

## CHAPTER 1: OVERVIEW AND PRINCIPLES OF DIAGNOSTIC IMAGING

1. The first recorded diagnostic use of x-rays was in 1896.  
A True B False
2. Radiographic ——— refers to the degree of blackness of a film.  
A density B contrast C opaqueness D scatter
3. The RIS (——— information system) is used for scheduling examinations, communicating clinical data to the radiologists.  
A radon B regional C roentgen D radiology
4. Barium sulfate suspensions may be administered either by mouth (———) or by rectum (retrograde).  
A antegrade B axialgrade C postgrade D axillarygrade
5. Myelography is performed by inserting a needle between the ——— of lumbar vertebrae and entering the subarachnoid space.  
A transverse processes B superior articular facets C spinous processes D pedicles
6. The half-life of an element is the time necessary for its degradation to ——— of its original activity.  
A one-eighth B one-half C one-tenth D one-sixteenth
7. ——— emission tomography (PET) uses cyclotron- or generator-produced isotopes.  
A Positive B Peripheral C Positron D Percutaneous
8. In MR, tissues high in hydrogen, such as fat or cartilage, have high signal intensity and appear:  
A dark grey B white C black D in a range of colors
9. Ultrasound is an operator-dependent modality, and a high degree of technical skill is required to perform state-of-the-art examinations.  
A True B False
10. In ———, imaging (x-rays) influenced the management of 1 patient in 12.  
A 1950 B 1940 C 1960 D 1970
11. In 1993, the American ——— of Radiology (ACR) formed the ACR Task Force on Appropriateness Criteria.  
A Cooperative B Consortium C College D Conference

## CHAPTER 2: RADIOGRAPHIC CONTRAST AGENTS

12. For MR arthrography, a very dilute mixture of Gd (———) is used because of its intense paramagnetic effect.  
A 2.4% B 0.4% C 3% D 7%
13. Nephrogenic ——— fibrosis (NSF) is a rare and progressive fibrosing syndrome, involving the skin, joints, eyes, and internal organs.  
A spinal B string C supportive D systemic

## CHAPTER 3: INTERVENTIONAL RADIOLOGY

14. The vast majority of conventional arteriograms are performed by accessing the common femoral artery with an ——— needle.  
A 25G to 27G B 18G to 21G C 21G to 25G D 27G to 29G
15. Digital ——— angiography (DSA) is typically used to improve contrast resolution.  
A sectional B short C subtraction D stereotactic

16. Acute mesenteric ischemia is characterized by abdominal pain out of proportion to physical findings in combination with bloody diarrhea.  
 A True B False
17. ——— is the most common etiology of stenoses or occlusions leading to claudication.  
 A High blood pressure B An enlarged heart C Chronic bowel syndrome D Atherosclerosis
18. An ——— vena cava (IVC) filter may be placed in patients with DVT or PE who have a contraindication for anticoagulation.  
 A inguinal B intravenous C inferior D internal
19. A post-embolization syndrome (nausea, vomiting, pain, and ———) often occurs following uterine artery embolizations.  
 A marked dehydration B diffuse rash C high fever D low-grade fever

## CHAPTER 4: CHEST IMAGING

20. All radiographic images should be analyzed for density, motion, and rotation.  
 A True B False
21. The x-ray tube is positioned ——— behind the patient for the standard CXR.  
 A 8 feet B 6 feet C 4 feet D 7 feet
22. Failure to observe that a CXR was done with shallow lung volumes could easily lead to a mistaken diagnosis of ——— heart failure (CHF).  
 A chest B compound C congestive D coronary
23. Obtaining a two-view chest x-ray before ordering a V/Q study is:  
 A never needed B seldom needed C always recommended D usually recommended
24. On a well-penetrated frontal radiograph, the carina (tracheal bifurcation) may be found at the level of the ——— interspace.  
 A T2–T3 B T7–T8 C T4–T5 D T9–T10
25. Microscopic communications between the distal portions of the bronchiolar tree and surrounding alveoli are known as the canals of:  
 A Lambert B Morrison C Ciampa D Cento
26. The ——— refers to the portion of lung distal to the terminal bronchiole where gas exchange takes place.  
 A upper lobe B bronchiole zones C inferior lobe D acinus
27. Cervical transverse processes point down; thoracic transverse processes point up.  
 A True B False
28. Basic pathologic patterns may alter the normal appearance of the lungs. For example, emphysema normally leads to:  
 A collapse B consolidation C overinflation D effusion
29. The cervicothoracic sign is a variant of the:  
 A fat pad sign B Mumoli's sign C Cœur en sabot D silhouette sign
30. Linear or “———-like” atelectasis, a less severe form of partial collapse, may occur throughout the lungs.  
 A star B triangular C cup D plate
31. A ——— may be recognized by its tapered margins at a fissure as well as the fact that it changes shape with positioning.  
 A metastatic tumor B hepatic tumor C pseudotumor D lobular tumor

32. A cavitary mass with a wall thickness greater than ——— mm is more likely to be malignant.  
 A 3 B 7 C 10 D 15
33. ——— is the most useful imaging tool for evaluating patients with pulmonary and mediastinal masses.  
 A CT B MRI C US D NM
34. The most common neoplasms in the anterior mediastinum are:  
 A thymoma B lymphoma C (met) testicular cell tumors D (met) ovarian cell tumors
35. One does not need a chest radiograph to make a diagnosis of emphysema.  
 A True B False
36. Pneumonia may involve any lobe, an entire lung, or be unilateral or bilateral.  
 A True B False
37. Pneumothorax may result from iatrogenic factors, as in a:  
 A stab B laceration by fractured rib C lung biopsy D bullet wound
38. The sensitivity of CT for pulmonary embolism is 86% - with a specificity of:  
 A 75% B 85% C 89% D 96%
39. Thoracoplasty and plombage are procedures that were once performed to eliminate dead space within the chest.  
 A True B False
40. A pacemaker generator is an oval metal box usually visualized over the:  
 A lower chest wall B upper chest wall C right lung - middle lobe D right lung - lower lobe
41. Radiation pneumonitis is a form of inflammatory lung disease that is usually found ——— after radiation therapy for lymphoma.  
 A 1 - 6 months B 1 year C 2 years D 5 - 10 years
42. The evaluation of a patient with suspected TB should begin with a ——— skin test (purified protein derivative [PPD]) and a chest x-ray.  
 A Messina B Mialto C Morrison D Mantoux
43. Critically ill patients frequently develop a serious pulmonary complication known as ARDS (Adult Respiratory ——— Syndrome).  
 A Dermatitis B Deficiency C Distress D Decubitus
44. BPD, also known as chronic lung disease of ———, is a complication of prolonged ventilator therapy and RDS.  
 A teenagers B men over 50 C premature infants D women over 40
- CHAPTER 5: CARDIAC IMAGING**
45. A popular method used to determine cardiac size is the cardiothoracic:  
 A delta B ratio C difference D algorithm
46. With SPECT, a ——— camera acquires the data in multiple circular rotations around the patient.  
 A delta B sigma C alpha D gamma
47. PET studies with F ——— fluoro-2-deoxyglucose are used to assess the viability of myocardial tissue.  
 A 18 B 11 C 20 D 27

48. Cardiac MR for ischemic heart disease should be obtained with gadolinium enhancement.  
 A True B False
49. On the PA view of a CXR, most of the cardiac silhouette is made up almost exclusively of the ——— side of the heart.  
 A left B right C superior D inferior
50. In the normal lateral view, the anterior border of the cardiac silhouette consists of the:  
 A right atrium B left atrium C left ventricle D right ventricle
51. The ——— anomaly is a form of congenital heart disease where the right atrium protrudes into the right ventricle.  
 A Eboli B Eccheli C Ebstein D Epperson
52. Many cardiologists or critical care physicians will insert a ——— catheter into the pulmonary artery to measure pressures.  
 A Springer-Geier B Schön C Swan-Ganz D Scheffler

## CHAPTER 6: BREAST IMAGING

53. Patients with screening-detected breast cancer have a survival rate at least ——— greater than symptomatic patients.  
 A 33% B 20% C 12% D 48%
54. The term ——— is a catchall category of changes that include cysts, benign fibrous tissue, and dilated ducts in various configurations.  
 A schistosomiasis disease B cryptococcosis disease C anisakiasis disease D fibrocystic disease
55. ——— percent of breast cancer begins in the ductal epithelium.  
 A Thirty B Forty C Ninety D Eighty

## CHAPTER 7: ABDOMINAL RADIOGRAPHS

56. A supine KUB is also known as a “——— plate”.  
 A flat B horizontal C even D flush
57. Free air will rise beneath the diaphragm in the upright position and above the ——— edge on the left lateral decubitus radiograph.  
 A duodenum B pancreas C spleen D liver
58. Mild bowel stasis may be defined as multiple slightly dilated loops with ——— or more air-fluid levels.  
 A three B two C five D six
59. Gas within the rectum does not rule out bowel obstruction.  
 A True B False
60. Air outlining both sides of the bowel wall is known as the “double wall sign” or “——— sign.”.  
 A Rehm B Rigler C Rosenberg D Runge
61. Mucosal thickening is generally present when the valvulae conniventes of the small intestine or the colonic haustra are thicker than:  
 A 5 mm B 3 mm C 7 mm D 15 mm
62. The classic appearance of ascites has been described as a diffuse, “———” density of the abdomen.  
 A pillowy B triangulated C cuboid D ground glass
63. Regarding the displacement of surgical clips, scarring and fibrosis result in the clips:  
 A moving together B moving further apart C sinking in surrounding tissues D extruding forward



80. ——— typically employs compounds of technetium 99m to evaluate the urinary tract in both adults and children.  
 A CT urography                      B Functional MRI                      C Renal scintigraphy                      D IVP
81. ——— renal vein(s) drains each kidney.  
 A A single                      B 2                      C 4                      D 7-10
82. ——— urethral valves are considered the most common cause of urethral obstruction in male children.  
 A Lateral                      B Anterior                      C Inferior                      D Posterior
83. ——— is a term used to denote the abnormal position of one kidney with regard to the other.  
 A Renal ectopia                      B Adenovirus nephritis                      C Cryoglobulinemia                      D MELAS Syndrome
84. While many cases of acute pyelonephritis are diagnosed clinically, the preferred imaging modality is:  
 A contrast-enhanced CT                      B IVP                      C Doppler US                      D MRI
85. Inflammation of the urinary bladder is referred to as:  
 A dysuria                      B exstrophy-epispadias complex                      C paraureteral diverticula                      D cystitis
86. In autosomal dominant polycystic kidney disease, renal cysts may result in nephromegaly due to near-complete replacement of the:  
 A cortical vasculature                      B renal cortex                      C renal column                      D renal nerve
87. The typical Wilms tumor manifests as a very small, heterogeneously enhancing mass on CT and MRI.  
 A True                      B False
88. ——— is a malignant tumor of primitive neural crest cells.  
 A Neuroblastoma                      B Chordoma                      C Craniopharyngioma                      D Medulloblastoma
89. Neuroblastoma accounts for approximately ——— of childhood tumors.  
 A 20%                      B 10%                      C 40%                      D 25%
90. Renal artery stenosis is an uncommon cause of hypertension, affecting approximately ——— of hypertensive patients.  
 A 1% to 4%                      B 10% to 14%                      C 20% to 24%                      D 35%
91. VUR (——— reflux) is most frequently observed during voiding and may be demonstrated by either the VCUG or radionuclide cystogram.  
 A voiding                      B vesicoureteral                      C visceral                      D vesicant

## CHAPTER 10: OBSTETRIC AND GYNECOLOGIC IMAGING

92. ——— is the primary tool for investigation of the gravid uterus.  
 A Contrast-enhanced CT                      B IVP                      C Diagnostic ultrasound                      D MRI
93. ——— is the premature separation of the placenta from the wall of the uterus.  
 A Fetal Demise                      B Placental Abruption                      C Preeclampsia                      D Abruption placentae
94. Fibroids are extremely common and occur in up to ——— of women over the age of 35 years.  
 A 40%                      B 60%                      C 10%                      D 80%

## CHAPTER 11: MUSCULOSKELETAL IMAGING

95. MRI has eliminated most conventional arthrography.  
 A True                      B False

96. **Angiography is used seldom to evaluate patients with suspected bone tumors because ——— has largely superseded it for this purpose.**  
 A Contrast-enhanced CT      B NM      C US      D MRI
97. **A 10-year-old child with a permeative lesion of the shaft of a long bone is likely to have:**  
 A Ellerby tumor      B Eggleston tumor      C Emsden tumor      D Ewing tumor
98. **Infantile cortical hyperostosis (——— disease) does not occur in patients over age 1 year.**  
 A Caffey      B Cochrane      C Calveley      D Collett
99. **A laminated periosteal reaction indicates a(n) ——— injury to bone.**  
 A oblique      B comminuted      C repetitive      D compound
100. **——— is a term used to define a decrease in mineralization of bones as demonstrated on radiographs.**  
 A Achondroplasia      B Osteopenia      C Osteomalacia      D Osteopetrosis
101. **——— is a term that defines a specific pathologic state in which there is diminution of bone substance.**  
 A Achondroplasia      B Osteopenia      C Osteomalacia      D Osteoporosis
102. **A curious mixed pattern of osteopenia and fluffy sclerosis in the skull is known as “———” skull.**  
 A salt and pepper      B black dots      C thousand lakes      D chocolate chip
103. **Rheumatoid arthritis affects the cervical vertebral column in at least ——— of patients with the disease.**  
 A 50%      B 30%      C 10%      D 15%
104. **A particularly aggressive form of osteoarthritis that affects middle-aged and elderly women is known as ——— osteoarthritis.**  
 A crumbling      B frictional      C erosive      D degrading
105. **Gout arises from abnormal ——— metabolism.**  
 A calcium      B urate      C cocarboxylase      D glucagon
106. **Injuries about the physis are described according to the Salter-Harris-——— (S-H-O) classification.**  
 A Oatway      B Owens      C Okten      D Ogden
107. **The Salter-type ——— injury is a vertical fracture of the epiphysis with epiphysiolysis of the fracture fragment.**  
 A 1      B 2      C 3      D 4
108. **——— capital femoral epiphysis (SCFE) is an S-H-O type 1 injury that occurs most frequently in boys in their early teens.**  
 A Salter      B Subluxed      C Serrated      D Slipped
109. **The torus fracture of the of a bone shaft resembles:**  
 A the base of a Greek column      B a pyramid of sorts      C a twisting      D a crushed can
110. **Stress fractures may be the result of normal muscle activity on bone with compromised mineral content (——— fracture).**  
 A insufficiency      B tin can      C pillow      D marshmallow
111. **Most commonly, CTA is employed for the acute workup of subarachnoid ——— (SAH) for the detection of aneurysm.**  
 A hematopoiesis      B helix      C hematoma      D hemorrhage

## CHAPTER 12: CRANIAL IMAGING

112. Nuclear imaging of the brain was the only noninvasive cranial procedure before the development of CT and MRI.  
 A True B False
113. A blow to the malar region (from a fist) is most likely to produce a zygomaticomaxillary ——— (ZMC) fracture.  
 A circular B complex C compound D comminuted
114. Ischemia accounts for approximately ——— of all strokes.  
 A 87% B 65% C 52% D 44%
115. Multiple sclerosis (MS) is a demyelinating disease that predominantly affects:  
 A older females B older males C young females D young males

## CHAPTER 13: SPINE IMAGING

116. The distances between spinous processes and between the laminae are uniform and should not vary by more than:  
 A 4 mm B 2 mm C 5 mm D 1 mm
117. ——— is used intraoperatively to evaluate spinal cord lesions.  
 A Contrast-enhanced CT B Fluoroscopy C Diagnostic ultrasound D MRI
118. The vertebral column is a collection of ——— extending from the base of the skull through the entire length of the neck and trunk.  
 A 33 sesamoid bones B 33 round bones C 33 flat bones D 33 irregular bones
119. The area between the facets is called the pars interarticularis, or simply the:  
 A foramina B pedicle C IA D pars
120. Developmental abnormalities are not uncommon, occurring in an estimated ——— live births.  
 A 1 in 4,000 B 1 in 3,000 C 1 in 1,000 D 1 in 2,000



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9		33		57		81		105	
10		34		58		82		106	
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12		36		60		84		108	
13		37		61		85		109	
14		38		62		86		110	
15		39		63		87		111	
16		40		64		88		112	
17		41		65		89		113	
18		42		66		90		114	
19		43		67		91		115	
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