

Weather, Seasons, and Human Health

Science · Answer Key · 8 Questions

1. Which condition is primarily triggered by a lack of sunlight exposure during the winter months, leading to a deficiency in serotonin and vitamin D?

A) Seasonal Affective Disorder

- B) Raynaud's Disease
- C) Hyperthermia
- D) Asthma

2. How does high humidity primarily affect the human body's ability to regulate temperature?

A) It increases the rate of shivering

B) It slows the evaporation of sweat from the skin

- C) It causes the pores to close completely
- D) It increases the heart rate to cool the blood

3. What is the medical term for the localized tissue damage caused by prolonged exposure to freezing temperatures, often occurring during winter?

- A) Heat exhaustion
- B) Hypoglycemia

C) Frostbite

D) Anaphylaxis

4. During hot weather, the body's primary physiological mechanism to prevent hyperthermia is:

- A) Vasoconstriction of peripheral blood vessels
- B) Increased production of subcutaneous fat

C) Vasodilation and sweat evaporation

D) Decreased respiratory rate

5. Why are humans more susceptible to certain viral respiratory infections, like the common cold, during colder months?

A) Viruses only survive in sub-zero temperatures

B) Cold air weakens the mucosal immune response in the nasal cavity

- C) Increased oxygen levels in winter kill immune cells
- D) Cold temperatures accelerate viral mutation rates

6. What happens to peripheral blood vessels when the body is exposed to extreme cold to maintain core body temperature?

- A) Vasodilation
- B) Vasoconstriction**
- C) Hyper-pigmentation
- D) Cellular dehydration

7. Seasonal changes in the length of daylight hours affect the production of which hormone in the pineal gland?

- A) Melatonin**
- B) Adrenaline
- C) Insulin
- D) Thyroxine

8. Extended exposure to high-intensity ultraviolet (UV) radiation during summer months is a known environmental factor for:

- A) Vitamin B12 deficiency
- B) Increased risk of melanoma**
- C) Reduction in bone density
- D) Acute respiratory distress