Quiz Yourself: Chapter 13

Choices can be used more than once or not at all

1-5. Matching

A) secrete mainly epinephrine
B) secrete norepinephrine
C) secrete acetylcholine

adrenal medullary cells	1) __A__
sympathetic preganglionic neurons	2) __C__
sympathetic postganglionic neurons	3) __B__
parasympathetic preganglionic neurons	4) __C__
parasympathetic postganglionic neurons	5) __C__

6-10. Matching

A) parasympathetic division
B) sympathetic division

dilates pupils	6) __B__
constricts pupils	7) __A__
changes shape of lens of eye	8) __A__
increases gastrointestinal motility	9) __A__
constricts gastrointestinal blood vessels	10) __B__

11-15. Matching (cholinergic)

A) Nicotinic-m receptors
B) Nicotinic-n receptors
C) Muscarinic-1 receptors
D) Muscarinic-2 receptors
E) Muscarinic-3 receptors

GPCRs, ↑ PLC, ↑ IP3, ↑ Ca^{2+} in smooth muscle	11) __E__
ligand gated Na+ channels in skeletal muscle	12) __A__
GPCRs, ↑ PLC, ↑ IP3, ↑ Ca^{2+} in neurons	13) __C__
ligand gated Na+ channels in neurons	14) __B__
GPCRs, Gβδ gated K^+ channels	15) __D__

16-20. Matching (adrenergic)

A) beta-1 receptors
B) beta-2 receptors
C) beta-3 receptors
D) alpha-1 receptors
E) alpha-2 presynaptic receptors

GPCRs, ↑ adenylyl cyclase, ↑ cAMP, ↑ PKA, ↑ Ca^{2+} pumps	16) __B__
GPCRs, ↑ adenylyl cyclase, ↑ cAMP, ↑ PKA, ↑ Ca^{2+}, Na^+	17) __A__
GPCRs, ↑ adenylyl cyclase, ↑ cAMP, ↑ PKA, ↑ lipolysis	18) __C__
GPCRs, ↓ adenylyl cyclase, ↓ cAMP, ↓ Na^+, Ca^{2+}	19) __E__
GPCRs, ↑ PLC, ↑ IP3, ↑ Ca^{2+}	20) __D__

Fill in

21. _**Sympathetic**_ preganglionic neurons originate mainly in spinal cord.

22. The ganglia of the _**parasympathetic**_ nervous system are typically in the target organs.

23. The sympathetic and parasympathetic postganglionic neurons contain _**nicotinic-n**_ receptors.

24. Sympathetic postganglionic neurons typically release _**norepinephrine**_.

25. Parasympathetic postganglionic neurons typically release _**acetylcholine**_.

Study Questions

1. Compare and contrast the organization of the parasympathetic and sympathetic divisions of the autonomic nervous system.
2. Compare and contrast the neurotransmitters, and receptors of the parasympathetic and sympathetic divisions of the autonomic nervous system.
3. Compare and contrast some of the major organ responses to parasympathetic and sympathetic stimulation.

Quiz Yourself: Chapter 14

Choices can be used more than once or not at all

1-5. Matching (Gland : produces hormone)

A) Thyroid
B) GI Tract
C) Adrenal Cortex
D) Anterior Pituitary
E) Posterior Pituitary

Cholecystokinin (CCK) 1) __B__
Corticotropin (ACTH) 2) __D__
Thyroxin (T4) 3) __A__
Oxytocin 4) __E__
Cortisol 5) __C__

6-10. Matching

A) water soluble
B) lipid soluble

Vasopressin 6) __A__
Testosterone 7) __B__
Thyroxin (T4) 8) __B__
Norepinephrine (NE) 9) __A__
Gonadotropin Releasing Hormone (GnRH) 10) __A__

11-15. Matching

A) a tropic hormone
B) a non-tropic hormone

Thyrotropin Releasing Hormone (TRH) 11) __A__
Epinephrine (E, Epi) 12) __B__
Triiodothyronin (T3) 13) __B__
Thyrotropin (TSH) 14) __A__
Oxytocin 15) __B__

16-20. Matching (REB = response element binding; GPRC = G protein coupled receptors)

A) acts by way of tyrosine kinase linked receptors
B) acts by way of REB protein receptors
C) acts by way of GPCRs

Insulin 16) __A__
Cortisol 17) __B__
Vasopressin 18) __C__
Norepinephrine (NE) 19) __C__
Corticotropin Releasing Hormone (CRH) 20) __C__

Fill in

21. Neurotransmitters are _**water**_ soluble.

22. Hormones may be _**water**_ soluble or _**lipid**_ soluble.

23. _**Epinephrine**_ (a hormone) will stimulate **β_2** receptors in the lungs and cause bronchial dilation.

24. Catecholamine and peptide hormones are stored and secreted from _**vesicles**_.

25. Steroid hormones are synthesized from _**cholesterol**_ and not stored.

Study Questions

1. Describe the characteristics of amine, peptide, and steroid hormones, and list some examples of hormones in each group and the glands that produce them.
2. Compare and contrast nervous communication and endocrine communication.
3. Compare and contrast how water soluble hormones and lipid soluble hormones act on target cells. Use examples, and include a description of the receptors involved.
4. Compare and contrast the synthesis and secretion/release of water soluble hormones and lipid soluble hormones.

Quiz Yourself: Chapter 15

Choices can be used more than once or not at all

1-5. Matching

A) anterior pituitary
B) posterior pituitary
C) none of the above

contains thyrotrophs	1) __A__
contains corticotrophs	2) __A__
contains gonadotrophs	3) __A__
contains pituitary portal vessels	4) __A__
contains axons of hypothalamic neurons	5) __B__

6-10. Matching

A) CRH
B) TRH
C) GHRH
D) GnRH

stimulates the release of ACTH by the pituitary	6) __A__
stimulates the release of TSH by the pituitary	7) __B__
stimulates the release of FSH by the pituitary	8) __D__
stimulates the release of GH by the pituitary	9) __C__
stimulates the release of LH by the pituitary	10) __D__

11-15. Place in order the signals and structures involved in release of cortisol.

A) Pituitary portal vessels carry hormone	11) __B__
B) Central nervous system detects stress	12) __C__
C) Hypothalamic CRH neurons secrete CRH	13) __A__
D) Anterior pituitary corticotrophs secrete corticotropin	14) __D__
E) Adrenal fasciculata cells synthesize and release cortisol	15) __E__

16-20. Place in order the signals and structures involved in release of T3 and T4.

A) Pituitary portal vessels carry hormone	16) __B__
B) Central nervous system detects stress	17) __C__
C) Hypothalamic TRH neurons secrete TRH	18) __A__
D) Anterior pituitary corticotrophs secrete thyrotropin	19) __D__
E) Thyroid follicles release T3 and T4	20) __E__

Fill in

21. The posterior pituitary is an extension of the _**hypothalamus**_ and contains _**neurons**_ (cells) that secrete hormones.

22. The anterior pituitary responds to _**releasing**_ and _**inhibiting**_ hormones and contains _**endocrine**_ cells that secrete hormones.

23. _**Cortisol**_ (a hormone) inhibits cellular uptake of glucose and increases use of fatty acids and amino acids as an energy source.

24. Fear and anxiety leading to stress is mediated by the _**amygdala**_ of the brain.

25. The neural and endocrine responses to stress are integrated in part by the _**paraventricular**_ _**nucleus**_ of the hypothalamus which secretes _**CRH**_.

Study Questions

1. Compare and contrast the organization of the posterior pituitary and the anterior pituitary.
2. Explain how the hypothalamus controls the anterior pituitary, which in turn controls other endocrine glands.
3. Explain the role of CRH in the control and integration of neural and endocrine responses to stress.