



Buy Course:- [Diagnostic Ultrasound: Examination Techniques, Pathology And Physics](#)

Test Questions

(hint: print questions & mark answers before starting online test)

Chapter 1

1. Ultrasound is the term used to describe sound of frequencies above _____ Hertz (Hz), beyond the range of human hearing.

- (A): 20
- (B): 200
- (C): 2,000
- (D): 20,000

2. Frequencies of _____ megahertz (MHz) are typical for diagnostic ultrasound.

- (A): 1-30
- (B): 2-20
- (C): 3-40
- (D): 4-50

3. Diagnostic ultrasound imaging depends on the computerized analysis of reflected _____, which non-invasively build up fine images of internal body structures.

- (A): ionizing radiation
- (B): ultrasound waves
- (C): magnetic resonance
- (D): none of the above

4. _____ are usually made of thin discs of an artificial ceramic material such as lead zirconate titanate.

- (A): Ultrasound transducers
- (B): MRI transducers
- (C): CT transducers
- (D): X ray transducers

5. _____ is a vibration transmitted through a solid, liquid or gas as mechanical pressure waves that carry kinetic energy.

- (A): X ray
- (B): Light
- (C): Sound
- (D): Radioisotope

6. The _____ of sound depends on the density and compressibility of the medium.

- (A): velocity
- (B): mass
- (C): weight
- (D): atomic number

7. The _____ of ultrasound influences the resolution of the images that can be obtained.

- (A): wavelength
- (B): mass
- (C): weight
- (D): atomic number

8. Which of the following are forms of interaction between ultrasound and the medium?

- (A): reflection
- (B): scattering

- (C): diffraction and refraction
- (D): all of the above

9. The three-dimensional ultrasound field from a focused transducer can be described as a beam_____.

- (A): color
- (B): length
- (C): shape
- (D): brightness

10. The form and especially the diameter of the beam strongly influence the lateral resolution and thus the quality of the ultrasound image.

- (A): True
- (B): False

11. _____ is defined as the minimum distance between two objects that are still distinguishable.

- (A): Spatial resolution
- (B): Mass
- (C): Weight
- (D): Wavelength

12. _____ is the usual term for the reflected or back-scattered parts of the emitted ultrasound pulses that reach the transducer.

- (A): Color
- (B): Length
- (C): Echo
- (D): Brightness

13. The Doppler effect was originally postulated by which of the following Austrian scientist in relation to the colors of double stars?

- (A): Sigmund Freud
- (B): Nikola Tesla
- (C): Wilhelm Röntgen
- (D): Christian Doppler

14. _____ is a special B-scan technique that can be used to show movement without relying upon the Doppler effect.

- (A): B-flow
- (B): X-flow
- (C): Y-flow
- (D): Z-flow

15. Doppler frequencies within the range \pm one half the pulse repetition frequency, known as the _____.

- (A): dose limit
- (B): beam limit
- (C): Nyquist limit
- (D): none of the above

16. The combination of B-scan with color Doppler and spectral Doppler is called the _____.

- (A): single technique
- (B): triplex technique
- (C): double technique
- (D): none of the above

17. The contrast agents in Ultrasound administered intravenously into the systemic circulation were initially used to obtain _____.

- (A): bone mineral data
- (B): soft tissue sample

- (C): stronger signals from blood flow
- (D): none of the above

18. The _____ is displayed in real time as an indication of the maximum temperature rise that may occur in a tissue during a prolonged ultrasound examination.

- (A): thermal index (TI)
- (B): therapeutic index
- (C): toxic index
- (D): statistical index

Chapter 2

19. The ultrasound examination is usually carried out with the patient in the _____.

- (A): oblique position
- (B): supine position
- (C): lateral position
- (D): none of the above

20. A _____ is necessary to ensure good contact between the transducer and the skin during ultrasound.

- (A): coupling agent
- (B): contrast agent
- (C): patient immobilization
- (D): sedation

21. Generally, a modern ultrasound equipment consists of 'all-round scanners' that includes a curved array for the range 3–5 MHz and a linear array for the range greater than 5 MHz to 10 MHz

- (A): True
- (B): False

22. An advantage of ultrasound is that the patient's _____ can carry out the examination, and this provides a good opportunity to talk to the patient about his or her problem.

- (A): medical assistant
- (B): doctor
- (C): lab technologist
- (D): none of the above

23. As a rule, which of the following should be prepared for each ultrasound examination?

- (A): verbal report
- (B): written report
- (C): pictorial documentation
- (D): both B and C

24. An evaluation of which of the following is based on the known normal anatomy of an organ?

- (A): presence
- (B): position
- (C): size
- (D): all of the above

25. Increased _____ of ultrasound in an organ may indicate pathological alterations, such as fibrosis.

- (A): signal
- (B): timing
- (C): attenuation
- (D): none of the above

Chapter 3

26. _____ is defined as any diagnostic or therapeutic procedure performed under ultrasound guidance for any tissue or organ that is visualized by ultrasound.

- (A): Interventional ultrasound

- (B): Radiography
- (C): Endoscopy
- (D): MRI

27. Therapeutic procedures in ultrasound include which of the following?

- (A): contrast injections
- (B): radiation therapy
- (C): drainage of fluid collections by needle or catheter
- (D): radioisotopes injections

28. Before any ultrasound-guided procedure is performed, the patient's informed _____ should be obtained.

- (A): insurance card
- (B): consent
- (C): life insurance policy
- (D): ID

29. Ultrasound-guided diagnostic procedures include which of the following?

- (A): cytological sampling
- (B): tissue sampling
- (C): fluid collection by needle aspiration
- (D): all of the above

30. Although sonography cannot be used to study bone lesions, ultrasound images are clear enough to perform an ultrasound-guided biopsy on some patients with lytic lesions characterized by disruption of the cortical structure.

- (A): True
- (B): False

31. Which of the following procedure is done under ultrasound guidance that reduces the risks for lung or heart injury, and is much safer and easier than the previously used blind puncture technique?

- (A): Pleurocentesis
- (B): Paracentesis
- (C): Pericardiocentesis
- (D): none of the above

32. Abdominal _____ is the first line of treatment for infected or symptomatic fluid collection.

- (A): biopsy
- (B): abscess drainage
- (C): chemotherapy
- (D): radiation therapy

33. During Seldinger technique a _____ gauge needle is inserted into the collection site and a guide wire passed through the needle.

- (A): 18 to 20
- (B): 25 to 30
- (C): 35 to 40
- (D): 40 to 50

Chapter 4

34. Which of the following are the indications for ultrasonography of the neck?

- (A): thyroid gland diseases and suspected parathyroidal adenoma
- (B): malignant lymphoma, staging and follow-up
- (C): palpable masses and abscesses
- (D): all of the above

35. The thyroid is shaped like the letter _____, with an oval lobe on each side of the trachea connected by the isthmus.

- (A): H

- (B): X
- (C): Y
- (D): Z

36. The number of the lymph nodes is especially high in the neck and high-frequency ultrasound frequently demonstrates normal lymph nodes, which are usually _____ shape, with a maximum diameter of 8 mm.

- (A): rectangular
- (B): square
- (C): oval
- (D): triangular

37. Which of the following are important as anatomical landmarks and serve as a reference point for evaluating the echo pattern of the thyroid?

- (A): ribs
- (B): diaphragm
- (C): neck muscles
- (D): lungs

38. Papillary and follicular carcinomas are the commonest _____ carcinomas.

- (A): thyroid
- (B): brain
- (C): urinary
- (D): prostate

39. Which of the following is/are primary tumors of the neck?

- (A): Lipomas and lipofibromas
- (B): Glomangioma
- (C): Malignant tumors
- (D): all of the above

Chapter 5

40. Although the sonographic image does not provide a complete overview of the chest, it is useful for which of the following indications?

- (A): chest pain
- (B): dyspnea and fever
- (C): inflow congestion
- (D): all of the above

41. Ultrasound examination of the chest wall and the axilla and supraclavicular regions generally requires a linear probe with frequencies of _____.

- (A): 0–1 MHz
- (B): 5–8 MHz
- (C): 15–25 MHz
- (D): 18–30 MHz

42. It is surprising that rib fractures are diagnosed twice as frequently by sonography than by chest radiography.

- (A): True
- (B): False

43. What are the direct sonographic signs of rib and sternum fractures at the site of pain?

- (A): gap
- (B): step
- (C): dislocation
- (D): all of the above

44. In contrast to X-ray, ultrasound can detect pleural effusions of as little as ____ ml laterodorsally to the angle between the chest wall and the diaphragm, with patients in either a standing or sitting

position.

- (A): 5
- (B): 15
- (C): 25
- (D): 30

45. All of the following are sonographic findings in tuberculosis EXCEPT:

- (A): pleural effusion
- (B): fragmentation of visceral pleura
- (C): subpleural infiltrations of various forms
- (D): calcification of aorta

Chapter 6

46. In ultrasound, the linear array transducers of _____ are best suited for abdominal wall and superficial structures.

- (A): 0–1 MHz
- (B): 5–10 MHz
- (C): 25–35 MHz
- (D): 40–50 MHz

47. The abdominal wall is examined systematically in longitudinal and transverse scans, starting in the cranial part below the _____ from the midline.

- (A): pelvis
- (B): trachea
- (C): clavicle
- (D): ribs

48. Which of the following forms the anterolateral abdominal wall?

- (A): Skin
- (B): Subcutaneous tissue
- (C): Muscles and the parietal peritoneum
- (D): all of the above

49. The _____ forms the 'roof' of the abdomen and appears as a thin, echo-poor layer or structure, but only in those parts that do not border the air-containing lung.

- (A): diaphragm
- (B): liver
- (C): spleen
- (D): gallbladder

50. The abdominal cavity is separated by _____ into different but communicating spaces and recesses, which are important for diagnosis and therapy.

- (A): bones
- (B): gray matters
- (C): chambers
- (D): ligaments

51. The abdominal _____ is easily visualized as a nearly echo-free structure, with strong wall echoes running in front of the vertebral column from the aortic hiatus to the bifurcation.

- (A): femoral artery
- (B): spinal cord
- (C): aorta
- (D): jugular vein

52. The echo pattern of hematomas depends on their stage: bleeding into the tissue initially causes an echo-rich, ' _____ ' pattern, with irregular, blurred margins.

- (A): cloud-like
- (B): star-like
- (C): circular

(D): none of the above

53. In ascites, the amounts of fluid greater than _____ ml can be demonstrated with ultrasound.

- (A): 2
- (B): 4
- (C): 5
- (D): 10

54. Peritoneal tuberculosis is a common extrapulmonary manifestation that is seen in advanced stages of _____ infection.

- (A): HIV
- (B): brain
- (C): liver
- (D): gallbladder

55. A _____ in the vena cava usually originates from a thrombosis of a feeding vein.

- (A): tumor
- (B): calcification
- (C): thrombus
- (D): stone

56. During ultrasound findings, which of the following represents echo-poor mass in front of the vessels and smooth, sharp contour connection to the kidneys?

- (A): Malignant lymphoma
- (B): Horseshoe kidney
- (C): Aneurysm
- (D): Retroperitoneal fibrosis

Chapter 7

57. Which of the following are indications for ultrasonography of the liver?

- (A): hepatomegaly and suspected liver abscess
- (B): jaundice and ascites
- (C): suspected metastases in the liver and liver mass
- (D): all of the above

58. Real-time imaging of the liver is performed with the patient in which of the following position?

- (A): supine
- (B): left-oblique
- (C): left-lateral decubitus
- (D): all of the above

59. The echo texture of the normal liver parenchyma is homogeneous.

- (A): True
- (B): False

60. Liver anatomy is based on its _____.

- (A): bone structure
- (B): muscle mass
- (C): vasculature
- (D): none of the above

61. _____ is the general term for inflammatory and infectious disease of the liver, of which there are many causes.

- (A): Hepatitis
- (B): Pancreatitis
- (C): Gastritis
- (D): Nephritis

62. In acute hepatitis, the liver parenchyma may have diffusely decreased echogenicity, with

accentuated brightness of the portal triads, known as '_____.'

- (A): cloud like pattern
- (B): neoplasm
- (C): periportal cuffing
- (D): none of the above

63. Hepatic candidiasis usually occurs in immunocompromised hosts and is transmitted via the _____.

- (A): neurons
- (B): bloodstream
- (C): lungs
- (D): none of the above

64. Which of the following are sonographic features of diffuse fatty liver?

- (A): bright liver with greater echogenicity than the kidney
- (B): decreased portal vein wall visualization
- (C): poor penetration of the posterior liver and hepatomegaly
- (D): all of the above

65. The presence of ascites, hepatosplenomegaly and collateral circulation are causes of _____.

- (A): jaundice
- (B): pancreatitis
- (C): gastritis
- (D): nephritis

66. Which of the following sonographic finding suggests malignant portal vein thrombi in patients with cirrhosis?

- (A): expansion of involved portal vein
- (B): a periportal tumor connected to the thrombi
- (C): a pulsatile flow signal within the thrombi
- (D): all of the above

67. _____ is used more often than sonography to evaluate the presence and extent of liver laceration during trauma, while sonography is usually used to monitor the pattern of healing.

- (A): MRI
- (B): Nuclear Medicine
- (C): CT
- (D): Radiography

Chapter 8

68. What are the indications for ultrasonography of the gallbladder and bile ducts?

- (A): pain in the right upper abdomen
- (B): palpable right upper abdominal mass
- (C): recurrent symptoms of peptic ulcer
- (D): all of the above

69. Ultrasound of gallbladder/bile ducts exams for children and thin adults, use a _____ transducer.

- (A): 5-MHz
- (B): 15-MHz
- (C): 25-MHz
- (D): 35-MHz

70. For gallbladder/bile ducts ultrasound examination, the patient should take nothing by mouth for _____ before the examination.

- (A): 16 hours
- (B): 24 hours
- (C): 8 hours

(D): 48 hours

71. The biliary system consists of which of the following?

- (A): right and left hepatic ducts
- (B): common hepatic and bile duct
- (C): gallbladder and the cystic duct
- (D): all of the above

72. The intrahepatic ducts are considered normal if their diameter is 2 mm or less and not more than _____% of the diameter of the adjacent portal vein.

- (A): 40
- (B): 60
- (C): 78
- (D): 86

73. The gallbladder is an elongated, pear-shaped sac lying below the _____.

- (A): liver
- (B): heart
- (C): spleen
- (D): pancreas

74. The typical sonographic appearance of gallstones is a mobile intraluminal echogenic focus with an associated _____.

- (A): blood flow
- (B): calcium deposit
- (C): acoustic shadow
- (D): none of the above

75. When the gallbladder is filled with small stones or with a single large stone, the gallbladder fossa appears as _____ echogenic lines.

- (A): one
- (B): two
- (C): three
- (D): four

76. _____ are the single most important finding in cases of acute calculous cholecystitis.

- (A): Gallstones
- (B): Malignant tumor
- (C): Mass
- (D): Pus

77. In _____% of patients with acute cholecystitis, gangrenous changes develop, which are characterized pathologically by intramural hemorrhage, necrosis and microabscess formation.

- (A): 20-30
- (B): 40-55
- (C): 60-70
- (D): 75-89

78. Gallbladder perforation occurs in _____ of cases and requires immediate cholecystectomy or percutaneous cholecystostomy because of the high mortality rate (greater than 20%).

- (A): 0%
- (B): 5-10%
- (C): 40-50%
- (D): 70%

79. _____ is a rare infection caused by gas-forming bacteria, such as *Escherichia coli* or *clostridia*, within either the wall or lumen of the gallbladder.

- (A): Gallbladder perforation
- (B): Acute acalculous cholecystitis

- (C): Emphysematous cholecystitis
- (D): none of the above

80. Calcification of the gallbladder wall develops as a result of chronic inflammation can cause which of the following?

- (A): porcelain gallbladder
- (B): marble gallbladder
- (C): translucent gallbladder
- (D): none of the above

81. The neoplastic gallbladder polyps can be divided into which of the following types?

- (A): adenomas
- (B): adenocarcinomas
- (C): lipomas and leiomyomas
- (D): all of the above

82. Cholesterol polyps account for _____ of all polypoid gallbladder lesions.

- (A): 0%
- (B): 10%
- (C): 15%
- (D): 50–60%

83. Gallbladder carcinoma occurs mainly in the _____ and is three times commoner in women than in men.

- (A): elderly
- (B): infants
- (C): young children
- (D): teenagers

Chapter 9

84. Which of the following are the indications for ultrasonography of the pancreas?

- (A): midline upper abdominal pain, acute or chronic
- (B): persistent fever, especially with upper abdominal tenderness
- (C): direct abdominal trauma, particularly in children
- (D): all of the above

85. It is best to perform an ultrasound examination of the pancreas on patients who have not fasted overnight.

- (A): True
- (B): False

86. The goal of every pancreatic ultrasound examination is to visualize the gland in its entirety.

- (A): True
- (B): False

87. The pancreas is a nonencapsulated, retroperitoneal structure that lies in the anterior pararenal space between the _____ loop and the splenic hilum over a length of 12.5–15 cm.

- (A): gastric
- (B): duodenal
- (C): large intestine
- (D): esophagus

88. The _____ vessels run posterior to the neck of the pancreas, separating the head from the body.

- (A): inferior mesenteric
- (B): lower mesenteric
- (C): superior mesenteric
- (D): none of the above

89. With aging and obesity, the pancreas becomes more echogenic as a result of the presence of _____.

- (A): stones
- (B): calcium deposits
- (C): fatty infiltration
- (D): none of the above

90. Acute inflammation of the pancreas has numerous causes; however, acquired conditions such as _____ abuse and biliary calculi account for the majority of cases.

- (A): alcohol
- (B): drug
- (C): pain killer
- (D): none of the above

91. _____ is caused by progressive, irreversible destruction of the pancreas by repeated bouts of mild or subclinical pancreatitis resulting from high alcohol intake or biliary tract disease.

- (A): Diabetes
- (B): Nephritis
- (C): Chronic pancreatitis
- (D): None of the above

92. Pancreatic carcinoma is the _____ leading cause of death from cancer among both males and females in western countries.

- (A): second
- (B): third
- (C): fourth
- (D): fifth

93. Cystic neoplasms represent approximately 10–15% of pancreatic cysts and only about _____% of pancreatic malignancies.

- (A): 1
- (B): 10
- (C): 25
- (D): 40

Chapter 10

94. An enlarged spleen is called _____.

- (A): hepatomegaly
- (B): splenomegaly
- (C): pericarditis
- (D): gastritis

95. Patients should fast for _____ hours before the spleen examination.

- (A): 1
- (B): 4
- (C): 6
- (D): 8

96. In ultrasound echo pattern, the normal spleen has a uniform homogeneous texture and is slightly less echogenic than the liver.

- (A): True
- (B): False

97. The _____ is the reference point to ensure correct identification of the spleen and should be used as the entry point for the splenic vessels.

- (A): 12th rib
- (B): sternal notch
- (C): splenic hilus
- (D): none of the above

98. Which of the following may be mistaken for splenic lesions during ultrasound examination?

- (A): a kidney lesion
- (B): the tail of the pancreas
- (C): adrenal tumors or the stomach
- (D): all of the above

99. When the spleen is longer than _____ cm from pole to pole, splenomegaly is present.

- (A): 5
- (B): 6
- (C): 9
- (D): 12

100. Which of the following tropical disease can cause **enlarged spleen**?

- (A): malaria
- (B): trypanosomiasis
- (C): hepatitis
- (D): both A and B

101. Which of the following are ultrasound findings in a splenic abscess?

- (A): gas & subcapsular extension
- (B): progressive enlargement of the lesion
- (C): collections of extracapsular fluid
- (D): all of the above

102. The commonest malignant neoplasms involving the spleen are _____, which may produce either focal hypoechoic masses or diffuse enlargement of the spleen.

- (A): lymphomas
- (B): cysts
- (C): polyps
- (D): none of the above

103. If the splenic vein appears large on ultrasound and remains larger than _____ mm in diameter on normal respiration, portal hypertension should be suspected.

- (A): 0.5
- (B): 1
- (C): 1.5
- (D): 10

104. Which of the following are the advantages of ultrasound in assessing splenic trauma?

- (A): speed
- (B): portability with no delay of therapeutic measures
- (C): absence of ionizing radiation
- (D): all of the above

Chapter 11

105. High-frequency transducers of _____ MHz, linear or curved array of good quality are needed for a detailed ultrasound examination of the gastrointestinal tract.

- (A): 0-1
- (B): 1-1.5
- (C): 5-7.5
- (D): none of the above

106. Distinguishing the anatomical layers of the wall of the gastrointestinal tract depends on the frequency and the quality of the transducer on the one hand and, on the other, on the _____ of the layers.

- (A): thickness
- (B): type
- (C): length

(D): none of the above

107. There are no clear indications for ultrasonography of the esophagus for pathological conditions, because the major part is not accessible to transcutaneous ultrasound.

- (A): True
- (B): False

108. Which of the following are the indications for ultrasonography of the stomach?

- (A): pain in the upper abdomen and gastroscopy
- (B): dysphagia and vomiting
- (C): palpable mass in the upper abdomen
- (D): all of the above

109. Which of the following can be administered intravenously to stop peristalsis and to achieve good distension of the stomach during ultrasound examination?

- (A): scopolamine N-butyl bromide (Buscopan®)
- (B): barium sulfide
- (C): gastrografin
- (D): iodine-50

110. Absence of the esophageal-gastric junction and a digestive tract of diameter greater than 16 mm at the level of the diaphragm are regarded as sonographic symptoms of a _____.

- (A): hepatomegaly
- (B): hiatus hernia
- (C): pericarditis
- (D): gastritis

111. An abnormal distribution of the food in the stomach is characteristic for which of the following disorder?

- (A): Acid reflux
- (B): Diabetes
- (C): *Functional dyspepsia*
- (D): None of the above

112. _____ may cause swelling of the mucosa and submucosa and thus thickening of the gastric wall.

- (A): hepatomegaly
- (B): splenomegaly
- (C): pericarditis
- (D): gastritis

113. Gastric ulcers are usually situated on the _____ of the distal part of the stomach.

- (A): small curvature
- (B): body
- (C): fundus
- (D): none of the above

114. Demonstration of larger vessels in the base of a Duodenal ulcer by the Doppler technique indicates a high risk for _____.

- (A): infection
- (B): inflammation
- (C): bleeding
- (D): none of the above

115. The early gastric carcinomas, stage 1 tumors can be visualized with the use of which of the following method?

- (A): high resolution transducer
- (B): water-contrast
- (C): endoscopic ultrasound

(D): all of the above

116. Malignant lymphomas are extremely echo _____ and often appear to be almost echo free.

- (A): rich
- (B): sensitive
- (C): poor
- (D): none of the above

117. Generally, ultrasound is not suitable for diagnosing carcinomas of the large bowel, as only advanced tumors can be visualized.

- (A): True
- (B): False

118. _____ is characterized by a granulomatous inflammation that affects all parts of the gastrointestinal tract, but usually the distal ileum and parts of the colon.

- (A): Hepatomegaly
- (B): Crohn disease
- (C): Ulcerative colitis
- (D): Gastritis

119. Ultrasound demonstrates a tubular structure with a blind end and a diameter greater than _____ mm in cases of appendicitis.

- (A): 8
- (B): 18
- (C): 28
- (D): 38

120. What is the consequence of appendicitis?

- (A): chemotherapy
- (B): radiation therapy
- (C): appendectomy
- (D): organ transplant

Chapter 12

121. Which of the following modality is easier to use in adrenal glands examination?

- (A): MRI
- (B): CT scans
- (C): Radiography
- (D): Ultrasound

122. In ultrasound, the adrenals are scanned in a lateral oblique plane through the upper pole of the _____.

- (A): kidneys
- (B): liver
- (C): spleen
- (D): pancreas

123. In neonates, the adrenal glands may be one third the size of the kidneys and are relatively easy to see during ultrasound exam.

- (A): True
- (B): False

124. Adrenal infections are commonly due to which of the following?

- (A): diabetes
- (B): hepatitis
- (C): tuberculosis or histoplasmosis
- (D): none of the above

125. Metastatic adrenal tumors may be small and not visible on ultrasound; they are

often heterogeneous due to _____ and may be difficult to distinguish from upper-pole renal tumors.

- (A): calcification
- (B): fluid accumulation
- (C): necrosis
- (D): none of the above

126. Adrenal cysts are often misdiagnosed as _____ cysts.

- (A): ovarian
- (B): duodenal
- (C): renal
- (D): none of the above

Chapter 13

127. Which of the following are indications for ultrasonography of the kidneys?

- (A): renal or ureteric pain
- (B): non-functioning kidney on urography
- (C): recurrent urinary tract infections
- (D): all of the above

128. Ultrasound cannot be used to assess renal function.

- (A): True
- (B): False

129. The upper pole of the left kidney can usually be seen by using the spleen as an acoustic window, but in this position the lower pole is often obscured by _____.

- (A): ribs
- (B): diaphragm
- (C): bowel gas
- (D): none of the above

130. _____ can be used to assess perfusion throughout the kidney.

- (A): Color flow Doppler
- (B): Spectral Doppler
- (C): Ultrasound contrast agents
- (D): None of the above

131. The _____ are rounded triangular structures of lower echo density than the cortex and are evenly arranged around the kidney.

- (A): renal capsules
- (B): ureters
- (C): medullary pyramids
- (D): none of the above

132. Normal adult kidneys measure _____ cm in length.

- (A): 0-1
- (B): 1-1.5
- (C): 9-12
- (D): 30-50

133. The renal arteries run retroperitoneally from the _____ to the renal hila.

- (A): femoral artery
- (B): aorta
- (C): superior vena cava
- (D): inferior vena cava

134. In duplex kidney, the renal pelvis and, to a certain extent, the ureters are duplicated.

- (A): True
- (B): False

135. Which of the following is a small and non-functioning kidney?
(A): Horseshoe kidney
(B): Ptotic kidney
(C): Duplex kidney
(D): Dysplastic kidney
136. Which of the following condition involves fusion of the lower poles of the two kidneys?
(A): Horseshoe kidneys
(B): Ptotic kidneys
(C): Dysplastic kidneys
(D): Pelvic kidneys
137. Horseshoe kidneys are more prone to which of the following?
(A): trauma and renal calculi
(B): pelviureteric junction obstruction
(C): Wilms tumors in children
(D): all of the above
138. Which of the following kidney may be seen as a retrocardiac mass on a chest X-ray, but not visible in ultrasound?
(A): Thoracic kidney
(B): Ptotic kidney
(C): Horseshoe kidney
(D): Pelvic kidney
139. A single functioning kidney will hypertrophy to compensate in which of the following population?
(A): men
(B): women
(C): children and young adults
(D): elderly
140. Pyelonephritis is an infection involving which of the following?
(A): adrenal glands
(B): renal parenchyma
(C): urinary bladder
(D): ureters
141. Emphysematous pyelonephritis is an uncommon, life-threatening condition, which is more frequent in patients with _____.
(A): asthma
(B): high blood pressure
(C): diabetes
(D): none of the above
142. Which of the following term is used to describe the progressive renal failure that occurs in HIV infection and AIDS?
(A): HIV-associated hepatomegaly
(B): HIV-associated splenomegaly
(C): HIV-associated pericarditis
(D): HIV-associated nephropathy
143. On ultrasound, renal scars appear as indentations on the renal surface that can be due to which of the following?
(A): previous reflux
(B): infection
(C): surgery or trauma
(D): all of the above

144. Which of the following tumors occur in boys under the age of 4 years, girls under the age of 5 years and women aged between 40–60 years?

- (A): Multilocular cystic tumors
- (B): Oncocytomas
- (C): Angiomyolipomas
- (D): Small hyperechoic cortical lesions

145. Nephrocalcinosis is _____ in the cortex or medulla.

- (A): fluid
- (B): pus
- (C): calcification
- (D): blood

146. Renal artery stenosis may be suspected in patients with which of the following?

- (A): severe hypertension
- (B): a bruit heard over the renal arteries
- (C): combined hypertension and renal impairment
- (D): all of the above

Chapter 14

147. The urinary bladder can be properly assessed only when it is _____ during ultrasound examination.

- (A): empty
- (B): full
- (C): half empty
- (D): none of the above

148. For patients with urinary catheters, the catheter should be clamped _____ hour before the ultrasound examination, and the patient should drink 1 liter of fluid.

- (A): 1
- (B): 2
- (C): 3
- (D): 4

149. For urinary bladder sonography, the patient should be in the _____ position.

- (A): prone
- (B): lateral
- (C): supine
- (D): oblique

150. The thickness of the normal bladder wall is about _____ mm for a full bladder and 5 mm for a non-distended bladder.

- (A): 3
- (B): 13
- (C): 23
- (D): 30

151. Assessment of urinary bladder _____ is the commonest reason for an ultrasound study of the bladder.

- (A): filling
- (B): emptying
- (C): biopsy
- (D): none of the above

152. _____ is an inflammation of the bladder.

- (A): Cystitis
- (B): Pancreatitis
- (C): Gastritis
- (D): Nephritis

153. Fungal cystitis occurs in immunocompromised patients and the diagnosis is made by finding _____ in the urine.

- (A): stone
- (B): pus
- (C): mycelia
- (D): none of the above

154. Ultrasound is a cheaper and less invasive alternative to cystoscopy in surveillance for tumors.

- (A): True
- (B): False

155. Which of the following is an outpouching of the bladder mucosa through a defect in the muscular layer of the bladder wall?

- (A): Calculi
- (B): Patent urachus
- (C): bladder diverticulum
- (D): urachal cyst

156. Which of the following is the preferred mode of imaging the urethra?

- (A): ultrasound
- (B): contrast urethrography
- (C): MRI
- (D): CT

157. _____ ultrasound is necessary for the diagnosis of prostate cancer.

- (A): Transrectal
- (B): Contrast
- (C): Biopsy
- (D): none of the above

Chapter 15

158. Scrotal masses that are clinically suspected to be intratesticular or that are of indeterminate position are an absolute indication for an ultrasound scan.

- (A): True
- (B): False

159. The epididymis is divided into which of the following parts?

- (A): head
- (B): body
- (C): tail
- (D): all of the above

160. _____ is a condition in which the testis twists, resulting in obstruction of the spermatic artery and vein.

- (A): Schistosomiasis
- (B): Tuberculous epididymo-orchitis
- (C): Testicular torsion
- (D): Bacterial epididymo-orchitis

161. Which of the following are ultrasound appearances of testicular atrophy?

- (A): the testis are small
- (B): an inhomogeneous parenchymal texture
- (C): irregular hyperechoic and hypoechoic areas
- (D): all of the above

Chapter 16

162. _____ is defined as a sudden onset of severe abdominal pain connected with tenderness, visceral dysfunction and possibly delayed circulatory decompensation.

- (A): Acute abdomen
- (B): Acute headache
- (C): Chronic pain
- (D): none of the above

163. During abdominal ultrasound, which of the following features to be looked at for spleen?

- (A): abscess
- (B): infarction
- (C): rupture
- (D): all of the above

164. Ultrasound is useful as a first-level imaging modality for patients with HIV infection, particularly for examination of the abdomen.

- (A): True
- (B): False