* Make flash cards for all vocab words *

Review-living Environment
Nervous/endocrine system

Know structure of a neuron (function & location)
-soma;
-nucleus;
-dendrite;
-axon;
-myelin sheath;
-terminal branches;
-synaptic knobs;

Neurotransmitter - chemical messenger of the nervous system, has a specific shape → fits with receptor molecules.

Part of the brain (function and location)
~medulla;
~cerebrum;
~spinal cord;
~cerebellum;

Reflex
Reflex arc (sim)
Pathway:
Stimulus ~ receptor ~sensory neuron ~
Interneuron ~ motor neuron ~effecter ~ Response

Be Familiar with the malfunctions:

Nervous	**Endocrine**
-Polio;	-Diabetes;
-Meningitis;	-goiter;
-stroke;	-gigantism;

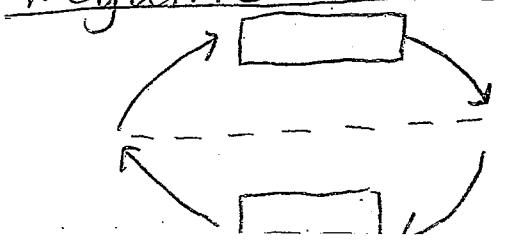
****Be able to explain what happens if homeostasis is affected in these systems. ****

Review the hormone chart: * Know the hormone produced & function

Thyroid—
Parathyroid—
Islets of langerhans—
Pituitary—
Adrenal—
Testes—
Ovaries—

Hormone - chemical messenger of the endocrine system → fits with receptors on target cells.

Negative Feedback:

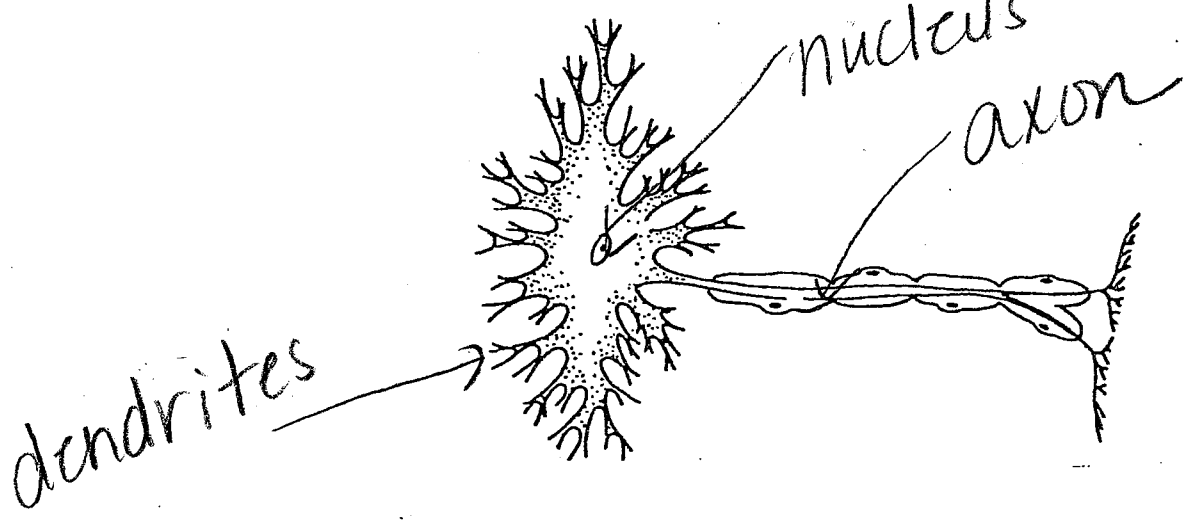


← normal blood sugar level (homeostasis)

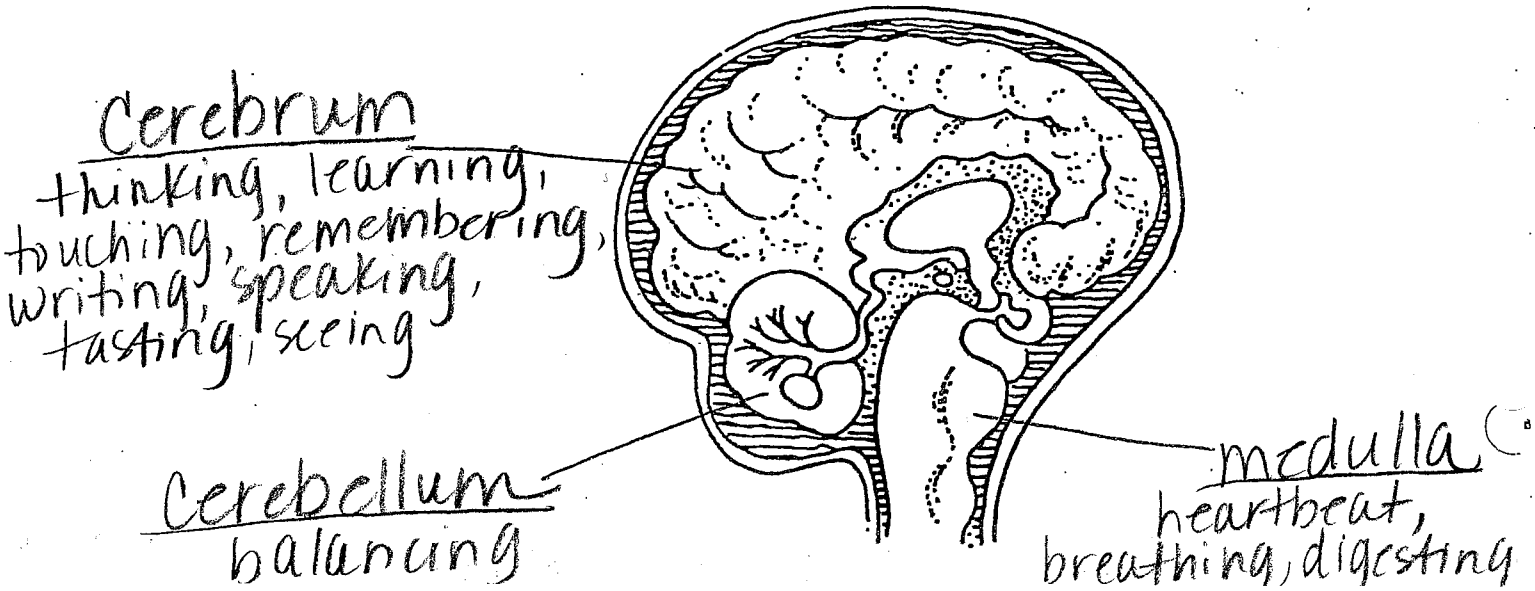
A. Compare and contrast the three kinds of neurons. Complete the chart.

Kind of Neurons	Where the Nerves are Found	Special Job of the Neurons
sensory neurons	sense organs	relay messages from receptors to interneurons
motor neurons	muscles & glands	transmit impulses from brain & spinal cord to muscles
interneuron	brain & spinal cord	relay messages from sensory to motor neurons

A. Look at the picture of the neuron. Label the *nucleus*, the *axons*, and the *dendrites*. Then answer the questions below.



B. Look at the picture of the brain. Label the *cerebrum*, the *cerebellum*, and *medulla*. Then write each of the following functions near the part of the brain that controls the function: voluntary muscle movement, thinking, learning, touching, remembering, writing, speaking, tasting, seeing, balancing, heartbeat, breathing, digesting foods.



Exercise 146 / Vocabulary

Name_____ Date_____

Complete each sentence using the terms in the box.

~~adrenaline~~	~~axons~~	~~cerebellum~~	~~cerebrum~~
~~dendrites~~	~~hormones~~	~~medulla~~	~~neurons~~
~~reflex~~	~~spinal cord~~	~~synapses~~	

1. The nervous system is made up of long stringy cells called neurons.
2. A reflex is an automatic response to a stimulus that is centered in the spinal cord.
3. Fibers on neurons that carry messages toward the cell body are called dendrites.
4. When you keep your balance by walking across a log, you are using the part of your brain called the cerebellum
5. Adrenaline is a special hormone that is activated when people are excited, frightened, or angered.
6. Automatic body functions are controlled by the medulla in the brain.
7. Messages move by electrical impulses by "jumping" across the synapses between neurons.
8. Fibers on neurons that carry messages away from the cell body are called axons.
9. The backbone protects the spinal cord
10. In the brain, the senses are controlled by the cerebrum
11. Chemical substances called hormones control body growth and behavior.

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1. The major function of a motor neuron is to (1) transmit impulses from the spinal cord to the brain (2) act as a receptor for environment stimuli (3) transmit impulses from sense organs to the central nervous system (4) transmit impulses from the central nervous system to muscles or glands

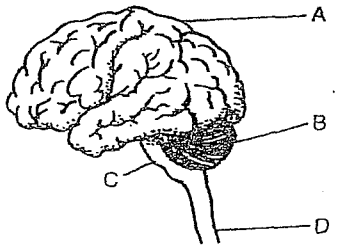
2. Nerves are composed of bundles of (1) muscle cells (2) neurons (3) phagocytes (4) bone cells

3. Which part of the human central nervous system is involved primarily with sensory interpretation and thinking? (1) spinal cord (2) medulla (3) cerebrum (4) cerebellum

4. The somatic nervous system contains nerves that run from the central nervous system to the (1) muscles of the skeleton (2) heart (3) smooth muscles of the gastrointestinal tract (4) endocrine glands

5. If the cerebellum of a human were damaged, which of the following would probably result? (1) inability to reason (2) difficulty in breathing (3) loss of sight (4) loss of balance

6. Which is the correct route of an impulse in a reflex arc?
(1) receptor → sensory neuron → interneuron → motor neuron → effector
(2) effector → receptor → motor neuron → sensory neuron → interneuron
(3) sensory neuron → effector → motor neuron → receptor → interneuron
(4) motor neuron → sensory neuron → interneuron → effector



9. Injury to which part would most likely result in loss of memory? (1) *A* (2) *B* (3) *C* (4) *D*

10. Which part of the brain controls the involuntary movements of the digestive system? (1) *A* (2) *B* (3) *C* (4) *D*

11. Which part of the brain is involved with balance and the coordination of body movements? (1) *A* (2) *B* (3) *C* (4) *D*

12. Sight and hearing are functions of the structure labeled (1) *A* (2) *B* (3) *C* (4) *D*

13. The brain and the spinal cord make up the (1) autonomic nervous system (2) peripheral nervous system (3) central nervous system (4) somatic nervous system

14. Impulses are transmitted from receptors to the central nervous system by (1) receptor neurons (2) sensory neurons (3) interneurons (4) motor neurons

7. Which part of the central nervous system is *correctly* paired with its function?
1 spinal cord – coordinates learning activities
2 cerebrum – serves as the center for reflex actions
3 cerebrum – serves as the center for memory and reasoning
4 medulla – maintains muscular coordination

8. If a motor neuron involved in a reflex arc is damaged, which event in that arc is *least* likely to occur?
1 contraction of a muscle
2 stimulation of an interneuron
3 reception of a stronger stimulus by the sense organ
4 secretion of a neurotransmitter by the sensory neuron

15. The maintenance of proper blood sugar level involves the storage of excess sugar in the

1 salivary glands
2 stomach
3 pancreas
4 liver

16. The body normally responds to low concentrations of sugar in the blood by secreting

1 insulin
2 glucagon
3 estrogen
4 testosterone

17. Into which system do endocrine glands secrete hormones?

1 circulatory
2 nervous
3 digestive
4 reproductive

18. Hormones that are secreted in one area of the human body affect responses in other areas. Hormones reach these different areas of the body by way of

1 ducts
2 nephrons
3 respiratory tubules
4 blood vessels

19. A difference between the human nervous system and the endocrine system is that

1 nerve responses are more rapid than endocrine responses
2 endocrine responses are of shorter duration than nerve responses
3 nerve impulses travel by way of the transport system while hormones travel by way of neurons
4 the endocrine system secretes neurotransmitters and the nervous system secretes hormones

20. A person was admitted to the hospital with abnormally high blood sugar and an abnormally high sugar content in his urine. Which gland most likely caused this condition by secreting lower than normal amounts of its hormone?

1 pancreas
2 parathyroid
3 salivary
4 thyroid

In humans, which substance is directly responsible for controlling the calcium levels of the blood?

1 insulin
2 adrenaline
3 parathormone
4 thyroxine

22. In human females, the main function of the follicle stimulating hormone (FSH) secreted by the pituitary gland is to

1 stimulate the adrenal glands to produce cortisone
2 stimulate activity in the ovaries
3 control the metabolism of calcium
4 regulate the rate of oxidation in the body

23. Which structure secretes the substance that it produces directly into the bloodstream?

1 gall bladder
2 skin
3 salivary gland
4 adrenal gland

Base your answers to questions , on the following list of diseases. Select the disease that is best associated with the statement below.

Diseases
(1) Polio
(2) Stroke
(3) Meningitis
(4) Cerebral palsy

4. Inflammation of the membranes surrounding the brain and spinal cord

(1) 1 (3) 3
(2) 2 (4) 4

5. A clot in a cerebral blood vessel that results in brain damage

(1) 1 (3) 3
(2) 2 (4) 4

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6. The hormone TSH stimulates the production of

(1) thyroxin (3) estrogen
(2) insulin (4) testosterone

7. An example of the maintenance of homeostasis in humans is the action of glucagon and insulin in regulating the

(1) excretion of urine from the bladder
(2) secretion of thyroxin
(3) temperature of the body
(4) concentration of blood sugar