

## Endocrine System Stations

Name \_\_\_\_\_

Directions: Gather the information on each “Endocrine System” station card. As you gather the information, complete each section of questions below.

### STATION: KEY TERMS

1. Name all of the terms that are structures that make or release hormones.
2. Which 3 key terms are located in the brain?
3. A hormone could be compared to a letter or an email. Why is this a good analogy?
4. What is metabolism?
5. What is a gland?

### STATION: FUNCTIONS

6. Are growth and development the same thing? Explain.
7. Name 3 things that are affected by your body’s 24-hour circadian rhythm.
8. What is the difference between satiety and hunger?
9. Define *mood*.

### STATION: GLANDS

10. How are endocrine glands and exocrine glands different?
11. State the location of the following glands:  
thyroid \_\_\_\_\_ thymus \_\_\_\_\_ adrenal gland \_\_\_\_\_
12. Are there glands that are different between males and females? Explain.
13. Which gland makes...  
insulin \_\_\_\_\_ melatonin \_\_\_\_\_ testosterone \_\_\_\_\_  
hormones involved in the immune response \_\_\_\_\_ estrogen \_\_\_\_\_
14. If a person had a problem with their pineal gland, what might some of the symptoms be? Explain.

**STATION: HORMONES**

15. Does a hormone produce a reaction *by itself*? Explain.
16. Name the major hormones *released by* the pituitary gland.
17. Does the grid on the station card include all human hormones? Explain.
18. If a woman was having issues with menstruation, what 2 hormones might her doctor investigate?
19. List two hormones from the grid that stimulate the production of another hormone. Then, state which hormone they stimulate the production of.
20. How does growth hormone have a different effect on kids than on adults?
21. What is the function of the T3 and T4 hormones?
22. Low sodium levels may cause lethargy (tiredness) and confusion. An issue with which hormone might lead to this problem? Explain.

**STATION: FEEDBACK LOOPS**

23. Use your own words to explain how a feedback loop works.
24. Complete the chain of events graphic organizer below. The events go in order from left to right.

Stimulus	What happens to blood sugar? (↑ or ↓)	What is released by the pancreas?	What effect does this have?	What happens to blood sugar? (↑ or ↓)	What do these processes both help maintain?
Food Is Eaten	→	→	The liver... → The body cells... →	→	→
Hunger, Have Not Eaten	→	→	→	→	→

**STATION: FIGHT-OR-FLIGHT**

25. What stimulates the adrenal glands to release cortisol and adrenaline?

26. Complete the grid below. The first column states an effect of the fight-or-flight response. In the second column, describe how this might help a person either fight or run.

Effect	How does this help in a dangerous situation?
Liver Converts Glycogen to Glucose	
Sweating increases	
Breathing Speeds Up	
Heart Rate Speeds Up	
Digestion Slows Down	
Blood Pressure Increases	

27. Think about a situation in which you were very afraid. Which of the effects of the fight-or-flight response did you experience?

**STATION: PROBLEMS**

28. Complete the grid below.

Disease Name	Hormone Involved	What causes the problem?	Symptoms
			weight gain with thin arms and legs, increased fat around neck, easy bruising, weak muscles
	thyroid hormones		
Diabetes			

29. How can type 2 diabetes be controlled?

30. Why does a synthetic hormone work as a treatment for Hashimoto's Disease?

### **STATION: WORKING TOGETHER**

31. Name two ways that the excretory system and the endocrine system interact.
32. How might a brain tumor in certain parts of the brain affect the endocrine system? Explain.
33. How does the nervous system affect the endocrine system?
34. How do hormones influence muscle tone as humans get older?
35. The endocrine system relies on which other body system to get hormones to their target cells?
36. In a condition called SIADH, the kidneys retain (keep in) too much water. This dilutes the blood, causing symptoms such as nausea, vomiting, irritability, and confusion. What hormone might be involved in this condition? Explain.
37. Osteoporosis is a condition that affects the bones, making them susceptible to breaking. Bones are made primarily of the mineral calcium. Osteoporosis is sometimes caused by a problem with a hormone that regulates mineral uptake in the kidneys. Which hormone is it?

### **STATION: FUN FACTS**

38. How is a pheromone different than other hormones?
39. How does cuddling help wounds heal faster?
40. What does *iodized* mean? Where do we get iodine in food today?
41. Which hormone likely saved skydiver Joan Murray's life? Explain how.
42. What types of animals have a lot of hormones in common with humans?
43. Using electronics like phones and televisions at night can disrupt our sleep/wake cycle. How can we rest it back to sunrise and sunset?
44. What is the function of the hormone gastrin?