

Exercise, CO₂, and Respiration Worksheet

Data Table

Initial circumference before exercising	mm
Final circumference before exercising	mm
Change in circumference (initial – final)	mm
Initial circumference after exercising	mm
Final circumference after exercising	mm
Change in circumference (initial – final)	mm

Post-Lab Questions

- Using both the before- and after-exercising results, calculate the change in circumference of the balloon to determine how much air was needed to cause the BTB color change. Which situation caused the larger change in circumference of the balloon—before or after exercising?
- Which exhaled breath (before or after exercising) contained a higher concentration of carbon dioxide? Explain.
- Compare the color of your two cups of BTB solution to those of your classmates. Did everyone choose the same color for an endpoint?
- Why was it important to stop adding exhaled air after exercise when the BTB color matched that of your initial sample?
- Compare your circumference results to those of your classmates. Did everyone get the same result? Describe some of the factors that would influence the results.
- Athletes train to increase their breathing efficiency. Would you expect trained athletes to have a higher or lower concentration of carbon dioxide in their exhaled breaths? Explain.