Chapter 2: Cold Therapy

Multiple Choice

1. Which of the following variables is least likely to affect whether the application of a cold pack is effective in decreasing tissue temperature?

A. Time of exposure

B. Activity level of the patient

C. Ambient air temperature

D. Body surface area covered by the cold pack

**ANS: C**

2. When determining the time of exposure necessary to reach the desired effects of cold application, which of the following is not an important factor to consider?

A. The amount of nervous tissue in the treatment area

B. Increased adipose tissue in the treatment area

C. A large scar in the treatment area

D. Joint replacement in the treatment area

**ANS: A**

3. By what mechanism of action is heat transferred when placing an ice pack on an injured knee?

A. Convection

B. Evaporation

C. Conduction

D. Electric Current

**ANS: C**

4. Which one of the following medical conditions is a contraindication for cold therapy?

A. Hypotension

B. Peripheral vascular disease

C. Osteoarthritis

D. Acute inflammation

**ANS: B**

5. During a cold pack treatment, your patient reports burning and tingling sensations. You perform a skin check and notice pallor and cyanosis in the distal extremity exposed to the cold pack. Which of the following problems is most likely?

A. Reflex vasodilation

B. Cold urticaria

C. Cryoglobulinemia

D. Raynaud’s phenomenon

**ANS: D**

6. Which of the following is a benefit of applying cold therapy immediately following an acute trauma?

A. Increased oxygen demand

B. Arterial vasodilation

C. Lowered metabolism

D. Diminished pain threshold

**ANS: C**

7. Which of the following is true regarding the use of cold therapy on spasticity?

A. Applying cold therapy to a spastic muscle has no effect on the spasticity.

B. All individuals with neurological conditions report improvement in symptoms when they become cold.

C. With the application of cold therapy, the presence of spasticity may be temporarily reduced allowing increased functional ability of the affected limb.

D. Cold application results in an increase in gamma-motoneuron firing within the spastic muscle.

**ANS: C**

8. Which of the following is true regarding muscle strength assessment after applying cold therapy to a patient?

A. After cold application of less than 5 minutes, a muscle may produce less force than in its noncooled state.

B. Muscle strength is not influenced by cold application.

C. After a longer duration cold application, a muscle may be able to produce more force than its noncooled state.

D. Muscle strength assessment should not be performed immediately following cold application as it may lead to inaccurate findings.

**ANS: D**

9. Which of the following statements is true regarding vapocoolant sprays?

A. They are effective in decreasing pain and edema following acute trauma.

B. They can used for temporary pain relief prior to stretching muscles with local spasm.

C. There is a large body of strong evidence to support the effectivity.

D. They transfer heat from the body via convection.

**ANS: B**

10. What is the benefit of the addition of compression to cold therapy?

A. Increases rate of cooling and external pressure to reduce edema

B. Decreases capillary hydrostatic pressure to limit edema formation

C. Limits irritation of inflamed tissues

D. Prevents further injury to inflamed tissues

**ANS: A**

11. Which of the following responses to the application of a cold pack would require the therapist to immediately discontinue the treatment?

A. Reddening of the skin

B. Raised, red, irregularly shaped areas on the skin

C. Numbness of the skin after prolonged application

D. Feelings of burning followed by aching of the skin

**ANS: B**

12. Which of the following is true regarding cold therapy application methods?

A. A bag of frozen peas can be used for home cold pack application.

B. Recommendations for temperature and duration of water baths are inversely related.

C. Ice massage should be conducted over larger treatment areas rather than smaller ones to be most effective.

D. Menthol gels or creams decrease subcutaneous tissue temperature.

**ANS: A**

13. Which of the following cold therapy techniques has the greatest danger of causing nerve injury?

A. Ice bag around the elbow for more than 1 hour

B. Cold water bath for a sprained ankle for 15 minutes

C. Vapocoolant spraying of the hamstrings at their origin

D. Ice massage for 5 minutes over the lateral epicondyle

**ANS: A**

14. You are treating a 16-year-old female with a diagnosis of acute left knee sprain presenting to the clinic with pain and swelling in the knee. Which modality would be the best choice to treat these symptoms?

A. Ice massage

B. Controlled-cold compression unit

C. Cold bath

D. Vapocoolant spray

**ANS: B**

15. Which of the following cold therapy applications is most appropriate for the given scenario?

A. Vapocoolant spray for limited knee flexion in patient who developed a DVT 3 days post total knee surgery

B. Ice massage for right lateral epicondylitis in patient with history of cryoglobulinemia

C. Controlled-cold compression unit for acute left ankle sprain in patient with medical history of

diabetic neuropathy

D. Cold pack to cervical spine following whiplash injury in patient with leukemia

**ANS: D**