**Lumbar Puncture**

*Please print, complete and hand in this quiz at the start of the Lumbar Puncture seminar*

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The imaginary line connecting the posterior superior iliac crests crosses what spinal interspace?
   1. L1 -L2
   2. L3-L4
   3. L5-S1
   4. L4-L5
2. The number and type of white blood cells in normal CSF is?
   1. <5 WBC/mm3 all polymorphs
   2. <10 WBC/mm3 all lymphocytes
   3. <5 WBC/mm3 all lymphocytes
   4. <2 WBC/mm3 of any type
3. Which of the following patients does not need a CT-scan prior to lumbar puncture?
   1. A well patient with new onset right arm weakness
   2. A known cancer patient with headache and new onset right arm weakness
   3. An acute trauma patient with headache and bilateral let weakness
   4. A twelve year old boy with normal exam but fever and nuchal rigidity
4. Which of the following is an absolute contraindication to lumbar puncture?
   1. Uncorrected coagulopathy
   2. Nuchal rigidity
   3. Inability to visualize a patient’s fundi
   4. A concussion two months ago
5. Lumbar puncture is not used to diagnose which condition?
   1. Subarachnoid hemorrhage
   2. Cerebral abscess
   3. Meningitis
   4. Idiopathic intracranial hypertension
6. What needle type is best used for reducing the incidence of post lumbar puncture headache?
   1. Small blunt tipped needles
   2. Small cutting tipped needles
   3. Medium sized blunt tipped needles
   4. Medium sized cutting tipped needles
7. When advancing the lumbar puncture needle, it should be parallel to the bed and aimed towards the patient's \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. Sternum
   2. Symphysis pubis
   3. Umbilicus
   4. Neck
8. Which of the following is not a complication of lumbar puncture?
   1. Local back pain
   2. Epidermoid tumour implantation
   3. Olfactory disturbances
   4. Post lumbar puncture headache
9. Which of the following is not a way to reduce post lumbar puncture headaches?
   1. Using a blunt tipped spinal needle
   2. Replacing the stylet in the lumbar puncture needle prior to the needle's removal
   3. Keeping the patient on their back for 4 hours after the lumbar puncture
   4. Using a smaller spinal needle
10. Correctly orienting the bevel of a cutting type spinal needle can reduce the incidence of post lumbar puncture headache. In a patient in the lateral decubitus position, the notch of the stylet should point \_\_\_\_\_\_\_\_\_\_\_\_
    1. Up at the ceiling
    2. At the patient's right shoulder
    3. Towards the patient's head
    4. Towards the patient's feet
11. In an adult, the spinal cord may reach as low as what vertebral body?
    1. L4
    2. L2
    3. L5
    4. L3
12. Which of the following gives the correct order of tissues penetrated in a lumbar puncture?
    1. Skin , subcutaneous tissue , ligamentum flavum , intraspinal ligament, dura
    2. Skin, supraspinal ligament, dura , ligamentum flavum, arachnoid mater
    3. Skin, intraspinal ligament , supraspinal ligament, ligamentum flavum, dura
    4. Skin, supraspinal ligament , ligamentum flavum, dura, arachnoid mater
13. The ‘pop’ that is often felt in performing a lumbar puncture is caused by the penetration of what tissue?
    1. Ligamentum flavum
    2. Subarachnoid space
    3. Intraspinal ligament
    4. Supraspinal ligament
14. If bony resistance is encountered while performing a lumbar puncture, bring the spinal needle back to the skin and direct it more towards the \_\_\_\_\_\_\_\_\_\_\_
    1. Right
    2. Feet
    3. Parallel plane of the back
    4. Head
15. Which of the following is not routinely ordered on CSF samples?
    1. Gram stain
    2. Albumin
    3. Glucose
    4. Cell count
16. Xanthochromia is caused by
    1. Lysis of red blood cells
    2. Lysis of white blood cells
    3. High concentrations of organisms in the CSF
    4. Acutely traumatic lumbar punctures
17. A cell count in viral meningitis might demonstrate
    1. <5 WBC/mm3 and all lymphocytes
    2. >5 WBC/mm3 and all polymorphs
    3. >5 WBC/mm3 and all lymphocytes
    4. >5 WBC/mm3 and a mix of polymorphs and lymphocytes
18. The colour of normal CSF is
    1. Creamy yellow
    2. Slightly pink
    3. Clear straw coloured
    4. Crystal clear
19. The position of a patient for lumbar puncture should be
    1. Back arched out with hips and shoulders perpendicular to the bed
    2. Back straight with hips and shoulders perpendicular to the bed
    3. Back arched out with shoulders rolled towards the bed and hips perpendicular to the bed
    4. Back straight with shoulders rolled towards the bed and hips perpendicular to the bed
20. A patient with fever, nuchal rigidity and a normal neurological exam requires a CT scan prior to lumbar puncture.
    1. True
    2. False