</i>
91. me-A-tus	<i>meatus</i>
92. SFINK-ter	<i>sphincter</i>
93. meg-ah-SEF-ah-le	<i>megacephaly</i>
94. ak-ro-si-ah-NO-sis	<i>acrocyanosis</i>
95. an-te-BRA-ke-al	<i>antebrachial</i>
96. bra-ke-o-seh-FAL-ik	<i>brachopcephalic</i>
97. ak-ro-ki-NE-se-ah	<i>acrokinesia</i>
98. hi-po-KON-dre-ak	<i>hypochondriac</i>
99. per-ih-to-NE-um	<i>peritoneum</i>

	Answers
100. SAJ-ih-tal	<i>sagittal</i>
101. KRO-mo-some	<i>chromosome</i>
102. EN-zime	<i>enzyme</i>
103. meh-TAH-bo-lizm	<i>metabolism</i>
104. mi-TO-sis	<i>mitosis</i>
105. MU-kus	<i>mucus</i>
106. NU-kle-us	<i>nucleus</i>
107. PRO-tene	<i>protein</i>
108. pah-RI-eh-tal	<i>parietal</i>
109. pah-REN-kih-mah	<i>parenchyma</i>
110. mik-SO-mah	<i>myxoma</i>
111. in-ter-STISH-al	<i>interstitial</i>
112. VIS-er-al	<i>visceral</i>
113. hi-PER-tro-fe	<i>hypertrophy</i>
114. ah-PLA-je-ah	<i>aplasia</i>
115. 5.DIS-tro-fe	<i>dystrophy</i>
116. di-SAK-ah-ride	<i>disaccharide</i>
117. kah-TAB-o-lizm	<i>catabolism</i>
118. si-TOL-o-je	<i>cytology</i>

Word Building

For each item in this section, select the correct word parts from the bank below to form the term that matches the definition. Word parts may be used more than once.

Part 1	Answers
120. Formation of fat	<i>lip-o-genesis</i>
121. A fatty tumor	<i>lip-oma</i>
122. Cell that stores fat	<i>adip-o-cyte</i>
123. Resembling a fiber	<i>fibr-oid</i>
124. Resembling a network	<i>reticul-ar</i>
125. A cell that secretes fibers	<i>fibr-o-cyte</i>
126. Having several nuclei	<i>poly-nucle-ar</i>
127. Cell that contains a network	<i>reticul-o-cyte</i>
128. Attracting or absorbing fat	<i>lip-o-phil-ic</i>
129. Without a nucleus	<i>a-nucle-ar</i>

Part 2	Answers
130. Pertaining to the thorax and abdomen	<i>thorac-o-abdomin-al</i>
131. Within the abdomen	<i>intra-abdomin-al</i>
132. Around the abdomen	<i>peri-abdomin-al</i>
133. Within the head	<i>intra-cephal-ic</i>
134. Above the abdomen	<i>supra-abdomin-al</i>
135. Outside the chest	<i>extra-thorac-ic</i>
136. Absence of fingers	<i>a-dactyl-y</i>
137. Pertaining to the forearm	<i>ante-brachi-al</i>
138. Pertaining to the arm and head	<i>brachi-o-cephal-ic</i>
139. More than the normal number of fingers and toes	<i>poly-dactyl-y</i>

Part 1 Word Bank

a	phil	o
genesis	ar	reticul
oma	nucle	fibr
adip	poly	oid
lip	cyte	

Part 2 Word Bank

a	al	brachi
dactyl	ic	o
poly	thorac	cephal
abdomin	ante	peri
extra	intra	
supra	y	

Sorting

For each word part category in this section, list the corresponding word parts from the bank below.

Part 1 Word Bank

aden/o	amyl/o	cyt/o	fibr/o
gen	glyc/o	hydr/o	kary/o
phag/o	plas	prote/o	troph/o

Part 1

Answers

140. roots for cell activity *phag/o, gen, troph/o, plas*

141. roots for cells and tissues *kary/o, cyt/o, aden/o, fibr/o*

142. roots for body chemistry *glyc/o, hydr/o, prote/o, amyl/o*

Part 2 Word Bank

anterior	epigastric	lateral	superficial
decubitus	hypochondriac	prone	supine
distal	iliac	recumbent	umbilical

Part 2

Answers

143. anatomic directions *superficial, distal, anterior, lateral*

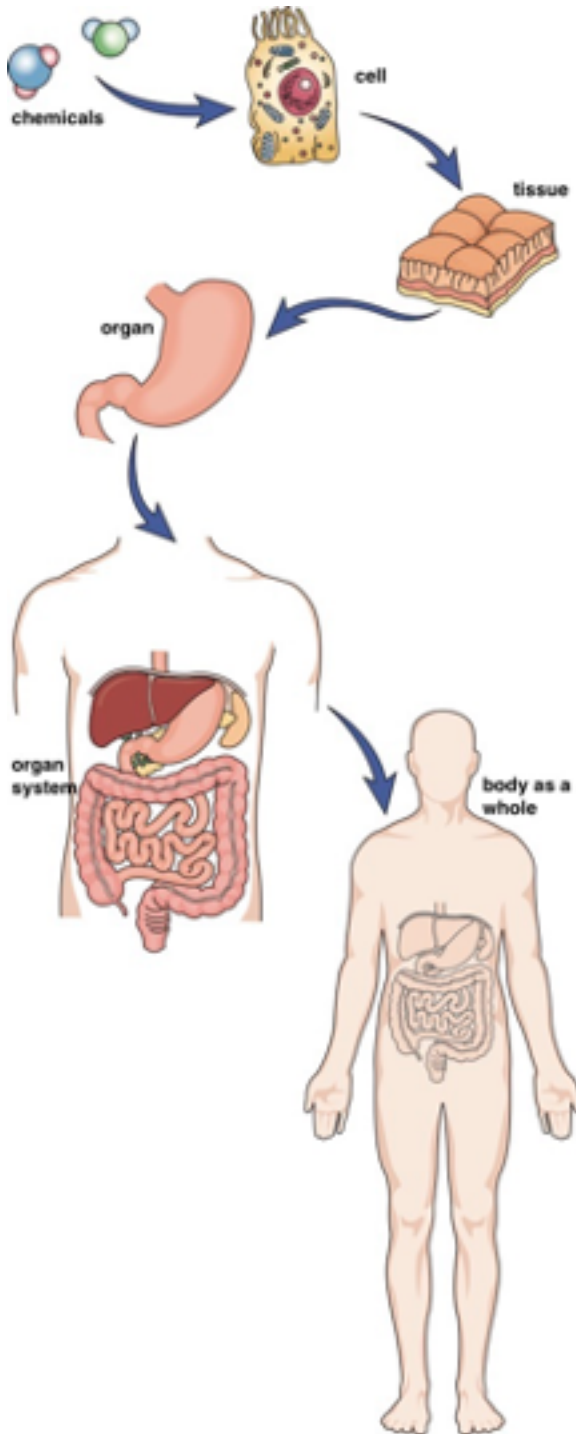
144. abdominal regions *epigastric, hypochondriac, iliac, umbilical*

145. body positions *decubitus, supine, prone, recumbent*

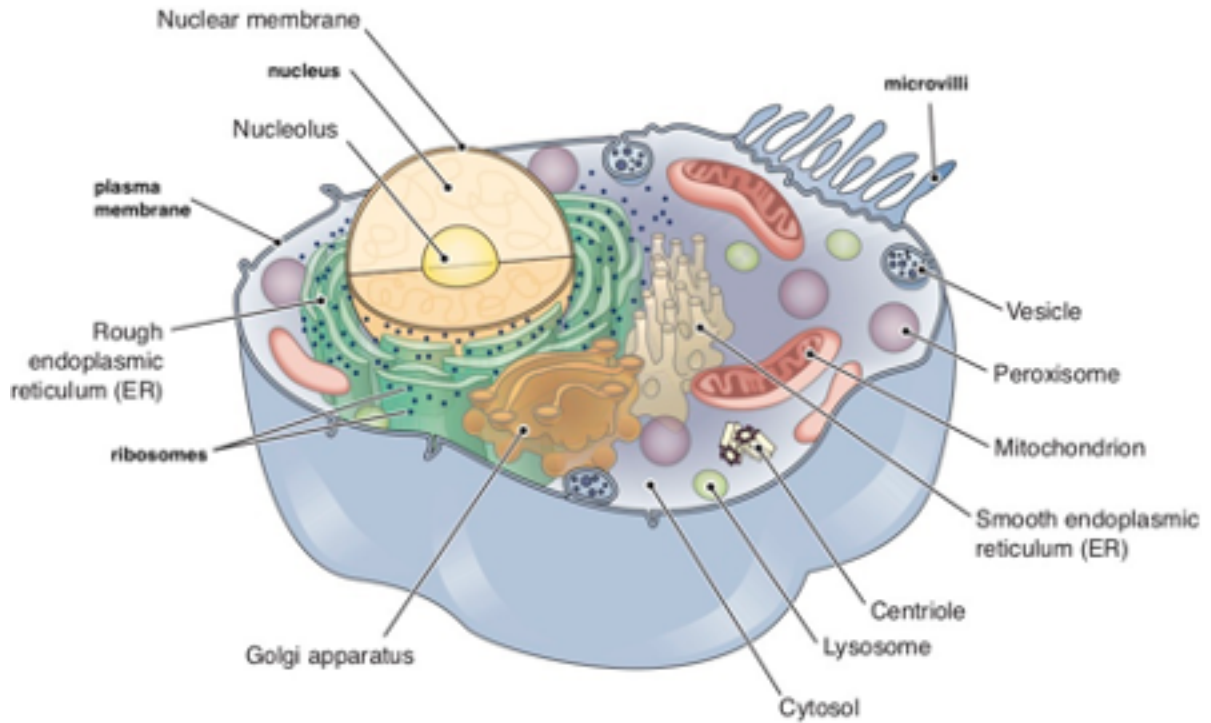
Look and Label

For each image in this section, write each label indicated on the image in the correct location or near the image with a line pointing from the label to the correct location on the image.

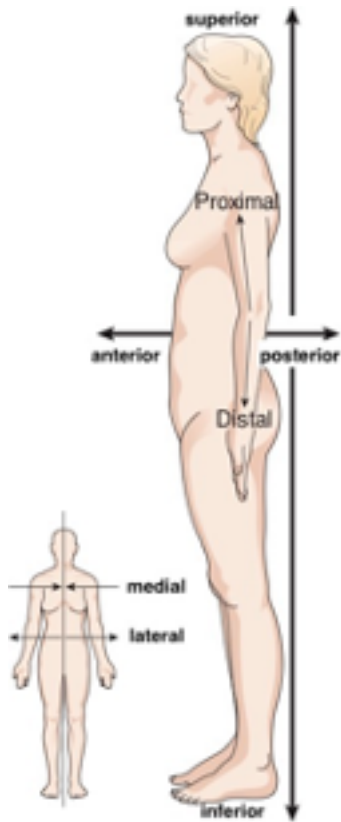
146. Labels: body as a whole, cell, chemicals, organ, organ system, tissue



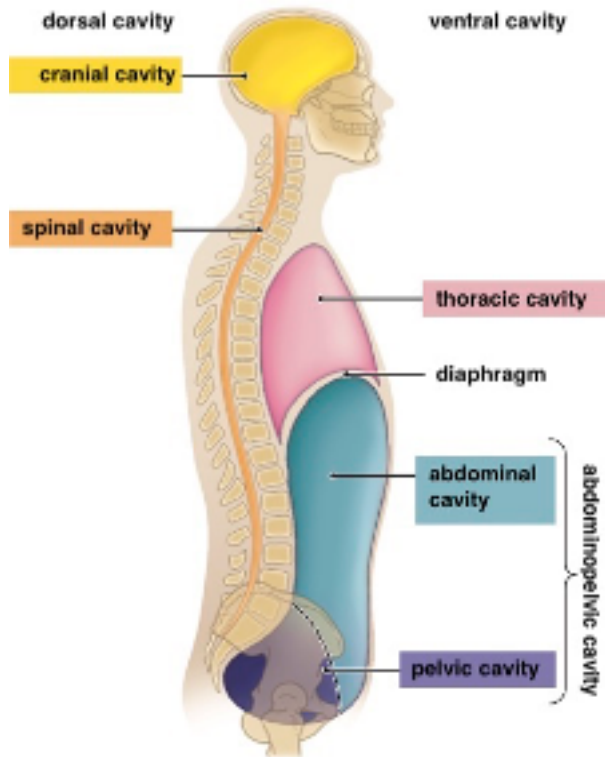
147. Labels: microvilli, nucleus, plasma membrane, ribosomes



148. Labels: anterior, inferior, lateral, medial, posterior, superior



149. Labels: abdominal cavity, abdominopelvic cavity, cranial cavity, diaphragm, dorsal cavity, pelvic cavity, spinal cavity, thoracic cavity, ventral cavity



Case Studies

Read the following case studies carefully. Complete the sentence with the correct term(s).

Case Study 1: Meningitis Discharge Summary

ADMITTING DIAGNOSIS: Meningitis, not otherwise specified. DISCHARGE DIAGNOSIS: Viral meningitis.

HISTORY OF PRESENT ILLNESS: The patient is a 3-year-old boy who presents with fever of 101, headache, photophobia, and vomiting. Two days prior to admission, he developed fever in the morning that progressed to a headache. On the following evening, he had decreased oral intake. He had never had any prior headaches. He denied neck stiffness, rashes, and mental status changes. He had positive mosquito bites, but no tick bites. He was seen at a local clinic and was found to have a positive rapid strep test. Otherwise, no sick contacts and no recent travel were reported. A lumbar puncture was performed in the emergency room, showing 159 white cells but no red cells. The cerebrospinal fluid showed protein of 24 and glucose of 81. CBC had a white blood cell count of 11.6, hemoglobin was 13, hematocrit 36, platelets 235 with 73 segs, 11 bands, and 12 lymphocytes.

PAST MEDICAL HISTORY: Asthma comes and goes with infectious triggers; diagnosed at 6 months. Pulmicort was taken this fall as well as albuterol, both via nebulizer. No hospitalizations or surgeries. Immunizations are up-to-date. Development is small for his age, but otherwise, he is on target developmentally.

BIRTH HISTORY: Full term. Delivered vaginally; no complications.

SOCIAL HISTORY: He lives with mother, father, and a 9-year-old sister. He has three cats at home.

FAMILY HISTORY: Asthma on his father's side. REVIEW OF SYSTEMS: As per history of present illness.

ADMITTING PHYSICAL EXAMINATION: Temperature 100.7, pulse 94, respiratory rate 24, blood pressure 106/52, weight 22.5 kg, height 119 cm. General appropriate, in no apparent distress, comfortable. Skin warm, dry, no rashes or lesions. HEENT showed head was mesocephalic, atraumatic. Pupils equal, round, reactive to light. Extraocular muscles are intact. Mucous membranes are moist and pink. Tympanic membranes are clear bilaterally. Neck has no lymphadenopathy; mildly increased stiffness with flexion. Chest is clear to auscultation bilaterally. Cardiac reveals a regular rate and rhythm, 2/6 systolic ejection murmur greatest at the left sternal border. Pulses are 2+ bilaterally. Abdomen is soft, nontender, and nondistended.

Normoactive bowel sounds. Genitalia normal; external genitalia circumcised. Musculoskeletal shows no joint stiffness and full range of motion in extremities. There is no lymphadenopathy. Neurologic exam is grossly intact with no focal deficits and no asymmetry.

HOSPITAL COURSE: On admission IV fluids were started. Tylenol was given for the headache as needed. Enterovirus PCR from CSF was sent. His headache and photophobia continued over the course of the first 24 hours. Temperature returned to normal. His oral intake was improving. Urine output was good. Enterovirus PCR came back positive. Culture showed no growth for 28 hours. Since he was doing well clinically, he was discharged home with his parents.

CONDITION AT DISCHARGE: Stable.

DISCHARGE MEDICATIONS: Tylenol as needed.

DISCHARGE ACTIVITY: As tolerated. DISCHARGE DIET: As before.

FOLLOW-UP: He is to schedule an appointment with his pediatrician within the week after discharge.

	Answers
150. A mesocephalic head is _____ an average size range.	<i>within</i>
151. The “head was atraumatic” means that the head _____.	<i>showed no signs of injury</i>
152. The patient is advised to see a pediatrician, a doctor who specializes in _____.	<i>the care and treatment of children</i>
153. The most correct definition of the word meningitis is _____.	<i>inflammation of the meninges</i>
154. The boy’s cerebrospinal fluid contained glucose. Glucose is a(n) _____.	<i>carbohydrate</i>
155. The boy’s cerebrospinal fluid contained blood cells. Blood is a type of _____.	<i>connective tissue</i>
156. The patient’s neurologic exam checked the function of a patient’s _____.	<i>nervous system</i>
157. The patient’s urine output was good. This suggests that his _____ system was functioning normally.	<i>urinary</i>
158. Examination of the patient’s digestive system revealed that it was functioning normally. The system could be described as being in a state of _____.	<i>homeostasis</i>

Case Study 2: Exploratory Laparotomy and Splenectomy

PREOPERATIVE DIAGNOSIS: Blunt abdominal trauma.

POSTOPERATIVE DIAGNOSIS: Splenic laceration and hemoperitoneum.

PROCEDURE PERFORMED: Exploratory laparotomy and splenectomy.

FINDINGS

1. Hemoperitoneum, about 1000 cc.
2. Splenic laceration, grade 3.

DESCRIPTION OF PROCEDURE: The patient was taken to the operating room where a Foley bladder catheter was placed using a sterile technique. The patient had two large-bore IVs inserted and was given high-rate boluses of fluids and blood. The abdomen and upper thighs were prepped from the nipples to the knees. The patient was sterilely draped. The anesthesiologist then put the patient to sleep, and the incision was made nearly simultaneously. The blood pressure did remain stable with the administration of blood.

The subcutaneous tissues were opened sharply to the fascia, which was also opened sharply. The peritoneum was grasped and carefully opened. The incision was opened along its length, which extended from the xiphoid to the infraumbilical region. A large amount of blood, mainly in the left hemiabdomen, was evacuated. Packs were placed in all four quadrants, starting with the left upper quadrant and then the right upper quadrant. There was a large gush of blood in the right upper quadrant, somewhat concerning for a liver injury. Once all four quadrants were packed with lap sponges and the patient remained stable, the packs were removed initially from the lower quadrants, revealing no injuries but adhesions and scarring around the cecum were noted. Then packs were removed from around the liver, and careful inspection of the right and left lobes of the liver revealed no injury.

The packs were gradually removed from the left upper quadrant, and it was found that the spleen was indeed lacerated in the lower half, fairly significantly. This was definitely the source of the bleeding. The peritoneal attachments were quickly divided bluntly. The hilum was isolated. The splenic vessels were divided between straight clamps, and the spleen was removed. Packs were held over the area until hemodynamic stability could again be confirmed. The blood vessels were then controlled with suture ligatures of 0 Vicryl. Short gastric vessels were also ligated. A pack was placed, and again the rest of the abdomen was explored. The adhesions in the right lower quadrant were divided so that the omentum could be freed up. Once this was done, the small bowel was run from the ligament of Treitz to the cecum, and no injury was noted. The entire colon was inspected, and again no injury was noted. The left upper quadrant was again inspected, and another 3-0 silk suture ligature was used to complete the hemostasis. Hemostasis was good. An NG tube was positioned and noted to be in good location. All of the packs were removed.

The fascia was closed with running 0 Vicryl suture. Given the large amount of lap sponges used, abdominal films were taken, which revealed no evidence of retained lap sponges. Subcutaneous tissues were irrigated, and the skin was closed with staples. The patient tolerated the procedure well and was transported to the ICU in good condition.

	Answers
159. A laparotomy is a(n) _____	<i>incision through the abdominal wall</i>
160. IV stands for intravenous. This medical term means _____	<i>within a vein</i>
161. A medical specialist responsible for administering sedatives and pain-blocking medications is called a(n) _____	<i>anesthesiologist</i>
162. The word infraumbilical means _____ the belly button.	<i>below</i>
163. The word hemiabdomen refers to _____	<i>half of the abdominal cavity</i>
164. The liver is located in the _____	<i>RUQ</i>
165. When surgeons are operating on a spleen, they are working in the _____ region of the abdominal cavity.	<i>left hypochondriac</i>
166. The liver and spleen are located in the _____ cavity.	<i>ventral</i>
167. The colon is an organ that belongs to the _____ system	<i>digestive</i>
168. The word subcutaneous means _____	<i>the skin</i>