

# [Lab 4: endocrine system physiology](https://assignbuster.com/lab-4-endocrine-system-physiology/)

Lab 4: Endocrine System Physiology | 1. | | Refer to Activity 1: Determining Baseline Metabolic Rates. How did the baseline metabolic rates of the three rats differ? Answer: | The metabolic rates for the thyroidectomized and hypophysectomized rats were lower than that of the normal rat. | | | 2. | | Why did the metabolic rates differ? Check all that apply: Answers: | The hypophysectomized rat lacked thyroid-stimulating hormone. The thyroidectomized rat lacked thyroxine hormone. | | | | 3. | | Refer to Activity 2: Determining the Effect of Thyroxine on Metabolic Rate. How did the thyroxine affect the normal rat's metabolic rate? Answer: | It caused the rate to increase. | | | 4. | | What was the effect of thyroxine on the thyroidectomized rat's metabolic rate? Answer: | Thyroxine increased the metabolic rate. | | | 5. | | What was the effect of thyroxine on the hypophysectomized rat? Answer: | Thyroxine increased the metabolic rate. | | | | 6. | | Refer to Activity 3: Determining the Effect of TSH on Metabolic Rate. What is the effect of TSH on the normal rat's metabolic rate? Answer: | TSH increased the metabolic rate. | | | | 7. | | How did the metabolic rate of the thyroidectomized rat injected with TSH compare to its baseline metabolic rate? Answer: | It was the same as the baseline rate. | | | 8. | | What was the oxygen consumption per hour for the hypophysectomized rat injected with TSH? Answer: | 1738. 8 ml/O2/kg/hr | | | | 9. | | Refer to Activity 4: Determining the Effect of Propylthiouracil on Metabolic Rate. What effect did an injection of propylthiouracil have on the metabolic rate of the normal rat? Answer: | The metabolic rate decreased from 1704 ml/O2/kg/hr to 1536 ml/O2/kg/hr. | | | | 10. | | What was the effect of the propylthiouracil on the thyroidectomized rat? Answer: | There was no effect. | | | | 11. | | Refer to Activity 5: Hormone Replacement Therapy. How does the uterus weight of the rat that received estrogen differ from the uterus weight of the rat that received saline? Answer: | The uterus belonging to the rat that received estrogen is heavier than the uterus belonging to the rat that received saline. | | | | 12. | | Which of the following best describes the effects of estrogen injections into the rat? Answer: | The estrogen made the rat uterus more active in follicle development. | | | | 13. | | If testosterone had been administered instead, how would the uteruses have been affected? Answer: | The uteruses would not have been affected. | | | 14. | | Refer to Activity 6: Obtaining a Glucose Standard Curve. What is the glucose reading for the control rat? Answer: | 87 mg/dl glucose | | | | 15. | | What is the glucose level for the experimental rat prior to receiving insulin? Answer: | 129 mg/dl glucose | | | | 16. | | What is the glucose level of the experimental rat after it has been injected with insulin? Answer: | 97 mg/dl glucose | | | 17. | | What is the condition that the injection of alloxan caused in the experimental rat? Answer: | Diabetes mellitus type I | | | 18. | | What is the effect of administering insulin to the control animal? Check all that apply. Answer: | It had no effect. | | | | 19. | | What was the effect of administering insulin to the experimental animal? Answer: | It caused the glucose levels in the blood to decrease. | | | 20. | | Insulin is secreted from which cells in the pancreas? Answer: | Beta cells | | |