Instructor's Guide

The Basics of Athletic Training, 8th edition

An Introduction in the Care and Prevention of Athletic Injuries

Contents

Notes to Instructors

This text has been divided into fourteen chapters and provides the reader with a step-by-step presentation of various duties and responsibilities of physicians, athletic trainers, and other licensed health care providers. To enhance chapter learning activities, student will have access to selected terms (appendix A), answers to chapter questions (appendix C), websites for health care and the sports industry (online & appendix B), and infographics (online). Educators have access to chapter PowerPoint slides (online) and twenty true/false questions per chapter. The authors have made available ***Online Resources*** that are *e*asily accessed using a one-time access code provided by the publisher (www.sagamorepub.com). The **375+ *anatomical graphics*** allow the student to view dynamic aspects of joint anatomy (bones, ligaments, muscles and function, range of motion, dermatomes and myotomes, etc.) along with **25 *educational videos*** outlining selected taping and wrapping techniques. Additionally, the textbook will provide a review of common injuries, evaluation format, basic treatment protocols, and medical referral guidelines. At the completion of the text, the athletic training student will have learned the basics of athletic training and have a working knowledge of common preventive, evaluation, treatment, and rehabilitation techniques in sports medicine. It is the goal of this text to stimulate further learning in the identification, treatment and care, and prevention of sports-specific injuries. Also, websites for "Health Care and The Sports Industry" are listed and answers to selected Chapters Review Questions are available for the student.

Chapter 1: Organization and Administration

Terms (Appendix A)

Resources

- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ PowerPoint slides (online)

True/False Questions

1. Athletic training is recognized by the American Medical Association, Health Resources and Services Administration, and the Department of Health and Human Services as an allied health care profession. **True p. 2**

2. The Board of Certification (BOC) is the credentialing agency that provides a certification program for the entry-level athletic training profession. **True p. 2**

3. In 1990, the American Medical Association recognized athletic training as an allied health care profession. **True p. 3**

4. The National Athletic Trainers' Association addresses clinical practice updates, current events and other timely topics by issuing the following statements: Position Statements: which is a Brief statements on timely topics. **False p. 3**

5. The athletic training facilities include the following areas: administrative office, prevention (taping), hydrotherapy, rehabilitation, treatment (electrical therapy), physician's examination office, and storage room. **True p. 7**

6. OSHA stands for Occupational Safety and Health Association. **False p. 9**

7. Health Insurance Portability and Accountability Act of 1996 (HIPAA) is a federal regulation that was passed to ensure the rights of the athlete (patient) when it comes to health records. **True p. 11**

8. HIPAA also regulates exactly when information can be exchanged and with whom it can be shared. **False p. 11**

9. Athletic trainers are employed by the armed services. **True p. 13,14**

10. One of the best ways to see how prepared your school or organization is to providing student-athlete athletic health care, check out the Program Assessment for Safety in Sport or PASS. **True p. 15**

11. Athletic trainers are employed by Rodeo organizations. **True p. 14**

12. 37% of secondary schools in the United States do not employ athletic trainers for the health care needs of their student-athletes. **True p. 13**

13. As a health care profession, athletic training has its own code of ethics. **True p. 12**

14. The athletic training/sports medicine program includes the custodian of the building. **False p. 6,7**

15. CAATE stands for Commission on Acceptance of Athletic Training Education. **False p. 3**

16. The National Athletic Trainers' Association (NATA) was founded in 1950 and is located in Indianapolis, Indiana. **False p. 3**

17. Licensed Athletic Trainers work under the direction of or in collaboration with a physician. **True p. 2**

18. Certified Athletic Trainers are employed by companies such as Boeing, UPS and FedEx. **True p. 13**

19. Athletic Training is an Master's Degree entry level profession. **True p. 3,4**

20. FERPA stands for Family Educational Rights and Protection Act. **False p. 12**

Chapter 2: Recognition, Evaluation, and Management of Athletic Injuries

Terms (Appendix A)

Resources

- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B))
- ✓ PowerPoint slides (online)

True/False Questions

1. PPE stands for Practice Participation Exam. **False p. 20**

2. The athletic training staff and athletic coaches should never transport an athlete in a private vehicle. **True p. 22**

3. The primary survey consists of checking: Circulation, Airway and Breathing. **False p. 22**

4. HOPS stands for History, Observation, Performance and Special Tests. **False p. 22**

5. SOAP Notes stand for Subjective, Objective, Assessment and Plan. **True p. 24**

6. You should cover all wounds with a dry, sterile dressing before applying a splint and notify the receiving medical facility of all open wounds. **True p. 24**

7. Acute injury should include the basic treatment protocol of protection, rest, ice, compression, elevation, and support (PRICES). **True p. 25**

8. CPR stands for Cardiac Pulmonary Resuscitation. **False p. 22**

9. When utilizing compression for an acute injury Remove the wrap every 3 hours. **True p. 25**

10. When utilizing ice as a treatment, you should apply it for 10 minutes or less, then allowing the skin to return to normal temperature before reapplying. **True p. 25**

11. When applying a splint, support the joint above and below the injury when applying on the extremity. **True p. 24**

12. You should always check the pulse, motor, sensation (PMS) and capillary refill at a point distal to the site of injury. **True p. 24**

13. A wooden board, wire ladder, structural aluminum malleable splint (SAM), precut cardboard splints, pillow, and blankets are examples of fixation splints. **True p. 24**

14. Traction Splints are used for long bone fractures (femur and humerus), they prevent fractured bone ends from touching. **True p. 24**

15. No advanced medical training is needed to become proficient in application of traction splints. **False p. 24**

16. Subjective assessment involves visual, physical, and functional inspections. **False p. 24**

17. When evaluating an injury, palpation is the physical inspection of an injury and should always be performed on the injured side first. **False p. 23**

18. The secondary survey consists of two elements: history and physical examination. **True p. 22**

19. EAP stands for Emerging Activity Plan. **False p. 21**

20. The history is that part of the evaluation where the athletic trainer asks the coach what happened. **False p. 22**

Chapter 3: Injuries and the Healing Process

Terms (Appendix A)

Resources

- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ Infographics (online)
- ✓ PowerPoint slides (online)

True/False Questions

1. Inflammation is absolutely essential for complete healing of an injured anatomical structure. **True p. 30**

2. The five cardinal signs of inflammation are pain, swelling, redness, heat, and loss of function. **True p. 30**

3. Accumulation of fluids in an injured/damaged area is called edema. **True p. 30**

4. The two most convenient sites for taking the pulse are the neck (carotid artery) and the wrist (radial artery). **True p. 31**

5. Normal pulse for a child is 60-80 beats per minute. **False p. 31**

6. White skin indicates circulated blood is poorly oxygenated. **False p. 31**

7. PEARL is an accepted protocol in the examination of the eyes and stands for pupils equal and reactive to light. **True p. 31**

8. Movement of a patient is classified into three basic patterns. **False p. 31**

9. Nerve stimulation is considered a vital sign. **True p. 31, 32**

10. Normal blood pressure in healthy adults is 120/80 mmHg (systolic/diastolic) or slightly lower readings. **True p. 32**

11. A contraindication and precaution on the use of ice include a Vasovagal reaction. **True p. 33**

12. A treatment that combines hot and cold water immersion is called diathermy. **False p. 34**

13. Acute injury should include the basic treatment protocol of protection, rest, ice, compression, elevation, and support (PRICES). **True p. 35**

14. There are four phases of physical rehabilitation. **False p. 36**

15. In planning a physical rehabilitation program, the athletic trainer must deal with the athlete's decreasing pain, effusion, and inflammatory response to trauma. **True p. 36**

16. The goal of a progressive rehabilitation is to return to pain-free, active range of motion that will increase muscular strength, power, and endurance to the injured anatomical structures. **True p. 36**

17. The instrument used to measure and assess joint range of motion (ROM) is called a slide rule. **False p. 36**

18. Contusion is another name for a bruise. **True p. 37**

19. Bursitis is the inflammation of a bursa sac, a fluid filled sac, found in joints or between bony prominences and muscle or tendon. **True p. 37**

20. A sprain occurs in muscles. **False p. 37**

Chapter 4: Biohazardous Protocols and Skin Conditions

Terms (Appendix A)

Resources

- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ Infographics (online)
- ✓ PowerPoint slides (online)

True/False Questions

1. OSHA stands for Occupational Safety and Health Association. **False p. 42**

2. The Centers for Disease Control and Prevention (CDC) estimates that exposure to Hepatitis B is 100 times more likely than exposure to HIV/AIDS. **True p. 42**

3. If your school has employees who, in the course of their work, can reasonably be expected to come into contact with human blood, certain body fluids, or infectious waste, the school must follow CDC guidelines. **False p. 42**

4. Game officials and referees are considered employees and follow the same guidelines as athletic trainers. **True p. 42**

5. Latex gloves or NRL (natural rubber latex) provide a suitable barrier for athletic trainers to protect against blood borne pathogens. **True p. 43**

6. Gloves are always optional when you are evaluating an injured athlete. **False p. 43, 44**

7. When making a bleach and water solution the bleach should be mixed with cool water. **True p. 44**

8. NFHS stands for the National Federation of State High School Associations. **True p. 44**

9. There are five classifications of wounds. **True p. 44**

10. There are 8 signs of infection listed in this chapter. **True p. 45**

11. If there is not a biohazard container available it is okay to put the soiled gauze and gloves in the regular trash can. **False p. 44**

12. Impetigo is the medical term for athlete's foot. **False p. 47**

13. Skin conditions such as herpes simplex are not very contagious and cannot be spread easily and rapidly to other team members. **False p. 47**

14. Indirect transmission of MRSA can occur from shared personal items (clothing, towels, razors) or shared athletic equipment. **True p. 46**

15. Impetigo is not very contagious and therefore you don't need to worry about it. **False p. 47**

16. There are three (3) degrees of burns. **True p. 46**

17. You should always try to use a callus file when he affected area is wet. **False p. 46**

18. If the blister has ripped open, the standard treatment is to remove as much of the dead skin as possible, apply an antibacterial ointment to the area, and protect the area with a pad. If the blister is open and cared for with an antibiotic cream, apply a non-adhesive pad with a lubricant during physical activity to reduce further friction at the site of the blister. Following activity, thoroughly cleanse the area and apply a non-adhesive pad with zinc oxide or antibiotic cream until the blister has healed. **True p. 46, 47**

19. With a puncture wound a small hole in the tissues produced by an object (e.g., a nail) piercing the skin layers. External bleeding is limited; however, internal damage to organs may cause bleeding. **True p. 45**

20. Avulsion wounds can be treated with a steri-strip to minimize scaring. **False p. 45**

Chapter 5: Mental Health and Wellness Issues

Terms (Appendix A)

Resources

- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ Infographics (online)
- ✓ PowerPoint slides (online)

True/False Questions

1. Athletes are not immune from experiencing mental health disorders and should be monitored for any change in behavior, especially following an injury. **True p.52**

2. A medical exit from sport caused by injury, health condition, or concussion(s) can be a life-altering event with significant and long-lasting psychological impact. **True p.52**

3. Suboptimal sleep has been shown not to increase lapses of attention, to slow reaction time, to result in shorter time to exhaustion, and to lead to poorer nutrition choices, and it has been associated with greater injury risk. **False p.53**

4. Obstructive Sleep Apnea is defined as a stopping breathing due to the airway collapsing. **True p.53**

5. According to the National Sleep Foundation, teenagers should sleep between 8 and 10 hours/night with adults needing to sleep between 7 and 9 hours. **True p.53**

6. The National Sleep Foundation defines good sleep quality as follows: falling asleep within 30 minutes, sleeping 85% of the time you are in bed, waking up only once per night, and being awake for 20 minutes or less after initially falling asleep. **True p.53**

7. Anorexia nervosa is characterized by a person refusing to eat or a person not eating enough to maintain normal body functions, such as 15% below ideal body weight and loss of menses. **True p.54**

8. Bulimia is characterized by overeating (binge) and then vomiting (purge) at least two times per week for 3 months, in which the athlete will consume large quantities of food and immediately purge it through vomiting, laxatives, diet pills, or over exercise. **True pg. 54**

9. A balanced diet is the best way to give the body energy and adequate amounts of vitamins and minerals, in which athletes should follow a nutritious diet that emphasizes a variety of high-carbohydrate, lean protein, and heathy fat foods. **True p.55**

10. Athletic performance can be affected by food selection and time prior to activity, there for common advice is that an individual should wait an hour or more after eating to exercise, pending composition of the food. **True p.55**

11. If an athlete eats an ideal pre-competition meal and still experiences hunger pangs or weakness during and after practice, they may need an extra snack, as long as the feeling of having food in the stomach does not interfere with their athletic performance. **True p.55**

12. The exact content and purity of energy drinks cannot be ensured, because there are no regulatory controls over these products. **True p.55**

13. The effects of using marijuana could include inhibition of the sweating mechanism in hot environments, which can lead to heat illness, major impairment of coordination as measured by hand steadiness, body sway, and accuracy of execution of movement, impairment of tracking performance, perceptual tasks, and vigilance, slowed reaction time to visual and auditory stimuli, altered perception of speed, time, and space, short-term and long-term memory loss, and prolonged learning time. **True p.56**

14. Probably the most serious effect of marijuana on the very young athlete is the establishment of a set of personality changes characteristic in marijuana users. **True p.56**

15. Anabolic steroids, synthetic derivatives of the male hormone testosterone, are some of the most controversial drugs linked to athletics. **True p.57**

16. Moderate amounts of caffeine can increase mental alertness, but too much can cause anxiety, hamper performance, and increase heart rate. **True p.58**

17. The use of vitamins, minerals, herbs, amino acids, proteins, energy products, and other dietary supplements should be questioned unless prescribed by the athletes' physician or other licensed health care provider. **True p.58**

18. Through mandates by sports organizations, interscholastic, intercollegiate, amateur, and professional athletes have become subject to anti-doping testing for the use of prohibited substances and prohibited methods. **True p.59**

19. Health care providers are not responsible to recognize when an athlete has a problem and to provide the athlete with the proper referral. **False p.59**

20. Eating disorders must be treated like any other physical illness or disease, should not be dismissed as a minor issue, and must be treated and monitored by a qualified physician, athletic trainer, or other qualified health care provider. **True p.59**

Chapter 6: Important Issues to Consider in Athletic Health Care

Terms (Appendix A)

Resources

- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ Infographics (online)
- ✓ PowerPoint slides (online)

True/False Questions

1. Three basic environmental conditions that affect athletic performance are heat, cold, and altitude. **True p.64**

2. High temperatures and elevated humidity can positively affect athletic performance and adversely affect health, which in turn can cause the student-athlete to succumb to heat illness and can even threaten life. **False p.64**

3. Electrolyte drinks are best used before and after practice, when gastric emptying time is less crucial. **True p.65**

4. Athletes who are taking medicines and/or have suffered from recent gastrointestinal distress are not at a higher risk for heat-related illness. **False P. 65**

5. Heat stroke is the most serious form of hyperthermia and is considered a life-threatening medical emergency! **True p.67**

6. The first-aid procedure for heat stroke is *Cool first*, Transport second and Activate emergency management system—call 911 immediately! **True p.67**

7. Heat exhaustion is more serious and may be more difficult to recognize than heat cramps, however, it is usually not life-threatening, but if not treated properly, it can become a medical emergency. **True p.66**

8. Signs of Hypothermia include but not limited to constant shivering, sluggishness or clumsiness, poor judgment, apathy, slurring of speech, listlessness, involuntary muscle movement, croaky voice, sleepiness, and generalized rigidity of muscles. **True p.68**

9. Exertional sickling is not a condition that affects athletes who have sickle cell trait. **False p.69**

10. To avoid medical issues with altitude, athletes should be given the opportunity to train at the higher elevations for a time, which allows their bodies to adjust to the limited oxygen atmosphere. **True p.70**

11. Circadian dysrhythmia occurs when the body's internal clock is confused, which is caused when athletes travel across numerous time zones. **True p.70**

12. The best treatment for circadian dysrhythmia includes keep athletes well de-hydrated and increase caffeine intake. **False p.70**

13. Colds are primarily transmitted by touch, not by coughing and sneezing. **True p.70**

14. Prior to return to activity, the athlete should be given adequate time to recover from the common cold or respiratory tract infection. **True p.70**

15. Hyperventilation is defined as increased inspiration and expiration of air as a result of increase in rate or depth of respiration or both, which leads to decreased CO2, increased O2, and respiratory alkalosis. **True p.71**

16. Epilepsy is defined as recurrent disturbances of brain function that may be manifested as seizures, loss of consciousness, or psychic disturbances. **True p.71**

17. An athlete should always be denied water or rest. **False p.65**

18. Dehydration, which is probably the primary cause of many exertional heat illnesses, can occur not only in hot and humid weather but also during the coldest days of the year. **True p.66**

19. The most common sites for heat cramps are the upper extremities. **False p.66**

20. Environmental heat problems will occur in sport and prior to the start of any season, in-which all organizations should implement a comprehensive emergency action plan (EAP) that addresses the issues of environmental concern with all stakeholders (health care providers, coaches, administrators, etc.). **True p.64**

Chapter 7: Taping Techniques, Wrapping Techniques for Compression and Support, and Protective Devices

Terms (Appendix A)

Resources

- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ PowerPoint slides (online)

True/False Questions

1. Before applying a preventive technique (tape, wrap, and/or device), an athletic trainer, a qualified physician, or another qualified health care professional should never complete a proper injury evaluation. **False p.76**

2. Following the injury evaluation, the athletic trainer or another qualified health care professional can then recommend a proper protective technique that would ensure the application of the proper taping technique, wrapping technique, and/or protective devices for support and stabilization. **True p.76**

3. Supportive techniques, in conjunction with a rehabilitation program, doesn't enhance an individual's return to activity. **False p.76**

4. Adhesive tape is traditionally marketed as nonelastic, white tape. **True p.76**

5. Elastic tape has the ability to contract and expand and is commonly used in areas that require greater freedom of movement. **True p.76**

6. The primary purpose for tape application is to provide additional support, stability, and compression for the affected body part. **True p.77**

7. To reduce the chance of skin irritation after any therapeutic treatment, allow only limited adequate time for the skin to return to its normal temperature. **False p.77**

8. Only elastic tapes are produced in a variety of widths. **False p.77**

9. In preparing the body for taping application, consider these items: removal of hair (optional), clean the area, special considerations, spray adherent (optional), skin lubricants, underwrap or cohesive tape, and proper body position. **True p.78**

10. When pulling the tape from the skin at an angle of 180 degrees, exercise care to minimize removal of skin tissue and skin irritation. **True p.78**

11. If you apply supportive techniques to athletes, be aware of specific rules governing tape application in the particular sport, in which your application must fall within the guidelines established for each sport by appropriate governing bodies. **True p.79**

12. Elastic wraps are primarily used in the application of either compression or support to injured anatomical structures, can contract and expand, and are commonly used in areas that need greater freedom of movement. **True p.79**

13. A protective device, typically classified as custom or off-the-shelf, is a commercial product that is well designed and provides manufacturing liability for proper application instructions. **True p.80**

14. As recommended by the manufacturer and Centers for Disease Control and Prevention, proper steps in cleaning and disinfecting protective equipment should occur on a semi-annual basis. **False p.80**

15. As required, a qualified physician or qualified health care professional can not prescribe a custom brace. **False p.80**

16. Three common specialty supplies used in braces and special devices techniques are foam, felt and thermoplastic material. **True p.83**

17. The physical structures of the human body can be assisted by the application of braces, tape, and wrap. **True p.85**

18. Cohesive (self-adherent) tape is a dressing material that will adhere to itself but not to other surfaces and comes in a variety of widths, lengths, and colors. **True p.77**

19. Elastic tape also has the characteristics of non-conformability and limited strength, and can be placed on the body part with wrinkles and at unique angles. **False p.76**

20. In the preparation of some body parts, skin protection must be considered, such as a Band-Aid with a lubricant. **True p.77**

Chapter 8: Foot, Ankle, and Lower Leg

Terms (Appendix A)

Resources

- ✓ Anatomical Graphics (online)
- ✓ Videos (online)
- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ Infographics (online)
- ✓ PowerPoint slides (online)

True/False Questions

1. The talocrural joint is formed by three bones: tibia, fibula, and phalanges. **False p.88**

2. The foot is the site of some of the most minor, yet some of the most debilitating, conditions (blisters, calluses, athlete's foot, turf toe, and ingrown toenails), suffered by athletes. **True p.88**

3. The ligaments most commonly injured on the lateral aspect of the ankle are the anterior talofibular, calcaneofibular, and posterior talofibular. **True p.89**

4. Fat pads are specialized soft tissue structure for weight-bearing and absorbing impact, whereas synovial sacs located over bony prominences throughout the body are called bursas. **True p.89**

5. Signs of a fracture include, but are not limited to, direct or indirect pain, deformity, or a grating sound at the injury site. **True p.92**

6. The Ottawa Ankle Rules state that a patient should receive an X-ray for an ankle or foot if any one of the following conditions are true: inability to walk four steps immediately after the injury; tenderness on the posterior edge or tip of the medial or lateral malleolus; tenderness on the navicular; tenderness on the base of the fifth metatarsal. **True p.93**

7. The mechanism of injury for a medial ankle sprain is usually a combination of excessive inversion and plantar flexion. **False p.93**

8. The term shin splints has inaccurately become a catchall term that describes pain or injury of the anterior portion of the lower leg and the medical term for this condition is medial tibial stress syndrome. **True p.94**

9. Compartment syndrome is a condition that, when suspected, should be referred immediately to the qualified physician and treated as a medical emergency! **True p.95**

10. Protective devices are beneficial if properly selected, used in the appropriate setting, correctly fitted, and follow the guidelines of the specific sport. **True p.98**

11. Compression wraps are bandages that cover securely around the body structures, made to fit snugly to reduce swelling, increase circulation, and provide support. **True p.98**

12. Upon completion of any taping and/or wrapping procedure, check for neatness and gaps, adequate support, along with proper function of the affected area. In certain situations, you might ask the individual to perform function tests, to establish appropriate technique application. **True p.104**

13. When applying an ankle compression using an elastic wrap, always begin the 4-in. elastic wrap at the distal part of the phalanges, spiral the wrap around the foot and ankle and on the distal aspect of the lower leg, and secure the wrap with a small strip of 1 ½-in. adhesive tape. **True p.100**

14. With all special tests, never look for joint instability, disability, and pain. **False p.92**

15. Special functional tests to assess disability can include any of the following: joint stability (ligament), muscle/tendon, accessory anatomical structures, inflammatory conditions, range of motion (active, assistive, passive, and resistive) and/or pain or weakness in the area. **True p.92**

16. The sensory distribution of a single nerve root is called a myotome, which produces sensation in a corresponding anatomical area. **False p.91**

17. The motor distribution of a muscle group innervated by a single nerve root is called a dermatome, which it produces movement of anatomical structures. **False p.91**

18. Both feet contain about one fourth of the total number of bones in the body, in which each foot has 26 bones (7 tarsals, 5 metatarsals, and 14 phalanges) and 38 joints. **True p.88**

19. Thirteen major muscles support the ankle joint, in which two of the muscle tendon groups most important in preventing ankle injuries are the achilles tendon and the peroneus muscle group. **True p.89**

20. Inversion is defined as turning the sole of the foot outward (subtalar or talocalcaneal joint movement). **False p. 91.**

Chapter 9: Knee and Thigh

Terms (Appendix A)

Resources

- ✓ Anatomical Graphics (online)
- ✓ Videos (online)
- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ Infographics (online)
- ✓ PowerPoint slides (online)

True/False Questions

1. The knee is the largest joint in the body, however, despite its size though, it is structurally very weak. **True p.108**

2. The stability of the knee's bony structure is partially compensated for by weak ligaments and potentially even stronger muscle support. **False p.108**

3. The evaluation process to help determine the type of injury involves four steps: history, observation, palpation, and special tests. **True p.112**

4. The knee joint contains two tough, fibrous cartilages known as menisci, called the lateral meniscus and medial meniscus. **True p.108**

5. The bursas are closed, fluid-filled sacs that serve as cushions against friction over a prominent bone, or where a tendon moves over a bone. **True p.109**

6. The synovial membrane is a large, closed sac that lines the inside of the knee joint, helping to lubricate the joint. **True p.109**

7. The myotomes L4 aids in Knee extension. **False p.111**

8. One conditions that indicate an athlete should be referred for physician evaluation is any doubt regarding the severity or nature of the injury. **True p.112**

9. A common knee sprain occurs in football when a player receives a direct force to the lateral side of the knee joint, called a varus force. **False p.113**

10. With a second-degree sprain, one or more ligaments have been completely torn, resulting in joint instability. **False p.113**

11. Chondromalacia patellae is a painful degenerative condition that results in the irritation and softening of the cartilage on the posterior aspect of the patella. **True p.114**

12. Osgood–Schlatter disease, common in adolescents and is characterized by swelling below one or both knees, involves the growth center of the tibial tubercle to which the patellar tendon attaches. **True p.115**

13. Muscle strength, power, endurance, and functional balance are not necessary for the prevention of injury. **False p.115**

14. Prior to the athlete beginning of any rehabilitation exercise program, the athletic trainer should consult with the sports medicine team and establish a program tailored for the athlete and the specific injury. **True p.115**

15. A qualified physician or a health care professional and a medical equipment specialist can determine whether the individual is best suited for an off-the-shelf or custom brace. **True p.117**

16. One conditions that indicate an athlete should be referred for physician evaluation is significant pain. **True p.112**

17. Flexion is defined as increasing the angle between the femur and the tibia (e.g., straightening the knee). **False p.111**

18. Contusion injuries are caused by a direct blow or by a fall onto the knee. **True p.113**

19. An "unhappy triad" (unhappy tetrad) is when the patient tears their ACL, MCL, and medial meniscus. **True p.113**

20. One of the common mechanisms for injuring the ACL is a noncontact mechanism in which the athlete goes to plant the foot and turn directions, causing a torsion of the ACL and a rupture of the ligament. **True p.114**

Chapter 10: Hip and Pelvis

Terms (Appendix A)

Resources

- ✓ Anatomical Graphics (online)
- ✓ Videos (online)
- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ PowerPoint slides (online)

True/False Questions

1. The largest muscle group around the hip and pelvic region is the gluteal muscles. **True p. 126**

2. The sensory distribution of a single nerve root is called a "myotome." **False p. 126**

3. The motor distribution of a muscle group innervated by a single nerve root is a "dermatome." **False p. 126**

4. An anatomical plane that divides the body into top and bottom portions is called the "Transverse Plane." **True p. 128**

5. "Adduction" of the hip is moving the lower leg away from the midline in the frontal plane about a sagittal axis. **False p. 129**

6. "Flexion" of the hip is decreasing the angle between the anterior thigh and abdomen through the sagittal plane about a frontal axis. **True p. 129**

7. "External Rotation" of the hip is rotation of the femur away from the midline about a vertical axis. **True p. 129**

8. When evaluating the seriousness of an injury, allied health personnel use the acronym HOPS which stands for History, Observation, Palpation and Special Test. "Observation" is when you compare the uninjured to the injured lower extremity and look for bleeding, deformity, swelling, discoloration, scars, and other signs of trauma. **True p. 129**

9. The proper term for the four fused vertebrae on the lower end of the spine are called the tailbone. **False p. 130**

10. Hip strains commonly occur when the joint has received a violent twisting motion of the torso accompanied by the feel being fixed in a stationary position or by forced internal and external rotation of the hip or leg. **True p. 130**

11. Injuries to the male genitalia are common, resulting from a direct blow or testicular torsion. **True p. 131**

12. A hip pointer occurs when a direct blow occurs to the hip joint. **False p. 131**

13. A slipped capital femoral epiphysis (SCFE) is an injury to the growth plate of the wheal of the femur and is most likely to occur in boys aged 10 to 14. **True p. 131**

14. A hip dislocation is not a medical emergency if there is no fracture of the femoral head. **False. p 131**

15. The bones of the hip are the Femur, Pelvis (ilium, ischium, pubis), Sacrum (five fused vertebrae) and Coccyx (four fused vertebrae). **True p. 126**

16. When assessing movements of the hip and muscles involved, the "Rectus Femorus" muscle is responsible for extension of the knee and flexion of the hip. **True p. 127**

17. Protective devices such as a neoprene "Groin Strain Support" wrap should only be used during the rehabilitation phase of injury. **False p. 135**

18. When applying the "Hip Flexor Wrap" (elastic wrap) the individual should stand with the affected extremity placed in hip extension and the foot in slight external rotation. **False p. 134**

19. When applying the "Hip Adductor Wrap" (elastic wrap) the individual should stand with the affected extremity placed in hip flexion and the foot in slight internal rotation. **True p. 135**

20. The athlete should be referred to a physician for evaluation if there are signs of circulation and neurological impairment due to injury. **True p. 130**

Chapter 11: Shoulder and Upper Arm

Terms (Appendix A)

Resources

- ✓ Anatomical Graphics (online)
- ✓ Videos (online)
- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ PowerPoint slides (online)

True/False Questions

1. The shoulder is one of the most vulnerable structures in the body because it moves in multiple directions. **True p. 140**

2. The shoulder and arm are made up of these four bones (sternum, clavicle, humerus, and scapula). **True p. 140**

3. The clavicle attaches to the sternum at the acromioclavicular joint. **False p. 140**

4. The rotator cuff muscle group includes the supraspinatus, infraspinatus, teres major and subscapularis. **False p. 140**

5. If an athlete is experiencing gross deformity of the shoulder, the allied health personnel should refer to a physician. **True p. 144**

6. One of the assessment tests for glenohumeral joint stability is the anterior/posterior translation (assesses anterior/posterior laxity) **True p. 144**

7. Fractures of the clavicle usually occur to the outer third of the bone close to the acromioclavicular joint. **False p. 145**

8. All first-time dislocations of the glenohumeral joint should be considered a fracture until X-ray reveals otherwise. **True p. 145**

9. Most glenohumeral shoulder dislocations occur when the arm is adducted and internally rotated. **False p. 145**

10. The three less movable joints in the shoulder girdle are the acromioclavicular, sternoclavicular and the coracoclavicular. **True p. 145**

11. In a third-degree sprain, one or more of the supporting ligaments are stretched. **False p. 145**

12. The acromioclavicular (AC) sprain is the most common in the shoulder girdle. **True p. 146**

13. The mechanism of injury for an acromioclavicular sprain is direct blow to the shoulder and falling on an outstretched arm. **True p. 146**

14. Due to the limited movement of the shoulder, muscle strains are common. **False p. 146**

15. A cervical or shoulder injury can cause one or more of the brachial plexus nerves to become injured by contusions or by stretching the cervical area. **True p. 146**

16. Overhead throwing injuries are sometimes labeled as overuse injuries. **True p. 146**

17. Before an athlete can return to action from a shoulder injury, make sure the athlete has partial range of motion and no pain during functional upper extremity activities. **False p. 147**

18. The shoulder spica wrap should provide support for the glenohumeral, coracoclavicular and acromioclavicular joints. **False p. 148**

19. C4 myotomes initiate shoulder shrugs. **True p. 143**

20. The internal derangement test assesses the integrity of and stability of the glenoid labrum **True p. 144**

Chapter 12: Elbow, Forearm, Wrist, and Hand

Terms (Appendix A)

Resources

- ✓ Anatomical Graphics (online)
- ✓ Videos (online)
- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ Infographics (online)
- ✓ PowerPoint slides (online)

True/False Questions

1. The elbow joint permits movements of flexion, extension, and supination. **False p. 154**

2. The muscles that control movement of the elbow originate above the elbow on the humerus are the biceps, triceps, and brachialis. **True p. 154**

3. The wrist and hand contain 27 bones (8 carpal bones, 5 metacarpals, and 14 phalanges). **True p**. **154**

4. When assessing the elbow for ligament stability, the valgus or abduction stress test evaluates the lateral (radial) collateral ligament. **False p. 158**

5. The "tinel's sign" detects inflammation or entrapment of the ulnar nerve at the elbow. **True p. 159**

6. Resisted wrist extension determines the presence of medial epicondylitis. **False p. 158**

7. The term "gamekeeper's thumb" assesses the ligamentous stability of the ulnar collateral ligament at the metacarpophalangeal joint. **True p. 159**

8. The "anatomical snuffbox" compression test indicates a possible fracture of the 3rd metacarpal bone. **False p. 159**

9. Excessive stress to joint can cause stress to ligaments and are classified as sprains. **True p. 159**

10. In a third-degree sprain, one or more ligaments have been completely torn. **True p. 160**

11. "Carpal Tunnel Syndrome" is caused by pressure on the median nerve. **True p. 160**

12. One of the most disabling injuries in the wrist area is a scaphoid fracture **True p. 160**

13. Mallet Finger is a fracture of the interphalangeal joint of the finger. **False p. 161**

14. Could the "Wrist Hand Compression" wrap be used for the first metacarpophalangeal joint of the hand. **False p. 167**

15. C5 dermatomes provide sensory area of the lateral forearm. **False.158**

16. Should an athlete be referred to a physician for evaluation if they are experiencing loss of sensation to (motor or sensory). **True p.159**

17. Throwing injuries may be prevented if a person works on core strength, restrict high pitch counts and no trick pitches just to name a few. **True p. 161**

18. A "Boxers Fracture" is a fracture /dislocation of the base of the first metacarpal of the hand. **False p. 161**

19. The range of motion of the elbow is flexion, extension, supination, and pronation. **True p.162**

20. If an athlete has a dislocation of a phalanges, the athletic trainer may reduce the dislocation and then have the athlete x-rayed. **False p.159**

Chapter 13: Thorax and Abdomen

Terms (Appendix A)

Resources

- ✓ Anatomical Graphics (online)
- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ Infographics (online)
- ✓ PowerPoint slides (online)

True/False Questions

1. The human body is comprised of two main cavities, the thorax and the abdomen. **True p. 172**

2. The thorax cavity contains the major organs for both digestion and excretion, along with the distal esophagus, aorta, and vena cava. **False p.172**

3. A stitch in the side is a muscle spasm or trapped gas leading to a sharp pain in the side, which often occurs after physical exertion. **True p. 180**

4. The transverse plane divides the body top to bottom. **True p.177**

5. Thoracic and abdominal injuries are less common than extremity injuries, however, these injuries can be more life-threatening. **True p.175**

6. It is essential to monitor these vital signs. **True p. 175**

7. To conduct the primary survey, first assess the athlete for indications of serious injury and approach them in a calm and reassuring manner. **True p.175**

8. In the Valsalva maneuver, the athlete takes a deep breath, holds that breath, then strains as if having a bowel movement. **True p. 176**

9. Pneumothorax is the result of air leaking from the lung or from the outside via a penetrating chest wound into the pleural space, or the area between the lung and chest wall, which can be spontaneous (without a known cause) or due to either blunt trauma or penetrating trauma. **True p.179**

10. The thorax, or chest cavity, contains the heart, lungs, trachea, proximal esophagus, and the proximal portions of the "great vessels," namely, the aorta and vena cava. **True p.172**

11. Appendicitis is imperfect digestion associated with pain, nausea, and vomiting. **False p.178**

12. It is not essential to monitor these vital signs. **False p. 175**

13. The sagittal plane divides the body from left to right. **True p.177**

14. When assessing thoracic injuries, look specifically for fractures and/or separations in the bones and costal cartilages of the rib cage. **True p.178**

15. Transverse plane bisects the body into upper and lower halves. **True p.173**

16. Liver, gallbladder, pylorus of stomach, head of pancreas, hepatic flexure of colon, portion of small intestine, right kidney, adrenal gland, and distal vena cava are organs that are located in the upper left portion of the abdomen. **False p.172**

17. The abdominal cavity contains the major organs for both digestion and excretion, along with the distal esophagus, aorta, and vena cava. **True P.172**

18. Myocardial infarction (heart attack) is the result of decreased oxygenated blood flow (ischemia) to the muscular tissues of the heart itself, which is due to traumatic disruption of the myocardial blood flow but is more commonly the result of atherosclerotic disease of the coronary vessels. **True p.178**

19. Pneumonia is infection of the lungs caused primarily by bacteria, viruses, chemical irritants, vegetable dusts, and allergens, which symptoms may include fever, productive cough, and chest pain. **True p.179**

20. Hyperventilation is an increase in the respiratory rate resulting in a respiratory alkalosis (high pH) due to an acid base imbalance and is usually caused by anxiety or prolonged activity. **True p.179**

Chapter 14: Head, Neck, and Spine

Terms (Appendix A)

Resources

- ✓ Anatomical Graphics (online)
- ✓ Answers to chapter questions (Appendix C)
- ✓ Websites for Health Care and the Sports Industry (online & Appendix B)
- ✓ Infographics (online)
- ✓ PowerPoint slides (online)

True/False Questions

1. When a player shows ANY features of a concussion, the player should be evaluated by a physician or other licensed healthcare provider on site using standard emergency management principles, and particular attention should be given to excluding a cervical spine injury". **True p.186**

2. Athletic training students are responsible for stabilizing or transporting severely injured athletes. **False p.186**

3. The athletic training student's responsibilities in emergency situations include the following: recognizing signs and symptoms of serious injury, alerting the athletic trainer, athletic coach, and team physician of potential dangers, follow a venue-specific emergency action plan to handle emergency transport, increasing awareness of the causes of serious injury, and ensuring equipment and the playing area are safe. **True p.186**

4. The head of an average adult weighs approximately 14 pounds, makes up 9% of the total body surface area, and produces a considerable strain on the cervical spine during physical activity—particularly in contact sports. **True p.187**

5. The spine is divided into five distinct regions: cervical, thoracic, lumbar, sacral, and coccyx. **True p.188**

6. Evaluation of head injuries is of the utmost importance to the team physician, athletic trainer, and coach, in which some signs and symptoms of head injuries will present immediately, while others may not appear for days. **True p.190**

7. People with concussions usually fully recover with proper assessment, limited physical activity, and appropriate follow-up medical care. **True p.191**

8. Post-concussion syndrome (PCS) is a complex disorder in which a variable combination of post-concussion symptoms—such as headaches and dizziness—last for several weeks or even months after the injury that caused the concussion. **True p.192**

9. A subdural hematoma is a most uncommon athletic head injury that results in death. **False p. 193**

10. Cardiovascular challenge (biking, running, calisthenics) is the first step in the return to play protocol after returning to neurological baseline following a concussion. **True p.193**

11. A qualified physician must evaluate all injuries to the head, neck, and spine. **True p.194**

12. Sending an athlete back to competition before they are adequately healed leaves the player susceptible to reinjury and/or further complicates the rehabilitation process. **True p.196**

13. Protective devices are beneficial if properly selected, used in the appropriate setting, correctly fitted, properly applied, and used within the rules and guidelines of the specific sport. **True p.197**

14. Palpation (touching of anatomical structures), Distraction (light/mild traction to determine injured anatomical structures) and compression (light/mild compression to determine injured anatomical structures) are three techniques to establish bone integrity. **True p.195**

15. Not all head injuries should be taken seriously, be referred to a physician for evaluation and follow-up care, and some athletes should be allowed to return to play without physician approval. **False p.194**

16. Return to learn occurs after the resolution of concussion symptoms and baseline testing, in which the student must be in class without difficulty prior to returning to play. **True p.192**

17. The return-to-play protocol doesn't always have follow a stepwise progression. **False p.193**

18. All sports professionals to complete the Centers for Disease Control and Prevention (CDC) HEADS UP: Safe Brain, Stronger Future online educational training programs. **True p.186**

19. A brachial plexus injury can occur either by stretching or compressing the neck. **True p.195**

20. Double vision is a symptom of a blow-out orbital fracture. **True p.196**