

Name \_\_\_\_\_

## Balancing Act: How the Excretory System Maintains Homeostasis

### Open-Ended Response Answer Key

1. In a situation where someone does not drink enough water, the excretory system responds by producing concentrated urine to conserve water and prevent dehydration. This helps maintain homeostasis by ensuring that the body's water levels remain stable. Failure to do so can result in symptoms like dry mouth, reduced urine output, and increased heart rate, disrupting homeostasis.
2. When a person consumes a diet high in salt, the excretory system works to eliminate the excess salt by excreting it in urine. This helps prevent high blood pressure, which can disrupt homeostasis by affecting the body's circulation and increasing the risk of heart disease and stroke.
3. An imbalance in the body's pH level, either too acidic or too alkaline, can disrupt homeostasis by affecting various cellular functions. The excretory system assists in restoring the pH balance by excreting excess hydrogen ions to lower acidity or retaining them to increase alkalinity.
4. If the excretory system is not functioning correctly, waste products may accumulate in the bloodstream, disrupting homeostasis. This can lead to symptoms like fatigue, muscle weakness, and confusion. Health issues such as kidney disease or organ damage may also arise as a result.

