The bones of the spine are identified by number. This x-ray shows the vertebrae of the lumbar spine (lower back). Notice how they are labeled L1 to L5.

1. Which vertebra is closest to the sacrum? (give the letter and number)

2. Which vertebra seems to be out of alignment from the others?

3. What is the name of the bone labeled “A”?

4. What is the name of the bone labeled “C”?

5. What type of joint is labeled “B”?

6. Look at the area where the arrow (D) is pointing. Is this a fracture (broken bone) or is it normal?

CONSULT YOUR MEDICAL REFERENCE GUIDE
Your patient has been complaining of headaches and a stiff neck. After examining this x-ray you are confident you have discovered the problem.

7. The line drawn on the x-ray indicates the spine is not properly lined up. The patient is suffering from a ___________ (choose one)

- simple fracture
- hairline fracture
- subluxation
- dislocation

(HINT: consult your Medical Reference guide)

8. At which two vertebrae does the twist (misalignment) occur? (choose one)

- C7 and T1
- T1 and T2
- T2 and T3
- T4 and T5

9. What is the name of the bone marked “A”?

10. What is the name of the bone marked “B”?

11. What treatment would you recommend for this patient?
   - adjust the spine
   - surgery
   - amputation (remember, this is a neck problem)

CONSULT YOUR MEDICAL REFERENCE GUIDE
Leonard Karpofolitz was riding his horse when a mutant killer skunk leaped out of the brush causing the horse to rear. Leo fell off of the horse and landed on his left shoulder.
Polly Perkowitz took a tumble off the uneven parallel bars but like any good gymnast she landed on her feet. She landed slightly off balance, however, and suffered a rather unusual fracture to her left leg.

17. Label the bones:
   a. __________
   b. __________
   c. __________
   d. __________

18. The arrows point to the fracture? (almost missed it, didn’t you?) What is the name of this bone?

19. The thin fracture circles around the bone. What type of fracture is it?

CONSULT YOUR MEDICAL REFERENCE GUIDE
X-rayted Lab

Patient 5

X-rays are not only for bones. Doctors can find out about soft tissues as well by injecting a dye into the area to be examined. The dye shows up as white areas on the film.

20. Letter “A” shows the location of the kidneys; organs which clean the waste from the blood. Is there any dye in the kidneys?

21. Letter “B” shows the ureters; tubes which lead from the kidneys to the urinary bladder. Is there any dye in the ureters?

22. Letter “C” shows the urinary bladder which stores urine. Is there any dye in the bladder?

23. If there were a problem in the Urinary System there would be obstructions and the dye would not go through the system. Do you see any obstructions?

24. Your diagnosis, doctor? (choose one)

- normal urinary system
- obstructed urinary system

CONSULT YOUR MEDICAL REFERENCE GUIDE
Patient 6

Never stick your arm in an elevator door!

25. What’s the matter with this patient?

26. What is the specific name given to this type of injury?

27. What **type of joint** is at “A”?

28. What is the name of bone “B”?

29. What **type of joint** is at “C”?

CONSULT YOUR MEDICAL REFERENCE GUIDE
After sticking his harm in a closing elevator door, **Miles Giles** required 3 ½ hours of orthopedic surgery to put it back together.

30. The name of the broken bone is the _____________.

31. What did the surgeon use to fasten the steel plate to the bone?

32. What is the name of bone “A”?

33. What is the name of bone “B”?

34. What is the name of joint “C”?

35. What **type of joint** is at “C”?
OH! My aching back!!

This type of x-ray is called a **Myelogram** (mile-O-gram). It shows the condition of the spinal cord. The spinal cord appears white due to an injection of dye. This patient has a ruptured disk which is applying pressure to the spinal cord.

36. Between which two vertebrae is the bulging disk located?

37. This patient is suffering pain in the ____________ (pick one)
   - upper back
   - lower back
   - neck
   - foot

38. What **type of joint** is found in the spine?

CONSULT YOUR MEDICAL REFERENCE GUIDE
**Yolanda Flugelhoffer**, premier elephant trainer for the Barnum and Bailey Circus, suffered this injury when her newest elephant mistook the command “Go Forward” for “Sit Down”. The flight for life helicopter removed the elephant and Yolanda was taken to the nearest hospital by ambulance.

39. What is the name of the bone that has been broken?

40. What type of fracture do you think this is?

41. What type of joint is at letter “A”?

42. What type of treatment do you think will be required to fix Ms. Flugelhoffer? (pick one)

- a simple plaster cast
- simple surgery to set the bone
- major surgery to fasten the bone together with some type of hardware (pins, plates, screws, etc)
- a new job training toy poodles

CONSULT YOUR MEDICAL REFERENCE GUIDE
... the arm bone’s **Disconnected** to the shoulder bone ...

43. Bone “A” is the ____________.

44. Bone “B” is the ____________.

45. Bone “A” fits into bone “B” but it has **popped out of its socket**. What is this type of injury called?

46. This type of joint known as a _________ and _________ joint.

47. Are there any other injuries on this x-ray? If yes, describe.
This small child decided she didn’t trust the local banks so she deposited her nickel in a “safer place”.

48. According to the x-ray, the nickel is lodged somewhere in the ________

- head
- neck
- chest
- stomach
- all of the above

49. Name the bones:

  A ____________
  B ____________
  C ____________
  D ____________

50. How do you think the nickel should be removed? (notice the size of the nickel compared to the size of the throat)

- pull it out through the mouth with instruments
- remove from the neck with surgery
- allow it to pass into the digestive system and out of the body
Yummy, yummy, yummy I’ve got money in my tummy…
This small child swallowed a coin and it slid all the way down to his stomach.

51. Which arrow points toward the coin?

52. What is the name of the bone labeled “D”?

53. How do you think this coin was removed?
   - pulled out through the mouth with instruments
   - removed from the stomach with surgery
   - allowed to pass through the digestive system to be “found” at a later date
This is an x-ray of a fractured ankle that has been repaired with surgery.

54. Name the bones:

A  __________
B  __________
C  __________
D  __________

55. What has been used to hold the bones together? (choose one)

- wires
- plaster cast
- steel plate
- pins
- screws

CONSULT YOUR MEDICAL REFERENCE GUIDE
This is an x-ray of a hip joint after surgery.

56. What is the name of the bone labeled “A”?

57. The pelvis is divided into several bones. Part B is called the ____________.

58. Describe the “hardware” used to fix this joint.

59. According to the diagram, the area labeled “C” is called ____________.
   - obturator foramen
   - ischium
   - sciatic notch
The ELECTRONIC MAN?

This patient has a problem with an irregular heart beat. A battery operated pacemaker has been implanted under his skin to help regulate his heart.

60. The pacemaker has wires that lead to the __________.

61. This pacemaker is located under the skin on the patient’s right/left __________ side. (Choose one)

62. The pacemaker sends a mild electrical signal to the heart to keep it in rhythm. What do you suppose is done when the batteries run down?

63. How could you describe the pacemaker? (what does it look like)
This patient’s car slid off an icy road and crashed into a barn full of Christmas turkeys. When the feathers settled she was taken to the hospital complaining of soreness in her chest. As head radiologist, it is your responsibility to diagnose her condition.

64. You begin by looking for broken bones:
   A. Are the clavicles broken?
   B. Are any ribs broken?
   C. Is there a shoulder dislocation? (bone out of its socket)

65. The patient came in with a neck brace as a precaution. Does this x-ray show any evidence of a broken neck?

66. It is now time to make a decision. Sending an injured person home will send your malpractice insurance premium through the roof. What is your diagnosis, doctor? (pick one)

- multiple broken bones; keep in hospital
- no broken bones but suspicious spots on the lungs (possibly inhaled turkey feathers); keep in hospital
- perfectly normal; send home but no poultry for a week

Hint: Whatever answer you pick is the right one ... you're the doctor!

CONSULT YOUR MEDICAL REFERENCE GUIDE
Patient 17

Several hours before this x-ray was taken the patient was instructed to drink a Barium Solution. Barium absorbs x-rays causing the intestines to appear white. If there is no blockage, the intestine will appear white. If there is a blockage, the intestine will appear dark in that area.

Light Intestine - BLOCKAGE
Dark Intestine - NO BLOCKAGE

67. Are there any blockages in the intestine?

68. Indicate whether the following areas of the intestine are blocked or not blocked.

   A __________  B __________
   C __________  D __________  E __________

69. Most of the vertebrae shown are _____________. (choose one)

   - cervical (neck)
   - thoracic (chest)
   - lumbar (lower back)

CONSULT YOUR MEDICAL REFERENCE GUIDE
This x-ray of the cervical spine clearly shows some interesting parts of anatomy. See if you can locate them.

70. Matching:

_____ Atlas  a. arrow A
_____ Axis     b. arrow B
_____ Hyoid bone c. arrow C
_____ Spinous process d. arrow D
_____ Tooth root  e. vertebra C1
_____ Fillings in teeth f. vertebra C2

CONSULT YOUR MEDICAL REFERENCE GUIDE
71. Label the bones:

A ____________  B ____________
C ____________  D ____________

72. Is this the hand of a man or a woman?  (Look carefully for a very good clue)

73. How did you know?
Abnormal Chest X-ray?

Perhaps the world’s most astonishing medical mishap occurred during the 10th Annual Glass Blowing Competition held in Klagenfurt, Austria. Defending champion Arnold Schwartzensniffler drew in such a deep breath he accidentally inhaled the judge’s pen through his nose!! The pen became lodged in Arnold’s right lung leaving doctors clueless as to how to get it out!

74. This accident occurred during the ________ annual glass blowing competition.

75. The pen belonged to the ______________.

76. In the event the explanation given above is incorrect, how else could you explain this x-ray?
While fishing off the coast of Goteborg, Sweden, fisherman Yoloff Svenson reeled in this 42 pound whopper. His prize catch, however, was disqualified by the Guinness Book of World Records when it was discovered that the “fish” was actually Yoloff’s grandson. The lad was snagged while playing underwater with the boat’s propeller.

The boy has a sore toe but is otherwise doing well. Yoloff was awarded the consolation prize, a new pair of glasses!

77. What seems to be this youngster’s problem?

78. Did the hook go into the bone?

79. Notice the spaces between the bones of the young child’s foot. The bones have a lot of growing to do. The spaces are currently filled with _________

- cartilage
- muscle
- air

CONSULT YOUR MEDICAL REFERENCE GUIDE
A “Humerous” Story

Nothing funny here! When falling out of a tree, little Lenny Crawford stuck out his arm to break his fall. Unfortunately, the fall is not all that was broken.

80. What is the name of the broken bone?

81. What type of fracture is it? (HINT: I can see some extra bone fragments)
YOU’RE THE DOCTOR!

Your patient limps into the emergency room and faints before he can tell you where it hurts. This film is of his right ankle.

82. What is your diagnosis, doctor? Be specific (whatever you decide, make it sound good)
NEWS BULLETIN: BODY INFESTED WITH COIL WORMS!!

This portable chest x-ray shows some unusual “things”. Can you explain?

83. These “worms” are actually coaxial cables used to hook up various heart and lung monitors. DRAW a short section of this cable.

Place your drawing in the box on your answer sheet.

84. What circulatory organ do you think letter “A” is?

85. What respiratory organ do you think letter “B” represents?
**Patient 25**

**JUST A COOL DUDE IN A LOOSE MOOD!**

This is not exactly Chester Cheetah but it is a member of the same family. This domestic feline posed for the x-ray camera long enough to get this picture.

86. Compare the spine of the cat with that of a human. Fill in the number of each type of vertebrae on your answer sheet.

<table>
<thead>
<tr>
<th>Human</th>
<th>Cat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cervical</td>
<td></td>
</tr>
<tr>
<td>Thoracic</td>
<td></td>
</tr>
<tr>
<td>Lumbar</td>
<td></td>
</tr>
</tbody>
</table>

87. How is the cat spine different from ours? Be specific

88. Name these bones of the cat skeleton (the names are similar to those of human)

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>E</td>
<td>F</td>
</tr>
<tr>
<td>G</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CONSULT YOUR MEDICAL REFERENCE GUIDE
THE MIRACLE OF LIFE!

This is a fascinating picture of a baby just hours before being born. It is such a neat x-ray I will not ruin it with any silly stories. The more carefully you study it the more you will see and appreciate!

89. The letters marked “A” show the pelvis of the mother. This part of the pelvis is called the ____________.

90. Letter “B” shows the ball end of the mother’s ___________. (name the bone)

91. What is the large round object (marked “C”) inside the pelvis?

92. What other parts of the baby can you see in this x-ray?
   
   Part D? ____________

   Part E ____________

CONSULT YOUR MEDICAL REFERENCE GUIDE
A DOUBLE MIRACLE!

After studying patient 26, you will have an easier time seeing what is so special about this x-ray!

93. What is so special about this x-ray?

94. Look carefully for several minutes; see how much detail you can see. Write YES for the things you can see and NO for the things you cannot see in the x-ray.

   a) baby A’s head
   __________

   b) baby B’s head
   __________

   c) baby A’s spine
   __________

   d) baby B’s spine
   __________

   e) baby A’s arm (humerus)
   __________

   f) baby B’s arm (humerus)
   __________

   g) baby A’s leg (femur)
   __________

   h) baby B’s leg (femur)
   __________

CONSULT YOUR MEDICAL REFERENCE GUIDE