

Which of the following mechanisms primarily increases heat production in the body during cold exposure?

- A) Sweating
- B) Vasodilation
- C) Increased muscle tone and shivering
- D) Panting

Answer: C) Increased muscle tone and shivering

What is the main method of heat loss at low environmental temperatures (21°C)?

- A) Conduction
- B) Convection
- C) Radiation
- D) Sweating

Answer: C) Radiation

Which hormone is primarily involved in increasing heat production by stimulating metabolic processes?

- A) Insulin
- B) Thyroxine
- C) Melatonin
- D) Prolactin

Answer: B) Thyroxine

How does brown fat contribute to thermoregulation in infants?

- A) By increasing sweat production
- B) By its high rate of metabolism
- C) By increasing blood flow to the skin
- D) By reducing muscle tone

Answer: B) By its high rate of metabolism

Which type of heat loss mechanism is dependent on the evaporation of sweat?

- A) Radiation
- B) Conduction
- C) Convection
- D) Evaporative mechanisms

Answer: D) Evaporative mechanisms

What stimulates the sweat secretion center in the hypothalamus?

- A) High levels of melatonin
- B) Low environmental temperatures
- C) Increased body temperature
- D) Decreased metabolic rate

Answer: C) Increased body temperature

What is the primary thermoregulatory response to a hot environment?

- A) Increasing heat production
- B) Decreasing heat loss
- C) Decreasing heat production

D) Increasing food intake

Answer: C) Decreasing heat production

Which of the following is NOT a symptom of heat stroke?

A) Headache

B) Blurring of vision

C) Increased muscle tone

D) Disorientation or confusion

Answer: C) Increased muscle tone

What is the primary method of heat loss when the environmental temperature exceeds the body temperature?

A) Conduction

B) Convection

C) Radiation

D) Sweating

Answer: D) Sweating

What is the effect of high humidity on sweat evaporation?

A) Increases sweat evaporation

B) Decreases sweat evaporation

C) Has no effect on sweat evaporation

D) Enhances heat production

Answer: B) Decreases sweat evaporation

Which type of sweat gland is responsible for thermoregulatory sweating?

- A) Sebaceous glands
- B) Apocrine sweat glands
- C) Eccrine sweat glands
- D) Ceruminous glands

Answer: C) Eccrine sweat glands

During heat stroke, why does excessive sweating fail to cool the body?

- A) Because of increased body temperature
- B) Due to the high humidity which prevents sweat evaporation
- C) Because of low blood flow to the skin
- D) Due to increased shivering

Answer: B) Due to the high humidity which prevents sweat evaporation

What role does aldosterone play in sweat composition?

- A) It decreases the amount of sweat produced
- B) It increases the salt concentration in sweat
- C) It reduces the salt concentration in sweat by reabsorbing NaCl
- D) It enhances the evaporation rate of sweat

Answer: C) It reduces the salt concentration in sweat by reabsorbing NaCl

Which of the following statements about heat loss by convection is true?

- A) It is the primary method of heat loss in high environmental temperatures
- B) It involves the transfer of heat between objects not in direct contact
- C) It requires air currents to effectively remove heat from the body
- D) It accounts for the majority of heat loss at rest

Answer: C) It requires air currents to effectively remove heat from the body

What is the main function of the heat gain center in thermoregulation?

- A) To increase heat loss
- B) To stimulate sweating
- C) To increase heat production
- D) To inhibit muscle activity

Answer: C) To increase heat production

Which of the following mechanisms decreases heat loss by the body in cold environments?

- A) Vasodilation of skin blood vessels
- B) Increased sweating
- C) Vasoconstriction of skin blood vessels
- D) Increased food intake

Answer: C) Vasoconstriction of skin blood vessels

Why is protein considered the preferable food in cold climates?

- A) It has a high specific dynamic action (SDA)
- B) It is digested more quickly than carbohydrates
- C) It promotes vasodilation
- D) It reduces shivering

Answer: A) It has a high specific dynamic action (SDA)

Which of the following is a non-evaporative mechanism of heat loss?

- A) Insensible perspiration
- B) Sweating
- C) Radiation
- D) Panting

Answer: C) Radiation

What happens to the body temperature regulation when exposed to an environmental temperature above 34°C?

- A) Heat is primarily lost through non-evaporative methods
- B) Evaporation of sweat becomes the primary method of heat loss
- C) Body temperature drops below normal
- D) The body gains heat from the environment

Answer: B) Evaporation of sweat becomes the primary method of heat loss

What immediate first-aid measure can be taken for someone suffering from heat stroke?

- A) Wrapping the person in a warm blanket
- B) Placing the person in a cold water bath
- C) Providing hot fluids to drink
- D) Encouraging physical exercise

Answer: B) Placing the person in a cold water bath