

A&P 16

Neurological Essay Exam

Author: OpenStax College

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4. Chapter: A&P 16 Neurological Essay Exam

1. A&P 16 Neurological Essay Exam Questions

4.1.1. Watch this video (<http://openstaxcollege.org/l/neuroexam>) that prov...

Author: OpenStax College

Watch this video (<http://openstaxcollege.org/l/neuroexam>) that provides a demonstration of the neurological exam-a series of tests that can be performed

rapidly when a patient is initially brought into an emergency department.

The exam can be repeated on a regular basis to keep a record of how and if neurological function changes over time.

In what order were the sections of the neurological exam tested in this video, and which section seemed to be left out?

- Coordination and gait were tested first, followed by mental status, motor, sensory, and reflexes. There were no specific tests of the cranial nerves.

Check the answer of this question online at QuizOver.com:

Question: [Watch this video http://openstaxcollege.org/l/neuroexam](http://openstaxcollege.org/l/neuroexam) OpenStax College Anatomy

4.1.2. Watch this video (<http://openstaxcollege.org/l/neuroexam2>) for an i...

Author: OpenStax College

Watch this video (<http://openstaxcollege.org/l/neuroexam2>) for an introduction to the neurological exam.

Studying the neurological exam can give insight into how structure and function in the nervous system are interdependent.

This is a tool both in the clinic and in the classroom, but for different reasons.

In the clinic, this is a powerful but simple tool to assess a patient's neurological function.

In the classroom, it is a different way to think about the nervous system.

Though medical technology provides noninvasive imaging and real-time functional data, the presenter says these cannot replace the history at the core of the medical examination.

What does history mean in the context of medical practice?

- History is the report from the patient, or others familiar with the patient, that can assist in diagnosis and formulation of treatment and care-essentially the result of an interview with the patient.

Check the answer of this question online at QuizOver.com:

Question: [Watch this video http://openstaxcollege](http://openstaxcollege.org/l/neuroexam2) OpenStax College Anatomy

4.1.3. Read this article (<http://openstaxcollege.org/l/3word>) to learn abo...

Author: OpenStax College

Read this article (<http://openstaxcollege.org/l/3word>) to learn about a young man who texts his fiancée in a panic as he finds that he is having trouble remembering things.

At the hospital, a neurologist administers the mental status exam, which is mostly normal except for the three-word recall test.

The young man could not recall them even 30 seconds after hearing them and repeating them back to the doctor.

An undiscovered mass in the mediastinum region was found to be Hodgkin's lymphoma, a type of cancer that affects the immune system and likely caused antibodies to attack the nervous system.

The patient eventually regained his ability to remember, though the events in the hospital were always elusive.

Considering that the effects on memory were temporary, but resulted in the loss of the specific events of the hospital stay, what regions of the brain were likely to have been affected by the antibodies and what type of memory does that represent?

- The patient was unable to form episodic memories during the events described in the case, so the medial temporal lobe structures might have been affected by the antibodies.

Check the answer of this question online at QuizOver.com:

Question: [Read this article http://openstaxcollege.org/l/3word](http://openstaxcollege.org/l/3word) OpenStax College Anatomy

4.1.4. Watch the video (<http://openstaxcollege.org/l/2brains>) titled "The ...

Author: OpenStax College

Watch the video (<http://openstaxcollege.org/l/2brains>) titled "The Man With Two Brains" to see the neuroscientist Michael Gazzaniga introduce a patient he has worked with for years who has had his corpus callosum cut, separating his two cerebral hemispheres.

A few tests are run to demonstrate how this manifests in tests of cerebral function.

Unlike normal people, this patient can perform two independent tasks at the same time because the lines of communication between the right and left sides of his brain have been removed.

Whereas a person with an intact corpus callosum cannot overcome the dominance of one hemisphere over the other, this patient can.

If the left cerebral hemisphere is dominant in the majority of people, why would righthandedness be most common?

- The left hemisphere of the cerebrum controls the right side of the body through the corticospinal tract. Because language function is largely associated with the dominant hemisphere, the hand with which a person writes will most likely be the one controlled by the left hemisphere.

Check the answer of this question online at QuizOver.com:

Question: [Watch the video http://openstaxcollege](http://openstaxcollege.org/l/2brains) OpenStax College Anatomy Quest

4.1.5. Watch this short video (<http://openstaxcollege.org/l/facialnerve>) t...

Author: OpenStax College

Watch this short video (<http://openstaxcollege.org/l/facialnerve>) to see an examination of the facial nerve using some simple tests.

The facial nerve controls the muscles of facial expression.

Severe deficits will be obvious in watching someone use those muscles for normal control.

One side of the face might not move like the other side.

But directed tests, especially for contraction against resistance, require a formal testing of the muscles.

The muscles of the upper and lower face need to be tested.

The strength test in this video involves the patient squeezing her eyes shut and the examiner trying to pry her eyes open.

Why does the examiner ask her to try a second time?

- She has just demonstrated voluntary control by closing her eyes, but when he provides the resistance that she needs to hold tight against, she has already relaxed the muscles enough for him to pull them open. She needs to squeeze them tighter to demonstrate the strength she has in the orbicular oculi.

Check the answer of this question online at QuizOver.com:

Question: [Watch this short video http://openstaxcollege.org/l/facialnerve](http://openstaxcollege.org/l/facialnerve) OpenStax College Anatomy

4.1.6. Watch this video (<http://openstaxcollege.org/l/2point>) to see a qui...

Author: OpenStax College

Watch this video (<http://openstaxcollege.org/l/2point>) to see a quick demonstration of two-point discrimination.

Touching a specialized caliper to the surface of the skin will measure the distance between two points that are perceived as distinct stimuli versus a single stimulus.

The patient keeps their eyes closed while the examiner switches between using both points of the caliper or just one.

The patient then must indicate whether one or two stimuli are in contact with the skin.

Why is the distance between the caliper points closer on the fingertips as opposed to the palm of the hand?

And what do you think the distance would be on the arm, or the shoulder?

- The fingertips are the most sensitive skin on the hand, so the points of the caliper can be closer together and still be recognized as two separate points.
On the palm, the sensitivity is less, so the points need to be farther apart.
This will continue on the arm and shoulder, as sensitivity decreases, the discrimination of separate stimuli will be wider.

Check the answer of this question online at QuizOver.com:

Question: [Watch this video http://openstaxcollege.org/l/2point](http://openstaxcollege.org/l/2point) OpenStax College Anatomy

4.1.7. Watch this video (<http://openstaxcollege.org//reflextest>) to see h...

Author: OpenStax College

Watch this video (<http://openstaxcollege.org//reflextest>) to see how to test reflexes in the abdomen.

Testing reflexes of the trunk is not commonly performed in the neurological exam, but if findings suggest a problem with the thoracic segments of the spinal cord, a series of superficial reflexes of the abdomen can localize function to those segments.

If contraction is not observed when the skin lateral to the umbilicus (belly button) is stimulated, what level of the spinal cord may be damaged?

- The region lateral to the umbilicus is innervated by T9-T11, approximately.
A lack of contraction following that stimulation would therefore suggest damage at those levels.

Check the answer of this question online at QuizOver.com:

Question: [Watch this video http://openstaxcollege.org//reflextest](http://openstaxcollege.org//reflextest) OpenStax College Anatomy

4.1.8. Watch this short video (<http://openstaxcollege.org/l/stationtest>) t...

Author: OpenStax College

Watch this short video (<http://openstaxcollege.org/l/stationtest>) to see a test for station. Station refers to the position a person adopts when they are standing still.

The examiner would look for issues with balance, which coordinates proprioceptive, vestibular, and visual information in the cerebellum.

To test the ability of a subject to maintain balance, asking them to stand or hop on one foot can be more demanding.

The examiner may also push the subject to see if they can maintain balance.

An abnormal finding in the test of station is if the feet are placed far apart.

Why would a wide stance suggest problems with cerebellar function?

- A wide stance would suggest the person needs to maintain balance by broadening their base. Instead of continuous correction to posture, this can keep the body stable when the cerebellum cannot.

Check the answer of this question online at QuizOver.com:

Question: [Watch this short video http://openstaxcollege.org/l/stationtest](http://openstaxcollege.org/l/stationtest) OpenStax College Anatomy

4.1.9. Why is a rapid assessment of neurological function important in an ...

Author: OpenStax College

Why is a rapid assessment of neurological function important in an emergency situation?

- If an ischemic event has occurred, nervous tissue may be compromised, but quick intervention-possibly within a few hours-may be the critical aspect of recovery.

Check the answer of this question online at QuizOver.com:

Question: [Why is a rapid assessment of neurological OpenStax College Anatomy](#)

4.1.10. How is the diagnostic category of TIA different from a stroke?

Author: OpenStax College

How is the diagnostic category of TIA different from a stroke?

- The main difference between a stroke and TIA is time. If the result of a cerebrovascular accident lasts longer than 24 hours, then it is considered a stroke. Otherwise, it is considered transient and is labeled a TIA.

Check the answer of this question online at QuizOver.com:

Question: [How is the diagnostic category of TIA OpenStax College Anatomy Quest](#)

4.1.11. A patient's performance of the majority of the mental status exam s...

Author: OpenStax College

A patient's performance of the majority of the mental status exam subtests is in line with the expected norms, but the patient cannot repeat a string of numbers given by the examiner.

What is a likely explanation?

- The patient has suffered a stroke to the prefrontal cortex where working memory is localized.

Check the answer of this question online at QuizOver.com:

Question: [A patient's performance of the majority OpenStax College Anatomy](#)

4.1.12. A patient responds to the question "What is your name?" with a look...

Author: OpenStax College

A patient responds to the question "What is your name?" with a look of incomprehension.

Which of the two major language areas is most likely affected and what is the name for that type of aphasia?

- Wernicke's area is associated with the comprehension of language, so the person probably doesn't understand the question being asked and cannot respond meaningfully. This is called a receptive aphasia.

Check the answer of this question online at QuizOver.com:

Question: [A patient responds to the question What OpenStax College Anatomy](#)

4.1.13. As a person ages, their ability to focus on near objects (accommoda...

Author: OpenStax College

As a person ages, their ability to focus on near objects (accommodation) changes.

If a person is already myopic (near-sighted), why would corrective lenses not be necessary to read a book or computer screen?

- If the person already has problems focusing on far objects, and wears corrective lenses to see farther objects, then as accommodation changes, focusing on a reading surface might still be in their naturally near-sighted range.

Check the answer of this question online at [QuizOver.com](http://www.quizover.com):

Question: [As a person ages their ability to focus OpenStax College Anatomy](#)

4.1.14. When a patient flexes their neck, the head tips to the right side.

...

Author: OpenStax College

When a patient flexes their neck, the head tips to the right side.

Also, their tongue sticks out slightly to the left when they try to stick it straight out.

Where is the damage to the brain stem most likely located?

- The medulla is where the accessory nerve, which controls the sternocleidomastoid muscle, and the hypoglossal nerve, which controls the genioglossus muscle, are both located. The weakness of the left side of the neck, and the tendency of the tongue to point to that side, both show that the damage is on the left side of the brain stem.

Check the answer of this question online at QuizOver.com:

Question: [When a patient flexes their neck the head OpenStax College Anatomy](#)

4.1.15. The location of somatosensation is based on the topographical map o...

Author: OpenStax College

The location of somatosensation is based on the topographical map of sensory innervation. What does this mean?

- Where spinal nerves innervate the skin is represented by "slices" of the body surface referred to as dermatomes.
The fibers originating in each region are contained within the same spinal nerve, which relates to the perception of that localization.

Check the answer of this question online at QuizOver.com:

Question: [The location of somatosensation is based OpenStax College Anatomy](#)

4.1.16. Why are upper motor neuron lesions characterized by "spastic paraly...

Author: OpenStax College

Why are upper motor neuron lesions characterized by "spastic paralysis"?

- Paralysis means that voluntary muscle control is not possible because of the interruption of descending motor input.
Spasticity refers to what could be called "hypercontractility" of the muscles in the absence of the descending input.

Check the answer of this question online at QuizOver.com:

Question: [Why are upper motor neuron lesions OpenStax College Anatomy](#)

4.1.17. Learning to ride a bike is a motor function dependent on the cerebe...

Author: OpenStax College

Learning to ride a bike is a motor function dependent on the cerebellum.

Why are the different regions of the cerebellum involved in this complex motor learning?

- The spinocerebellum is related to controlling the axial muscles and keeps the body balanced on the bike. The cerebrocerebellum is related to controlling the appendicular muscles and keeps the legs moving to pedal the bike. The vestibulocerebellum receives input about equilibrium to help keep everything balanced as the bike is moving forward.

Check the answer of this question online at QuizOver.com:

Question: [Learning to ride a bike is a motor function OpenStax College Anatomy](#)

4.1.18. Alcohol intoxication can produce slurred speech. How is this relate...

Author: OpenStax College

Alcohol intoxication can produce slurred speech. How is this related to cerebellar function?

- Rapid alternating movements in speech relate to how the lips, tongue, and palate move to produce speech sounds.
The cerebrocerebellum is required for the proper implementation of these movements.

Check the answer of this question online at QuizOver.com:

Question: [Alcohol intoxication can produce slurred OpenStax College Anatomy](#)