

# UNIT 7 - ENDOCRINE SYSTEM

## ACTIVITY - Endocrine System Worksheet

Name \_\_\_\_\_ Period: \_\_\_\_\_

1. Identify the three functions of the Endocrine system.
2. Describe a hormone and how it functions in the body.

### 3. Complete the Chart

Gland	Location	Hormone(s)
Pituitary		1. 2. 3.
		1. Thyroxine
	Superior to the kidneys	1. Adrenal Cortex Hormone A. 2. Adrenal Medulla Hormones A. B.
		Insulin and glucagon

4. Describe the action thyroxine hormone has in the body.
5. What hormone from the pituitary gland stimulates the release of thyroxine from the thyroid gland?
6. How does epinephrine and norepinephrine help the body cope with stress?

7. Compare and contrast the effects of insulin and glucagon on the body.

8. Why is the pituitary the “master gland” of the body?

9. Give a function of each of the hormones on the chart:

Hormone	Function(s)
HGH	
TSH	
ACTH	

10. Define Stress:

11. Identify stressors in the body.

12. What hormone from the pituitary gland stimulates the release of cortisol from the adrenal cortex?

13. Determine which of the two reactions the statements below describe:

Alarm Reaction- AR or Resistance Reaction RR

- A. Response Immediate
- B. Increased HR and Contractility
- C. Long term reaction
- D. Increased synthesis of ATP
- E. Fight or Flight from stress
- F. Helps individuals through stressful periods
- G. Body temperature increases causing sweating
- H. Controlled by hypothamic hormones

14. Describe the Exhaustion Stage.

## WORKSHEET - Endocrine System – KEY

1. Identify the three functions of the endocrine system.
  - a. *Coordinate body function*
  - b. *Regulate homeostasis*
  - c. *Regulate growth and metabolism*
2. Describe a hormone and how it functions in the body.  
*A chemical messenger secreted from a gland which diffuses into the blood which then stimulates another gland or organ to respond.*

3. Complete the chart.

Gland	Location	Hormone(s)
Pituitary	<i>the brain, below the hypothalamus</i>	<i>growth hormone, thyroid stimulating hormone (TSH), adrenocorticotrophic hormone (ACTH),</i>
<i>Thyroid</i>	<i>anterior neck, around the trachea</i>	1. Thyroxine (T4)
<i>Adrenal glands</i>	Superior to the kidneys	<i>Adrenal Cortex:</i> 1. <i>Glucocorticoids (Cortisol)</i> <i>Adrenal Medulla:</i> 1. <i>Epinephrine (Adrenaline)</i> 2. <i>Norepinephrine (Noradrenaline)</i>
<i>Pancreas</i>	<i>Retroperitoneal; posterior to the stomach in the left upper quadrant</i>	Insulin and glucagon

4. Describe the action thyroxine hormone has in the body.  
*Regulates oxygen utilization and the basal metabolic rate, cellular metabolism and respiration, growth and development. Thyroid hormones also help to regulate body temperature.*
4. What hormone from the pituitary gland stimulates the release of thyroxine from the thyroid gland?  
*TSH or Thyroid Stimulating Hormone*

6. How does epinephrine and norepinephrine help the body cope with stress?  
*Epinephrine and norepinephrine increase the body's metabolism and blood sugar levels which helps the body cope with the added demands of energy to cope with the stress. The hormones also increase heart rate, respiration rate, cause the peripheral blood vessels to constrict, pupils to dilate, and increase blood flow to the vital organs.*

7. Compare and contrast the effects of insulin and glucagon on the body.  
*Insulin causes a decrease in blood sugar by facilitating the movement of glucose into the body's cells (and out of the blood). Insulin stimulates the formation of glycogen in the muscles and the liver. Insulin also causes the formation of fat or adipose tissue.*  
  
*Glucagon causes an increase in blood sugar by stimulating the breakdown of glycogen from the liver and muscles.*

8. Why is the pituitary the “master gland” of the body?  
*It produces so many hormones that regulate the actions of so many other glands.*

9. Give a function of each of the hormones listed in the chart:

Hormone	Function
hGH	<i>Stimulates the growth and development of bone and muscle</i>
TSH	<i>Stimulates the thyroid gland to produce its hormones (T3 and T4)</i>
ACTH	<i>Stimulates the adrenal cortex to produce its hormones</i>

10. Define stress.  
*Any perceived threat or danger to the body or mind.*

11. Identify stressors.: *answers will vary*

12. What hormone from the pituitary gland stimulates the release of cortisol from the adrenal cortex?

*ACTH or the Adrenocorticotrophic Hormones*

13. Determine which of the two reactions the statements below describe:  
Alarm Reaction - AR or Resistance Reaction - RR

- AR A. Respond immediately
- AR B. Increased heart rate and contractility
- RR C. Long term reaction
- RR D. Increased synthesis of ATP
- AR E. Fight or flight from stress
- RR F. Helps individuals through stressful periods
- AR G. Body temperature increases causes sweating
- AR H. Controlled by hypothalamic hormones

14. Describe the exhaustion phase.

*This is the time at which the body recovers from the stress and the effects of the stress hormones. A person may feel extremely tired as the recovery process occurs.*