**Chapter 4: Sports-Injury Prevention**

**REVIEW QUESTIONS**

1. Differentiate between intrinsic and extrinsic types of causative factors leading to sports injury. Provide several examples of both.

Answer: Extrinsic factors include equipment, environment, type of activity, and conditioning errors. Intrinsic factors include age, gender, body size, history of illness, fitness, muscle strength, ligamentous laxity, skill, psychological status, and perhaps even overall intelligence.

2. List four types of intrinsic factors related to sports injury that a medical doctor might identify during a preparticipation physical examination.

Answer: Injuries to:

1. Cervical spine
2. Upper extremities
3. Lumbar spine
4. Lower extremities

3. What are two disadvantages to using an individual format for a preparticipation physical examination?

Answer: Cost; some physicians lack a thorough understanding of sports injuries

4. List the seven components of fitness as described in the chapter.

Answer: Aerobic fitness, muscle strength, power, endurance, flexibility, nutrition and body composition.

5. Briefly describe the relationship between volume, intensity, and frequency of training as they relate to periodization.

Answer: The smallest component (*of periodization*) is called a microcycle, which consists of 2 to 4 weeks of training with fluctuations in intensity, duration (*volume*) and frequency.

6. Define the terms *macrocycle, mesocycle,* and *microcycle* as they relate to a sports training program.

Answer: The periodization model includes several components that represent increasingly smaller units of training time. The largest unit is known as a macrocycle and typically encompasses one calendar year. The macrocycle can then be divided into smaller units known as mesocycles, which last from several weeks to a month or more. The smallest component is called a microcycle, which consists of 2 to 4 weeks of training with fluctuations in intensity, duration, and frequency.

7. True or False: According to the chapter, athletes, regardless of sport, can benefit from possessing a relatively high level of aerobic fitness.

Answer: True. In short, regardless of the sport, athletes who enter the season with a high level of aerobic fitness are less prone to injury.

8. What is the meaning of the acronym ROM.

Answer: Range of motion

9. Discuss the advantages and disadvantages of the four categories of stretching exercises.

Answer: Some research indicates that, when comparing these techniques, static stretching is probably the most effective, with effects lasting up to 90 minutes. Evidence suggests that the best time to use static stretching is at the end of a workout when the tissues are warmer due to increased blood flow. Ballistic stretching is considered the least effective method and may even result in injury. The medical evidence is overwhelming in discouraging the use of ballistic forms of stretching.

10. True or False: Athletes in high-risk sports should be informed of the potential hazards and prevention strategies.

Answer: False. Athletes must be informed about hazards and prevention.

11. What injury risk factors may be present in the upper extremity?

Answer: Ligamentous laxity, tight shoulder muscles, and shoulder girdle weakness all increase risk for injury.

12. What injury risk factors may be present in the lower extremity?

Answer: Tight, weak hamstrings, weak lower extremity muscles, joint malalignments, and poor stretching and muscle conditioning were all identified as risk factors.

13. What are the two basic formats for preparticipation physical exams? Which is the ideal format?

Answer:

1.) The athlete’s personal physician performs the PPE in the physician’s office.

2.) The “coordinated medical team” approach, which accommodates groups of athletes in one session. The ideal option is the first option.

14. What advantages does the “coordinated team approach” have over the personal physician exam?

Answer: Possible cost savings for the athlete, a provision for athletes who do not have a personal physician, and the opportunity to involve other health care professionals in the PPE.

15. How often should PPEs be completed by athletes?

Answer: The secondary-school-level athlete should receive a physical biannually. Older athletes should receive a physical at 2–3 year intervals. A comprehensive PPE should be administered to all athletes entering middle or high school, or transferring from another school. All athletes should also receive an annual update including a comprehensive history.

16. True or False: The dietary habits of any athlete, regardless of sport, have a profound influence on overall performance and on recovery from injury.

Answer: True

17. Why is it important for coaches, administrators, and athletic trainers to monitor extrinsic risk factors for sports injury?

Answer: They should monitor all of these risk factors in an effort to identify and eliminate any potential risks for athletes.

18. True of False: Indoor physical activity does not pose a significant risk for thermal injury.

Answer: False. Indoor activity can pose a significant risk for thermal injury, especially if the participant is not properly hydrated or if the indoor temperature and humidity are high.

19. List the primary concerns for safe participation with respect to indoor facilities.

Answer:

1.) Lighting

2.) Playing surfaces

3.) Room dimensions

20. True or False: Protective equipment plays a vital role in the prevention of injuries.

Answer: True. This is especially true in sports such as football, ice hockey, baseball, and softball. But, virtually all sports can benefit from the use of some form of safety equipment, even something as simple as a mouth guard.