

Matching Questions

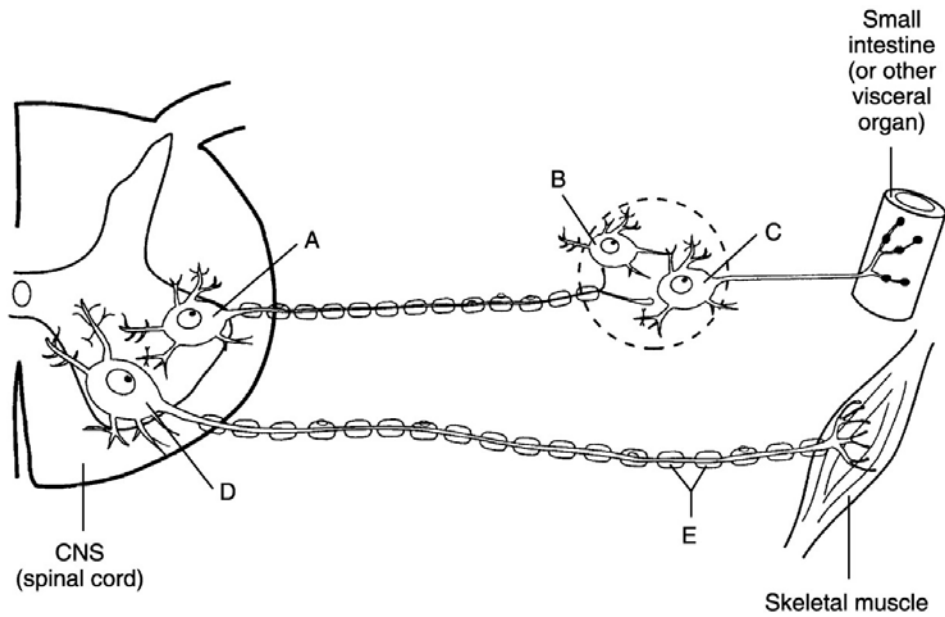


Figure 14.1

Using Figure 14.1, match the following:

- 1) Myelin sheath.

Answer: E

Diff: 2 Page Ref: 533; Fig. 14.2

- 2) ANS preganglionic neuron (cell body).

Answer: A

Diff: 2 Page Ref: 533; Fig. 14.2

- 3) ANS postganglionic neuron (cell body).

Answer: C

Diff: 2 Page Ref: 533; Fig. 14.2

- 4) Intrinsic ganglionic cell.

Answer: B

Diff: 2 Page Ref: 533; Fig. 14.2

- 5) Nonmyelinated nerve.

Answer: C

Diff: 2 Page Ref: 533; Fig. 14.2

Match the following:

6) Short preganglionic, long postganglionic fibers.

Answer: A

Page Ref: 535; Tbl. 14.1

A) Sympathetic

B) Parasympathetic

7) Collateral ganglia.

Answer: A

Page Ref: 538; Fig. 14.6

8) Increases blood pressure.

Answer: A

Page Ref: 535

9) Decreases heart rate.

Answer: B

Page Ref: 535

10) Causes erection of the penis.

Answer: B

Page Ref: 535

11) Stimulates ciliary muscles of the eye.

Answer: B

Page Ref: 535

12) Active after you have eaten a meal.

Answer: B

Page Ref: 535

Match the following:

13) Preganglionic sympathetic.

Answer: A

Page Ref: 533; Tble. 14.1

A) Acetylcholine (ACh)

B) Norepinephrine (NE)

14) Preganglionic parasympathetic.

Answer: A

Page Ref: 533; Tbl. 14.1

15) Postganglionic sympathetic to sweat glands.

Answer: A

Page Ref: 535; Tbl. 14.1

16) Postganglionic parasympathetic.

Answer: A

Page Ref: 533; Tbl. 14.1

17) Most postganglionic sympathetic.

Answer: B

Page Ref: 533; Tbl. 14.1

True/False Questions

- 1) Since the ANS is a visceral motor system, afferent pathways are of *no* importance and actually are rarely found.
Answer: FALSE
Diff: 1 Page Ref: 535
- 2) The rami communicantes are associated only with the sympathetic division of the ANS.
Answer: TRUE
Diff: 2 Page Ref: 541
- 3) The gray rami communicantes consist of myelinated postganglionic fibers.
Answer: FALSE
Diff: 1 Page Ref: 541
- 4) Splanchnic nerves are mixed motor and sensory nerves.
Answer: FALSE
Diff: 1 Page Ref: 538
- 5) The autonomic nervous system may cause activation or inhibition, depending on the division that is active and the target that is affected.
Answer: TRUE
Diff: 1 Page Ref: 535
- 6) The celiac ganglion is primarily associated with the sympathetic division.
Answer: TRUE
Diff: 1 Page Ref: 538, 541
- 7) The sympathetic chain is composed of collateral ganglia.
Answer: TRUE
Diff: 1 Page Ref: 538
- 8) Thermoregulatory responses to increased heat are mediated by the sympathetic nervous division.
Answer: TRUE
Diff: 1 Page Ref: 546-547
- 9) Most disorders of the autonomic nervous system reflect abnormalities of smooth muscle control.
Answer: TRUE
Diff: 1 Page Ref: 550-551
- 10) Alpha-adrenergic effects are usually stimulatory and mediatory.
Answer: TRUE
Diff: 1 Page Ref: 543
- 11) The adrenal medulla is considered a "misplaced" sympathetic ganglion by some.
Answer: TRUE
Diff: 1 Page Ref: 542
- 12) Acetylcholine is the substance released by the axonal endings of the somatic efferent fibers and by the parasympathetic nerve fiber endings.
Answer: TRUE
Diff: 1 Page Ref: 534

- 13) Most body organs are innervated by only the sympathetic division of the nervous system.
Answer: FALSE
Diff: 1 Page Ref: 535
- 14) Through direct neural stimulation, the sympathetic division promotes many metabolic effects via hormone release.
Answer: TRUE
Diff: 1 Page Ref: 535
- 15) Cranial nerves VII, IX, and X contain postganglionic fibers of the parasympathetic nervous system.
Answer: FALSE
Diff: 1 Page Ref: 537
- 16) In contrast to the parasympathetic division, the sympathetic division has numerous ganglionic neurons in the gray matter of the spinal cord.
Answer: FALSE
Diff: 1 Page Ref: 538
- 17) Norepinephrine-releasing fibers are called cholinergic fibers.
Answer: FALSE
Diff: 1 Page Ref: 543
- 18) The parasympathetic division is a branch of the somatic nervous system.
Answer: FALSE
Diff: 1 Page Ref: 535
- 19) The craniosacral division is the same as the parasympathetic division.
Answer: TRUE
Diff: 1 Page Ref: 536
- 20) The chain ganglion, like the dorsal root ganglion, contains soma from sensory neurons.
Answer: FALSE
Diff: 1 Page Ref: 538
- 21) Most blood vessels are innervated by the sympathetic division alone.
Answer: TRUE
Diff: 1 Page Ref: 538
- 22) The blood vessels of the skin are one of the few areas of the body where the vessels are innervated by both the sympathetic and parasympathetic divisions.
Answer: FALSE
Diff: 1 Page Ref: 538
- 23) Events recorded in a lie detector examination are controlled by the sympathetic division.
Answer: TRUE
Diff: 1 Page Ref: 535
- 24) All splanchnic nerves are sympathetic.
Answer: FALSE
Diff: 1 Page Ref: 538, 541
- 25) Splanchnic nerves pass through the abdominal aortic plexus.
Answer: TRUE
Diff: 2 Page Ref: 541

- 26) The structures that specifically exhibit vasomotor tone are mostly under sympathetic control.
Answer: TRUE
Diff: 2 Page Ref: 545
- 27) Since many of the same cardiac cells are innervated by both parasympathetic and sympathetic fibers, the influence of the two divisions on the heart is synergistic.
Answer: FALSE
Diff: 2 Page Ref: 545-546
- 28) β -adrenergic receptors are the only receptors found on the heart.
Answer: FALSE
Diff: 2 Page Ref: 543
- 29) Autonomic reflex centers occur in the spinal cord, medulla, and midbrain.
Answer: TRUE
Diff: 3 Page Ref: 547

Multiple-Choice Questions

- 1) The secretions of the adrenal medulla act to supplement the effects of _____.
A) parasympathetic innervation
B) sympathetic stimulation
C) vagus nerve activity
D) neurosecretory substances
Answer: B
Diff: 1 Page Ref: 542
- 2) In contrast to the somatic nervous system, the autonomic nervous system _____.
A) has two efferent neurons
B) has two afferent neurons
C) stimulates its effector cells
D) has both afferent and efferent fibers
Answer: A
Diff: 1 Page Ref: 533
- 3) Preparing the body for the "fight-or-flight" response is the role of the _____.
A) sympathetic nervous system
B) cerebrum
C) parasympathetic nervous system
D) somatic nervous system
Answer: A
Diff: 1 Page Ref: 535
- 4) The parasympathetic nervous system is characterized by peripheral ganglia near the _____.
A) organs and by short postganglionic fibers
B) organs and by long postganglionic fibers
C) spinal cord and by short postganglionic fibers
D) spinal cord and by long postganglionic fibers
Answer: A
Diff: 1 Page Ref: 536

5) A drug that might be used specifically to reduce heart rate in cardiac patients could be _____.

- A) anticholinesterase
- B) epinephrine
- C) norepinephrine
- D) a beta-blocker

Answer: D

Diff: 1 Page Ref: 545

6) The parasympathetic ganglion that serves the eye is the _____.

- A) ciliary ganglion
- B) pterygopalatine ganglion
- C) submandibular ganglion
- D) otic ganglion

Answer: A

Diff: 1 Page Ref: 537

7) Cardiovascular effects of the sympathetic division include all *except* _____.

- A) constriction of most blood vessels
- B) dilation of the vessels serving the skeletal muscles
- C) increase of heart rate and force
- D) dilation of the blood vessels serving the skin and digestive viscera

Answer: D

Diff: 1 Page Ref: 535

8) Over 90% of all parasympathetic fibers are derived from cranial nerve number _____.

- A) V
- B) VII
- C) X
- D) XII

Answer: C

Diff: 1 Page Ref: 537-538

9) The "resting and digesting" division of the autonomic nervous system is the _____.

- A) parasympathetic division
- B) sympathetic division
- C) somatic division
- D) peripheral nervous system

Answer: A

Diff: 1 Page Ref: 535

10) Control of temperature, endocrine activity, and thirst are functions associated with the _____.

- A) medulla
- B) cerebellum
- C) hypothalamus
- D) thalamus

Answer: C

Diff: 1 Page Ref: 550

11) Which of these effectors is *not* directly controlled by the autonomic nervous system?

- A) smooth muscle
- B) cardiac muscle
- C) skeletal muscle
- D) most glands

Answer: C

Diff: 1 Page Ref: 533

12) Which of the following is *not* a result of parasympathetic stimulation?

- A) salivation
- B) dilation of the pupils
- C) increased peristalsis of the digestive viscera
- D) relaxation of the urethral sphincter

Answer: B

Diff: 1 Page Ref: 535

13) The site of origin of the preganglionic fibers of the parasympathetic nervous system is the _____.

- A) thoracolumbar region of the spinal cord
- B) higher brain centers
- C) sympathetic chain
- D) brain stem and the sacral region of the cord

Answer: D

Diff: 1 Page Ref: 536

14) Sympathetic responses generally are widespread because _____.

- A) inactivation of ACh is fairly slow
- B) single preganglionic axons make multiple synapses with ganglionic neurons
- C) preganglionic fibers are short
- D) preganglionic fibers are long

Answer: B

Diff: 1 Page Ref: 547

15) Sympathetic nerves may leave the spinal cord at which vertebrae?

- A) second cervical
- B) third lumbar
- C) first coccyx
- D) first thoracic

Answer: D

Diff: 1 Page Ref: 541

16) Autonomic ganglia contain _____.

- A) an outer connective tissue capsule around the cell bodies of preganglionic motor neurons
- B) synapses between postganglionic fibers and their effectors
- C) the cell bodies of motor neurons
- D) both somatic afferent and efferent neurons

Answer: C

Diff: 1 Page Ref: 533

- 17) The parasympathetic fibers of the _____ nerves innervate smooth muscles of the lens of the eye, the muscles that cause the eye to bulge to accommodate close vision.
- A) optic
 - B) oculomotor
 - C) trochlear
 - D) abducens
- Answer: B
Diff: 1 Page Ref: 537
- 18) Fibers that enter and leave the sympathetic chain without synapsing form structures called _____.
- A) white rami communicantes
 - B) gray rami communicantes
 - C) spinal nerves
 - D) splanchnic nerves
- Answer: D
Diff: 1 Page Ref: 538
- 19) Which is *not* a plexus of the vagus nerve?
- A) cardiac
 - B) pulmonary
 - C) celiac
 - D) esophageal
- Answer: C
Diff: 1 Page Ref: 537-538
- 20) Visceral reflex arcs differ from somatic in that _____.
- A) visceral arcs contain two sensory neurons
 - B) somatic arcs contain one additional component that visceral arcs do *not* possess
 - C) visceral arcs involve two motor neurons
 - D) visceral arcs do not use integration centers
- Answer: C
Diff: 1 Page Ref: 533
- 21) The parasympathetic tone _____.
- A) prevents unnecessary heart deceleration
 - B) accelerates activity of the digestive tract
 - C) determines normal activity of the urinary tract
 - D) causes blood pressure to rise
- Answer: C
Diff: 1 Page Ref: 545
- 22) The autonomic nervous system _____.
- A) cannot be self-controlled
 - B) has one primary division
 - C) is not affected by drugs
 - D) is directly controlled by the reticular formation of the brain stem
- Answer: D
Diff: 1 Page Ref: 550

- 23) The white rami _____.
- A) are found only in the C₁-T₁ cord segments
 - B) are unmyelinated
 - C) carry preganglionic axons to the sympathetic chain
 - D) carry postganglionic fibers to the periphery

Answer: C

Diff: 1 Page Ref: 538

- 24) Beta-blockers _____.
- A) increase a dangerously low heart rate
 - B) attach mainly to the β_1 receptors of cardiac muscle
 - C) have widespread sympathetic effects
 - D) are potent antidepressants

Answer: B

Diff: 1 Page Ref: 545

- 25) Erection of the penis or clitoris _____.
- A) is primarily under sympathetic control
 - B) is primarily under parasympathetic control
 - C) is the result of coordinated activation by both sympathetic and parasympathetic input
 - D) depends very little on autonomic activation

Answer: B

Diff: 1 Page Ref: 545-546

- 26) Which is a uniquely sympathetic function?
- A) regulation of pupil size
 - B) regulation of cardiac rate
 - C) regulation of respiratory rate
 - D) regulation of body temperature

Answer: D

Diff: 1 Page Ref: 546-547

- 27) Raynaud's disease _____.
- A) is characterized by exaggerated vasoconstriction in the extremities
 - B) is induced by heat stress
 - C) occurs primarily in association with injury to the spinal cord
 - D) is frequently life-threatening

Answer: A

Diff: 1 Page Ref: 551

- 28) The mass reflex reaction _____.
- A) is also known as autonomic areflexia
 - B) represents a return of reflex activity with no controls from higher centers
 - C) usually precedes spinal shock
 - D) results from overexcitatory input from the cortex

Answer: B

Diff: 1 Page Ref: 550-551

- 29) In congenital megacolon (Hirschsprung's disease) _____.
- A) sympathetic innervation of a segment of the colon fails to develop
 - B) feces are forced out of the colon prematurely
 - C) medication usually returns the abnormal segment of the colon to normal
 - D) the distal portion of the large intestine fails to develop parasympathetic innervation

Answer: D

Diff: 1 Page Ref: 550-551

- 30) In aging, autonomic inefficiency is often due to _____.
- A) clogging of preganglionic axon terminals with filaments
 - B) cerebral hemorrhage
 - C) major loss of axons
 - D) peripheral vascular changes

Answer: A

Diff: 1 Page Ref: 551

- 31) Sympathetic fibers leave the spinal cord in the _____.
- A) craniosacral regions, and the postganglionic fibers secrete norepinephrine
 - B) thoracolumbar region, and the postganglionic fibers secrete acetylcholine
 - C) craniosacral region, and the postganglionic fibers secrete acetylcholine
 - D) thoracolumbar region, and the postganglionic fibers secrete norepinephrine

Answer: D

Diff: 2 Page Ref: 538

- 32) Where would you *not* find an autonomic ganglion?
- A) in the head
 - B) in the cervical region
 - C) close to the visceral effectors they serve
 - D) in the armpit

Answer: D

Diff: 2 Page Ref: 533-535

- 33) Sympathetic division stimulation causes _____.
- A) decreased blood glucose, increased GI peristalsis, and increased heart rate and blood pressure
 - B) increased blood glucose, increased GI peristalsis, and decreased heart rate and blood pressure
 - C) increased blood glucose, decreased GI peristalsis, and increased heart rate and blood pressure
 - D) decreased blood glucose, increased GI peristalsis, and decreased heart rate and blood pressure

Answer: C

Diff: 2 Page Ref: 535

- 34) The smooth muscle of the digestive viscera is served largely by the _____.
- A) lumbar splanchnic nerves
 - B) cephalic plexus
 - C) pelvic nerves
 - D) tenth cranial nerve

Answer: D

Diff: 2 Page Ref: 537

35) The route of major parasympathetic outflow from the head is the _____.

- A) sympathetic trunk
- B) phrenic nerve
- C) vagus nerve
- D) sacral nerve

Answer: C

Diff: 2 Page Ref: 537-538

36) Parasympathetic functions include _____.

- A) a stimulation of heart rate and force of contraction
- B) allowing the body to cope with an external threat
- C) constriction of bronchioles
- D) mobilizing storage energy sources

Answer: C

Diff: 2 Page Ref: 535

37) All preganglionic axons of the autonomic nervous system release _____.

- A) dopamine
- B) serotonin
- C) the same transmitter as the only one released by the sympathetic postganglionic axons
- D) the same transmitter as the one released by parasympathetic postganglionic axons

Answer: D

Diff: 2 Page Ref: 533-534

38) Emotions influence autonomic reactions primarily through integration in the _____.

- A) lateral horn of the spinal cord
- B) hypothalamus
- C) lateral geniculate of the thalamus
- D) inferior colliculus

Answer: B

Diff: 2 Page Ref: 550

39) The possibility of control over autonomic responses is demonstrated by _____.

- A) split brain studies
- B) stress-induced hypertension
- C) biofeedback
- D) nightmares

Answer: C

Diff: 2 Page Ref: 550

40) The vagus nerve does *not* innervate the _____.

- A) pancreas
- B) kidneys
- C) parotid gland
- D) gallbladder

Answer: C

Diff: 2 Page Ref: 537-538

Fill-in-the-Blank/Short Answer Questions

- 1) The sympathetic division is referred to as the _____ system.
Answer: fight-or-flight
Diff: 1 Page Ref: 535
- 2) Two major classes of adrenergic receptors, _____ and _____ are found in the ANS.
Answer: alpha; beta
Diff: 1 Page Ref: 545
- 3) The _____ division causes erection of the penis and clitoris.
Answer: parasympathetic
Diff: 1 Page Ref: 545-546
- 4) Sweat glands are innervated by the _____ fibers alone.
Answer: sympathetic
Diff: 1 Page Ref: 546
- 5) The _____ division alone stimulates the lens of the eye.
Answer: parasympathetic
Diff: 1 Page Ref: 536-537
- 6) The two cholinergic receptor types are _____ and _____.
Answer: nicotinic; muscarinic
Diff: 1 Page Ref: 543
- 7) The _____ receptor type is used by the heart, and when activated increases heart rate.
Answer: β_1
Diff: 1 Page Ref: 543
- 8) The only sympathetic preganglionic neuron to go directly to an organ is one branch of the _____ splanchnic nerve.
Answer: greater
Diff: 1 Page Ref: 541-542
- 9) Pain from the diaphragm will be referred to the anterior cutaneous area of the _____.
Answer: neck
Diff: 1 Page Ref: 542
- 10) The parasympathetic division uses only _____ as a neurotransmitter in the ganglionic neurons.
Answer: acetylcholine
Diff: 1 Page Ref: 534
- 11) What effect does aging have on the ANS?
Answer: In old age, ANS efficiency decreases. Constipation (due to GI motility decline), dry eyes, and frequent eye infections can occur. Fainting may occur due to slow responding vasomotor centers. These problems can be controlled by behavior modification.
Diff: 2 Page Ref: 551
- 12) What studies have suggested that the ANS can also be subject to voluntary controls?
Answer: Experimentation involving meditation and biofeedback have indicated that this is possible. Meditating yogis have indicated major physiological states, while biofeedback training suggests that we can alter certain processes such as heart rate, blood pressure, and muscle tone.
Diff: 2 Page Ref: 550

13) How is hypertension (high blood pressure) related to the ANS?

Answer: The ANS is involved with nearly every process that goes on within the body. Since it controls smooth muscle activity, the heart, and blood vessel constriction, it is not surprising that hypertension and ANS activity are related. Overproduction of adrenergic responses for extended periods keeps vessels constricted and heart rate and force of contraction high. This can lead to hypertension that is often stress-related and can be treated with adrenergic blocking agents.

Diff: 3 Page Ref: 550

14) Carla was startled by an extremely loud bang that sounded like a gunshot. Her heartbeat accelerated rapidly. When she found that the noise was only a car backfiring, she felt greatly relieved but her heart kept beating heavily for over half an hour. Why did this happen?

Answer: The effects of sympathetic activators are long lasting, since norepinephrine is inactivated slowly. Also, the adrenal medulla releases this neurotransmitter, which adds to the long-lasting effects of adrenergic stimulation.

Diff: 3 Page Ref: 547

15) Mark eats a very big meal in the evening. After the meal his wife would like him to help clean up, but Mark explains that he is "too tired" and promptly goes to sleep. What seems to be his problem?

Answer: After a meal, parasympathetic influences dominate, which increase digestive functions while decreasing cardiac and respiratory activity. This causes the individual to feel sleepy.

Diff: 3 Page Ref: 535

16) Richard has been under great stress and has complained of migraine headaches for weeks. He tried all kinds of drugs, with little effect. When he was at the end of his rope, a friend suggested yoga and meditation. Having nothing to lose, he tried them and after several months, felt like a new person. How could these practices help him?

Answer: The practitioner of meditation and biofeedback techniques seems to enter a physiological state of concentration that can reduce sympathetic-induced hypertension. By concentrating on relaxing thoughts, the practitioner can slow heart and respiratory rates. The effects are more widespread than can be explained by parasympathetic influences; the control could be consciously induced.

Diff: 3 Page Ref: 550

17) Describe four paths a preganglionic sympathetic fiber may take to reach its synapse point with the postganglionic neuron.

Answer: It can synapse with a ganglionic neuron in the paravertebral ganglion; ascend or descend within the chain to synapse in another ganglion; or pass through the sympathetic chain and synapse in a collateral ganglion. The fourth path is a single event in which one branch of the greater splanchnic nerve innervates the adrenal medulla, stimulating it to release the hormone norepinephrine.

Diff: 3 Page Ref: 540-542

18) Discuss a way in which the opposing ANS systems cooperate with each other.

Answer: Prior to and during intercourse the parasympathetic system causes erection in the male penis and female clitoris. During the climax the sympathetic system causes ejaculation of semen by the penis and reflex peristalsis of the vagina.

Diff: 1 Page Ref: 545-546

19) How are the sympathetic and parasympathetic divisions different?

Answer: 1. They have unique origin sites.
2. They have different lengths of pre- and postganglionic axons.
3. Their ganglia are located in different areas.

Diff: 1 Page Ref: 535

20) In what ways are the autonomic nervous system and the somatic nervous system different?

- Answer: 1. The autonomic is a two-neuron system; the somatic uses one.
2. The autonomic uses smaller neuron fibers (type B or C); the somatic generally uses the type A fibers.
3. The autonomic is mostly involuntary and automatic; the somatic is voluntary.
4. The autonomic uses several neurotransmitters and many receptor types; the somatic uses only one.
5. The autonomic is a slow system; the somatic is a fast system.
6. The autonomic has opposing forces to regulate the body; the somatic does not.

Diff: 2 Page Ref: 533-534

Clinical Questions

1) Ms. Johnson, a whiplash victim, has been suffering spinal shock but is looking forward to complete recovery. One night on evening rounds, her nurse discovered her in a fetal position, her body drenched with sweat. She was incontinent of feces and urine and her blood pressure was dangerously high (over 200 mm Hg). After a while she was stabilized. How could these events happen and what is this response called?

Answer: The mass reflex reaction is a life-threatening condition involving both somatic and autonomic nerves in most quadriplegics and victims of spinal shock. The symptoms can precipitate a stroke.

Diff: 3 Page Ref: 551

2) Mrs. Oberhaus needs surgery to correct a severe case of Raynaud's disease, affecting one of her hands. What surgical procedure will be performed? After the surgery, will she be more likely to suffer from anhidrosis (lack of sweating) or hyperhidrosis (profuse sweating) in the affected hand?

Answer: Mrs. Oberhaus' doctor will perform a sympathectomy. Cutting the sympathetic fibers will result in dilation of the affected blood vessels. Since sweating is stimulated by sympathetic nerves, after they are cut, the affected hand will suffer from anhidrosis.

Diff: 3 Page Ref: 551

3) An elderly patient in a nursing home has recurrent episodes of fainting when he stands. An alert nurse notes that this occurs only when his room is fairly warm; on cold mornings, he has no difficulty. What is the cause of the fainting, and how does it relate to the autonomic nervous system and to room temperature?

Answer: The fainting episodes are a result of orthostatic hypotension, due to slowed responding of aging sympathetic vasoconstrictor centers. The condition is exaggerated when blood supply to the skin is increased (as when the room is warm) since the shunting of blood to the skin reduces blood flow to other body parts.

Diff: 3 Page Ref: 551

4) Describe outcome criteria that can be used to evaluate whether a patient is effectively coping with a stressful problem.

Answer: Signs of mobilization of the sympathetic nervous system are: pounding heart, rapid deep breathing, cold and sweaty skin, and dilated pupils. Therefore, outcome criteria to evaluate a patient's ability to cope would be: regular heart beat, even and unlabored breathing, warm and dry skin, and constricted or normal pupils.

Diff: 3 Page Ref: 535

5) Sensory nerve endings that are located in the carotid bodies are rich in vagal fibers. How would external stimulation of the carotid artery, such as carotid massage, affect the heart rate?

Answer: External stimulation of the carotid artery would slow the heart down because of the stimulation of the vagus nerve.

Diff: 2 Page Ref: 537-538

- 6) Propranolol hydrochloride (Inderal) is a beta-adrenergic blocker often used as an antianginal, antiarrhythmic, and antihypertensive drug. Before giving Inderal to a patient, the nurse should assess what?
Answer: Inderal blocks beta-adrenergic receptors in the heart, thereby decreasing the influence of the sympathetic nervous system on these tissues. The nurse should assess the heart rate for bradycardia and the blood pressure for hypertension.

Diff: 3 Page Ref: 544-545

