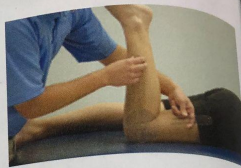


Unit 5 Ch.13

CHAPTER 13

Fundamental Concepts of Evaluation



Objectives

When you finish this chapter you should be able to:

- Discuss the athletic trainer's ability to make an accurate clinical diagnosis.
- Review the terminology used in injury evaluation.
- Apply the HOPS off-the-field evaluation scheme.
- Examine patient cultural, privacy and safety issues that pertain to the manner in which an evaluation is conducted.

- Organize the process for an off-the-field or progress evaluation.
- Discuss documentation in injury evaluation using a SOAP note format and progress notes.

Key Terms

- anatomic position
- body planes
- anatomical directions
- abdominopelvic quadrants
- biomechanics
- pathomechanics
- etiology
- mechanism
- pathology
- symptom
- sign
- diagnosis

- prognosis
- sequela
- syndrome
- HOPS
- active range of motion
- resisted range of motion
- manual muscle test
- passive range of motion
- cultural diversity
- SOAP note
- progress notes

Injury evaluation is an essential skill for the athletic trainer.¹⁸ In athletic training, four distinct evaluations are routinely conducted: (1) The *preparticipation examination*, which was discussed in Chapter 2, is done prior to the start of preseason practice; (2) the initial *on-the-field injury assessment*, which was discussed in great detail in Chapter 8 is done immediately after acute injury to rule out injuries that may be life-threatening, to determine the immediate course of acute care, necessary first aid, how the patient should be transported from the field, and the approach to handling emergency situations; (3) a more detailed *off-the-field injury evaluation* is performed routinely after the immediate on-the-field evaluation either on the sidelines or in the athletic training clinic, a hospital or an outpatient clinic, an emergency room, or a physician's office after appropriate first aid has been rendered; and (4) a *progress evaluation* is done periodically throughout the rehabilitative healing process to determine the progress and effectiveness of a specific treatment regimen. This chapter concentrates on the off-the-field evaluation and the progress evaluation.

Athletic trainers use their evaluation skills to make an accurate clinical diagnosis.

Athletic trainers can expect to be arranging preparticipation exams, performing both on- and off-the-field evaluations, and writing progress evaluations throughout the course of rehabilitation.

Basic Knowledge Requirements

The athletic trainer who is examining a patient with an injury must have a general knowledge of normal human anatomy and biomechanics and an understanding of the potential hazards inherent in a particular activity. Without this information, accurate assessment is impossible.

Normal Human Anatomy

Surface Anatomy Understanding typical surface, or topographical, anatomy is essential when evaluating a possible injury.¹⁹ Key surface landmarks provide the

examiner with indications of the normal or injured anatomical structures lying underneath the skin.¹⁷

Body Planes and Anatomical Directions Associated with surface anatomy is the understanding of body planes and anatomical directions.¹⁷ All planes and directions use the **anatomic position** as a reference (Figures 13-1 and 2). **Body planes** are used as points of reference from which positions of body parts are indicated. The three most commonly mentioned planes are the sagittal, transverse, and coronal (or frontal) planes (Figure 13-2). The sagittal plane runs vertically from front to back, or anterior/posterior, and divides the body into right and left sides. The transverse plane runs horizontally and divides the body into upper and lower parts. The coronal, or frontal, plane runs vertically from right to left and divides the body into front (anterior) and back (posterior). **Anatomical directions** refer to the position of one part in relation to another (Figure 13-3).

Abdominopelvic Quadrants and Regions The **abdominopelvic quadrants** are the four corresponding regions of the abdomen that are divided for evaluative and diagnostic purposes (Figure 13-1A). A second division system divides the abdominopelvic area into nine **regions** (Figure 13-1B). Clinicians use the quadrants and regions as reference points for locating underlying organs or abdominopelvic pain or abnormality (Figure 13-1C&D).

Musculoskeletal System Anatomy Anyone examining the musculoskeletal system for injuries must have an in-depth knowledge of both structural and functional anatomy.⁵ This knowledge encompasses the major joints and bony structures as well as skeletal musculature.

Standard Musculoskeletal Terminology for Bodily Positions and Deviations

When assessing the musculoskeletal system, the athletic trainer must use a standard terminology to convey precise information to other health care providers who may become professionally involved with the athlete.¹² These terms are found in Table 13-1.

Biomechanics

An understanding of biomechanics is the foundation for the assessment of musculoskeletal injuries.

Biomechanics is the application of mechanical

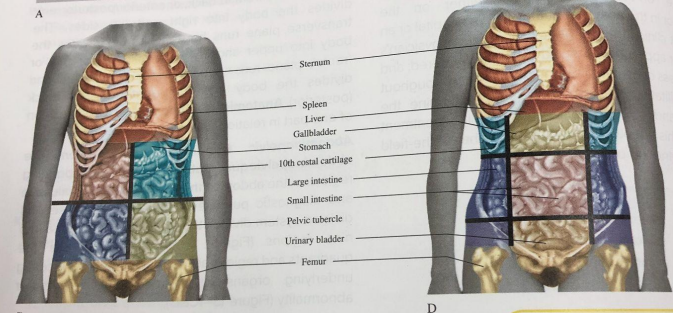
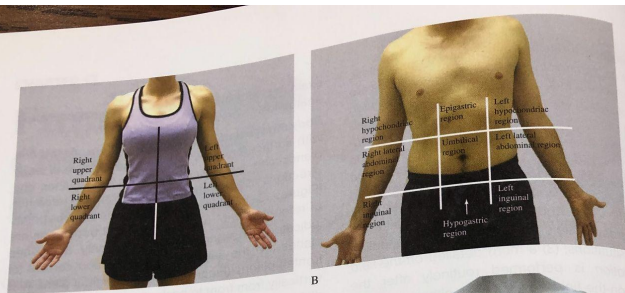


FIGURE 13-1 Division of the abdomen into quadrants and regions. (A&C) Four quadrants. (B&D) Nine regions.

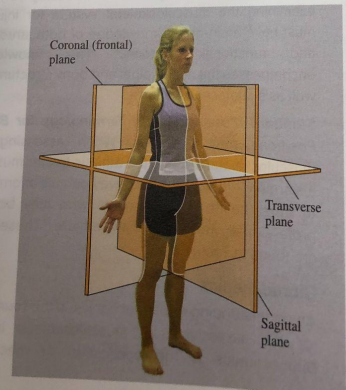


FIGURE 13-2 Knowledge of body planes helps provide points of reference. This individual is standing in the anatomic position.

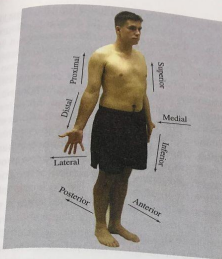


FIGURE 13-3 Anatomical directions refer to the position of one body part in relation to another. anterior = in front of posterior = in back of superior = above inferior = below distal = farther away proximal = closer to medial = toward the middle lateral = away from the middle

forces, which may stem from within or outside the body, to living organisms. **Pathomechanics** refers to mechanical forces that are applied to the body because of a structural body deviation, leading to faulty alignment. Pathomechanics often cause overuse syndromes.

Understanding the Activity

Understanding the activity that the injured patient is involved in is critical if the athletic trainer is to be

TABLE 13-1 STANDARD ORTHOPEDIC DEFINITIONS FOR POSITIONS AND DEVIATIONS

Term	Definition
Abduction	To draw away or deviate from the midline of the body.
Adduction	To deviate toward or draw toward the midline of the body.
Eversion	Turning outward.
Extension	To straighten; when the part distal to a joint extends, it straightens; joint angle decreases toward 0 degrees.
External (lateral) rotation	Rotary motion in the transverse plane away from the midline.
Flexion	To bend; when a joint is flexed, the part distal to the joint bends; joint angle increases toward 180 degrees.
Internal (medial) rotation	Rotary motion in the transverse plane toward the midline.
Inversion	Turning inward.
Pronation	Applied to the foot and assuming the foot is in a prone position, it refers a combination of eversion and abduction movements, resulting in a lowering of the medial margin of the foot; applied to the hand, the palm is turned downward.
Supination	To assume a supine position; applied to the foot, raising the medial margin of the foot; applied to the hand, turning the palm upward.
Valgus	Deviation of a part or portion of the extremity distal to a joint away from the midline of the body.
Varus	Deviation of a part or portion of an extremity distal to a joint toward the midline of the body.

effective in determining the mechanism of injury, making an accurate clinical diagnosis, and designing a rehabilitation program that will address the functional aspects of returning to that activity. To fully understand injuries that occur in a particular activity, the athletic trainer must possess detailed knowledge and be able to apply the correct kinesiological and biomechanical principles that can correct faulty movement patterns.

Descriptive Assessment Terms

When evaluating injuries, examiners use certain terms to describe and characterize what is being learned about the condition.¹² The athletic training student should become familiar with these terms.

Etiology refers to the cause of an injury or disease (for example, a patient rolls the foot inward when landing after jumping). In sports medicine, the term *mechanism of injury (MOI)* is often used interchangeably with *etiology*. A **mechanism** is the mechanical description of the cause (for example, inversion and plantar flexion). **Pathology** refers to the structural and functional changes that result from the injury process.

After developing an understanding of an injury's etiology, the athletic trainer ascertains symptoms and signs. **Symptom** refers to a *perceptible* change in a patient's body or its functions that indicates an injury or a disease. Symptoms are subjective; the patient describes them to the athletic trainer or physician. In comparison, a **sign** is objective, a definitive and obvious indicator of a specific condition. Signs are often determined when the patient is examined.

After it is inspected, an injury may be assigned a *grade*. Grade 1, 2, or 3 corresponds to an injury that is mild, moderate, or severe, respectively. Sometimes the term *degree* is used in place of *grade*, depending on the athletic trainer's preference.

Diagnosis denotes the name of a specific condition. To establish the diagnosis of a patient's injury or illness, the athletic trainer must study all aspects of the condition. A *differential diagnosis* is a systematic method of diagnosing a disorder that lacks unique symptoms or signs. The differential diagnosis is a list of possible injuries that cannot be ruled out until more information is obtained, typically through diagnostic tests. Diagnosis involves a process of including, excluding, and prioritizing possibilities by expecting the most serious injury first.²⁸ Prioritizing

means to list the possible injuries from the most likely to the least likely. Applying the differential diagnosis technique, the athletic trainer first develops a list of possible injuries. By obtaining a history, observing, palpating, and conducting tests, the clinician can include or exclude some of the possible causes. Occasionally, the terms *working diagnosis* and *hypothesis* are also used to refer to the differential diagnosis. These terms also suggest a process for determining the most likely diagnosis for that condition. Once all the possible information has been gathered about the patient's condition, a **prognosis** is made. A prognosis is a prediction of the course of the condition. In other words, the patient is told what to expect as the injury heals. The amount of pain, swelling, or loss of function is discussed. **Prognosis** also refers to the length of time predicted for complete recovery. For an athlete, prognosis translates into "the length of time before I can compete."

Sequela refers to a condition following and resulting from a disease or an injury. Sequela is an additional condition developed as a complication of an existing disease or injury. For example, pneumonia might result from a bout with the flu, or osteoarthritis might follow a severe joint sprain.

The term **syndrome** is refers to a group of symptoms and signs that, together, indicate a particular injury or disease.

The Off-the-Field Injury Evaluation Process

Once the patient has been transported from the site of initial injury, away from the excitement and confusion inherent in an athletic arena, a more detailed secondary or off-the-field injury evaluation is performed. This detailed evaluation may be performed on the sideline, in the athletic training clinic, in an emergency room, or in a sports medicine clinic. An injury may be evaluated immediately after the patient has been injured when it is still in an acute phase, or it may take place several hours or perhaps even days following traumatic injury.

The evaluation process is divided into four broad categories: history, observation, palpation, and a number of *special tests* that provide additional information about the extent of injuries.²⁷ This

evaluation scheme
HOPS format. HO
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History

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Focu

Off-the-f

History

- Injuries
- Related
- Prese
- Mech
- Injury
- Pain
- Joint
- Det
- Pas

Obser

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- A
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- S

Pal

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evaluation scheme is sometimes referred to as the HOPS format. HOPS involves collecting information about an existing injury or illness and then making a decision about what the problem might be.

History

Obtaining as much information as possible about the history of the injury is perhaps the single most important aspect of the injury evaluation. Understanding how the injury may have occurred (the mechanism of injury) and listening to the patient's complaints and answers to key questions can provide important clues to the exact nature of the injury. The

Taking a detailed history from the athlete is perhaps the most critical aspect of the off-the-field evaluation.

athletic trainer becomes a detective in pursuit of as much accurate information as possible, which will lead to a determination of the true nature of the injury.⁷

It is alright to observe the patient when taking a history but there should be no palpation while the patient is explaining what happened and what he or she is feeling.²⁷

13-1 Clinical Application Exercise

A fencer comes to a clinic complaining of pain in his shoulder, which he has had for about a week. He indicates that he first hurt the shoulder when lifting weights but did not think it was a bad injury. During the past week he has not been able to lift because of pain. He has continued to fence, but his shoulder seems to be getting worse instead of better.

What is the standard evaluation scheme that the athletic trainer should use?

Focus Box 13-1

Off-the-field evaluation sequence

History

- Injuries to same body part
- Related injuries
- Present
 - Mechanism of injury (MOI)
 - Injury location
 - Pain characteristics
 - Joint responses
- Determining whether the injury is acute or chronic
- Past

Observation

- Demeanor
- Movement
- Posture
- Asymmetries
- Deformity
- Swelling, redness, warmth

Palpation

- Bony palpation
- Soft-tissue palpation

Special Tests

- A. Movement assessment
 - Active range of motion
 - Manual muscle testing
 - Passive range of motion
 - Goniometric measurement of joint range
- B. Neurological examination
 - Cerebral function
 - Cerebellar function
 - Cranial nerve function
 - Sensory testing
 - Reflex testing
 - Determining projected/referred pain
 - Motor testing
- C. Testing Joint Stability
- D. Postural examination
- E. Testing functional performance

The athletic trainer should ask the following questions at minimum:

- What is the problem?
- Where specifically is the injury?
- How did it occur?
- When did it occur?
- Has this ever happened before? If so, when?
- Did you fall? How did you land?
- Which direction did your joint move?
- Did you hear or feel anything when it occurred?
- What type of pain is it (dull, burning, aching, sharp)?
- Where is the pain?
- Does the pain change at different times?
- Does pain increase at night?
- Does the patient feel sensations other than pain?
- Does the patient feel instability?
- If the injury is related to a joint, is there instability?
- Does the joint feel as though it will give way?
- Does the joint lock and unlock?

Observation

The examiner gains knowledge and understanding of the patient's major complaint not only from the history but also through general observation, often done at the same time the history is taken. What is observed is commonly modified by the patient's complaints.¹⁹ The following are suggested as specific points to observe:

- Is there an obvious deformity?
- How does the patient move?
- Are there any obvious body asymmetries?
- Are there unnatural protrusions or lumps, such as occur with a dislocation or fracture?
- Is there a postural malalignment?
- Is there a limp?
- Are movements abnormally slow, jerky, and asynchronous?
- Is the patient unable to move a body part?
- Is the patient holding his or her body stiffly?
- Does the patient's facial expression indicate discomfort or lack of sleep?
- Are there any obvious body asymmetries?
- Does soft tissue appear swollen or wasted as a result of atrophy?
- Are there abnormal sounds, such as crepitus, when the athlete moves?

- Does a body area appear inflamed?
- Is there swelling, heat, or redness?
- Is there any type of discoloration (Beyond redness)?

Palpation

Palpation is the process of using the hands to systematically examine the body by locating or feeling specific anatomic structures that may help identify or diagnose the nature of an injury. The two types of palpation are bony and soft tissue. Like all examination procedures, palpation must be performed systematically.²⁰ The athletic trainer starts with very light pressure, followed by gradually deeper pressure, and usually begins away from the site of complaint and gradually moves distal to proximal.²⁰ Both the injured and noninjured sites should be palpated and compared. Through palpation, with the patient as relaxed as possible, the athletic trainer can assess normal bony and soft-tissue relationships.²²

Special Tests

Special tests have been designed for almost every region to detect specific pathologies.²⁰ They are often used to substantiate what has been learned from the history, observation, and palpation portions of the evaluation process.²⁰ Special tests should be performed bilaterally beginning with the uninjured side to compare what is "normal" for that patient with what the injured side feels like. caution: A joint should not be moved or stressed when a fracture is suspected.

Movement Assessment If a joint or soft-tissue lesion exists, the patient is likely to complain of pain on movement.

Active Range of Motion Active range of motion (AROM) is joint motion that occurs because of a muscle contraction. The athletic trainer should evaluate quality of movement, range of movement, motion in other planes, movement at varying speeds, and strength throughout the range but in particular at the endpoint.⁶

Resisted movement The ability of the injured patient to tolerate varying levels of **resisted movement** can indicate a great deal about the extent of the injury to the muscle. For the patient, the limitation in muscular strength is generally caused by pain.² As pain diminishes and the healing process progresses, levels of muscular strength gradually return to normal.

Manual Muscle testing Manual muscle testing is used to quantify the patient's ability to generate

Mover
• Active
• Rest
• Pass

muscle contraction usually performed on individual muscles and tested through application of manual force to move the patient to offer resistance to the athletic trainer. This classification system indicates a complete manual muscle

Passive Range of Motion

Passive Range of Motion (PROM) is the range of motion that the patient can achieve without any active muscle contraction. The athletic trainer should pay attention to the patient's

Throughout athletic training and the pre-examination, the patient's end of the contraction

Grade

5

4

3

2

1

Movement assessment:

- Active movement
- Resistive movement
- Passive movement

muscle contraction (force) that can resist motion. It is usually performed with the patient positioned so that individual muscles or muscle groups can be isolated and tested through a full range of motion via the application of manual resistance.¹⁵ The ability of the patient to move through a full range of motion or to offer resistance to movement is subjectively graded by the athletic trainer according to various classification systems and grading criteria. Table 13–2 indicates a commonly used grading system for manual muscle testing.

Passive Range of Motion (PROM) is that portion of the ROM through which the joint can move without a muscle contraction. When **PROM** is being assessed, the patient must relax completely and allow the athletic trainer to move the extremity to reduce the influence of the contractile elements. Particular attention should be directed toward the sensation of the patient at the end of the passive range.

Throughout the passive range of movement, the athletic trainer is looking for limitation in movement and the presence of pain. A patient's report of pain before the end of the available range probably indicates acute inflammation. If no pain occurs at the end of the range, the condition is chronic and contractures have replaced inflammation.⁴

Goniometric Measurement of Joint Range Goniometry which measures joint range of motion, is an essential procedure during the early, intermediate, and late stages of injury. Full range of motion of an affected body part is a major criterion for a patient to return to activity. Active and passive joint range of motion can be measured using goniometry (Figure 13–4).²¹

Although a number of different types of goniometers are on the market, the most commonly used are ones that measure 0 to 180 degrees in each direction. The arms of the instrument are usually 12 to 16 inches long, with one arm stationary and the other fully movable.²³

A reading in degrees of motion should be taken and recorded as either active or passive range of motion for that movement.

The normal available range of motion for specific movements at individual joints is indicated in Table 13–3.

Neurological Examination

Performing a detailed and accurate neurological exam is difficult for everyone, including physicians.⁹ The exam consists of six major areas: *cerebral function, cranial nerve function, cerebellar function, sensory testing, reflex testing, referred pain, and motor testing*. In cases of musculoskeletal injury that do not involve head injury, it is generally not necessary to assess cerebral function, cranial nerve function, and cerebellar function. The athletic trainer should concentrate instead on sensory testing, reflex testing, and motor testing to determine the involvement of the peripheral nervous system after injury.

Testing Joint Stability A number of specific tests for determining the integrity of the ligaments surrounding

TABLE 13–2 MANUAL MUSCLE STRENGTH GRADING

Grade	Percentage (%)	Qualitative Value	Muscle Strength
5	100	Normal	Complete range of motion (ROM) against gravity with full resistance
4	75	Good	Complete ROM against gravity with some resistance
3	50	Fair	Complete ROM against gravity with no resistance
2	25	Poor	Complete ROM with gravity omitted
1	10	Trace	Evidence of slight contractility with no joint motion
0	0	Zero	No evidence of muscle contractility



FIGURE 13-4 Measuring joint range of motion. Goniometric measurement of knee joint flexion.

TABLE 13-3 RANGE OF JOINT MOTION

Grade	Percentage (%)	Qualitative Value
Shoulder	Flexion	180
	Extension	50
	Adduction	40
	Abduction	180
	Internal rotation	90
Elbow	Flexion	145
	Extension	80
Forearm	Pronation	85
	Supination	80
Wrist	Flexion	70
	Extension	20
	Abduction	45
Hip	Adduction	125
	Flexion	10
	Extension	45
	Abduction	40
	Internal rotation	45
Knee	Flexion	45
	Extension	140
Ankle	Plantar flexion	20
	Dorsiflexion	40
Foot	Inversion	40
	Eversion	20

a particular joint provide information about the grade of a sprain of a particular ligament and can determine the extent of the functional instability of the joint.

Testing Functional Performance Functional performance testing may be done as part of an initial evaluation to determine whether an injury is severe enough to keep the patient from activity. It may also be used to evaluate progress during a rehabilitation program. Decisions about when a patient is ready to return to full activity following injury should be based to a large extent on performance on functional tests.²

Neurological examination:

- Cerebral function
- Cranial nerve function
- Cerebellar function
- Sensory testing
- Reflex testing
- Projected or referred pain
- Motor testing

The major concern is whether the patient has regained full range of motion, strength, speed, endurance, and neuromuscular control and is pain free.

Functional performance testing determines whether the athlete has full strength, joint stability, and coordination, and whether the part is pain free.

Postural Examination It is important to observe the athlete's total static posture, paying special attention to the low back, pelvis, and hips.⁸ When observing the patient's standing static posture, the athletic trainer must accept the fact that postural alignment varies considerably among individuals. Therefore, only obvious asymmetries should be considered. The entire body should be observed from all angles—lateral, anterior, and posterior. In the anterior and posterior assessment, the athletic trainer should look

Considerations in the Process

Health care must always be based on an understanding of the patient's values, practices, and cultural differences. Health care must also be based on many factors, including nationalities, genders, and socioeconomic status. Athletes and their trainers must make it a priority to understand the values of the athletes. But more important, the trainer must be sensitive to the needs of the athlete. The treatment techniques used must always be safe in an athletic setting. The trainer should consider the athlete's position in the examination.

Progression

The athletic program must be designed for the patient's rehabilitation. The trainer must be able to adapt the program to the athlete's progress. The program should be progressive and should occur over time.

for asymmetries or differences in height between anatomical landmarks on each side of the body.⁶

Consideration of Cultural Diversity in the Evaluation Process

Health care providers in general and athletic trainers in specific must always be sensitive to and have some understanding of the patient's cultural beliefs, practices, and customs that collectively create that patients' value systems. These values may potentially be based on many factors including religion, ethnicity, nationality, gender, sexual orientation, age, disability, or socioeconomic status.²⁶ The athletic trainer must make it a priority to learn about the **cultural diversity** of the athletes with whom they may come in contact. But more importantly, they must truly respect and be sensitive to the patient's cultural beliefs.²⁴

Patient Comfort and Safety Issues The athletic trainer must be willing to adjust evaluation and treatment techniques to make certain that the patient always feels comfortable and does not feel threatened or unsafe in any way. For example, the athletic trainer should consider having a second clinician or witness in the examining room particularly when evaluating or treating a minor or patient of the opposite gender.

It is also important to keep patient privacy concerns in mind. For example, the athletic trainer should make certain the patient is appropriately covered or positioned during an evaluation or treatment.

Progress Evaluations

The athletic trainer who is overseeing a rehabilitation program must constantly monitor the progress of the patient toward full recovery throughout the rehabilitative process.⁷ In many instances, the athletic trainer will be able to treat the injured patient on a daily basis. This close supervision affords the athletic trainer the luxury of being able to continuously adjust or adapt the treatment program based on the progress made by the patient on a day-to-day basis.

The progress evaluation should be based on the athletic trainer's knowledge of exactly what is occurring in the healing process at any given time. The timelines of injury healing provide the framework

13-2 Clinical Application Exercise

A gymnast is 4 months post-anterior cruciate ligament (ACL) reconstruction. She was last seen in the clinic 3 months ago prior to leaving for summer vacation. She has returned for the beginning of classes and visits the athletic trainer to see what kind of activities she should be doing in her rehabilitation program.

To generate a progress note, what type of information does the athletic trainer need to know?

that dictates the progress of the rehabilitation program. The athletic trainer must understand that the aggressive approach taken in rehabilitation does little to speed up the healing process. Progression will be limited by the constraints of the healing process.⁷

Progress evaluations will be more limited in scope than the detailed off-the-field evaluation sequence described in this chapter. The off-the-field evaluation should be thorough and comprehensive. The athletic trainer should take time to systematically rule out information that is not pertinent to the present injury. Once the extraneous information has been eliminated, the subsequent progress evaluation can focus specifically on how the injury appears today compared with yesterday. Is a positive patient outcome evident from the previous day's treatment? Is the patient better or worse as a result of the treatment program rendered on the previous day?

To ensure that the progress evaluation will be complete, the athletic trainer still needs to go through certain aspects of history, observation, palpation, and special tests.

History

The athletic trainer should ask the patient the following questions:

- How is the pain today compared with yesterday?
- Are you able to move better and with less pain?
- Do you think that the treatment done yesterday helped or made you more sore?

Observation

The athletic trainer should make the following observations:

- Is the swelling today more or less than it was yesterday?
- Is the patient able to move better today?
- Is the patient still guarding and protecting the injury?
- How is the patient's affect? Is he or she upbeat and optimistic or depressed and negative?

Palpation

The athletic trainer should palpate the injured area to determine the following:

- Does the swelling have a different consistency today, and has the swelling pattern changed?
- Is the injured structure still as tender to the touch?
- Is there any deformity present today that was not obvious yesterday?

Special Tests

The athletic trainer should use special tests to make the following determinations:

- Does ligamentous stress testing cause as much pain? Has the athletic trainer's assessment of the grade of instability changed?
- How does a manual muscle test compare with yesterday?
- Has either active or passive range of motion changed?
- Can the athlete perform a specific functional test better today than yesterday?

Documenting Injury Evaluation Information

Complete and accurate documentation of findings from an evaluation is essential.¹⁶ As stressed in Chapter 3 accurate documentation can be a strong ally, should the athletic trainer become involved in litigation. For the athletic trainer working in a clinical setting, clear, concise, accurate record keeping is necessary for third-party reimbursement. Although the process may seem at times cumbersome and time-consuming, the athletic trainer must develop proficiency not only in evaluation skills but also in generating an accurate report of the findings from that evaluation.⁷

Soap Notes

Documentation of acute injury can be effectively accomplished through a system designed to record subjective and objective findings and to document

SOAP note format:

- Subjective
- Objective
- Assessment
- Plan

the immediate and future treatment plan for the patient.¹⁶ The **SOAP note** format (subjective, objective, assessment, and plan) provides a standard format for recording injury information obtained from on-site, sideline, or clinical evaluations.¹⁶ This method combines information provided by the patient and observations of the examiner.¹¹ Figure 13-5 presents a recommended SOAP note injury report form that includes the components of documentation. This form also includes a provision to document findings arising from more definitive evaluation or from the examiner's subsequent evaluation.

S (Subjective) History taking is designed to elicit the subjective impressions of the patient relative to time, mechanism, and site of injury. The type and course of the pain and the degree of disability experienced by the patient are also noteworthy. The subjective evaluation is the foundation for the rest of the evaluation process. Perhaps the single most revealing component of the injury evaluation is the information gathered during the subjective evaluation. Essentially, during the subjective evaluation the athletic trainer engages in an orderly, sequential process of questions and dialogue with the patient. In addition to gathering information about the injury, the subjective evaluation serves to establish a level of comfort and trust between the patient and the athletic trainer. The injury history and the symptoms are the key elements of the subjective evaluation. A detailed injury history is the most important portion of the evaluation. The remainder of the evaluation will focus on confirming the information taken from the patient's history.

O (Objective) Objective findings result from the athletic trainer's visual inspection, palpation, and assessment of active, passive, and resistive motion. Findings of special testing should also be noted here. Thus, the objective report would include assessment of posture, presence of deformity or swelling, and location of point tenderness. Also, limitations of active

SUBJECTIVE
The patient's
remarkable
include—
General med
MD on—

OBJECTIVE
(The follow
OBSERVAT
PALPATIO
• Bones
• Soft tissu
MOVEME
• Active ra
— Mana
• Passive r
— Gonio
— Acces
NEUROLO
• Cervic
• Cerebr
• Crania
• Sensor
• Reflex
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SUBJECTIVE: The patient is a _____-year-old athlete with the above diagnosis. The patient notes a _____ onset on _____. Past history for this condition is remarkable for _____. Unremarkable. Diagnostic testing of _____ Medications include _____. The patient's goals are to _____. Medications General medical history is remarkable for/unremarkable. The patient will follow with MD on _____.

OBJECTIVE: Measurable, Reproducible, Observable findings—Be Objective (The following Objective Measurements may not all be relevant depending on the injury)

OBSERVATION: (e.g., movement quality, gait, affect etc.)

PALPATION

• Bones:

• Soft tissue:

MOVEMENT ASSESSMENT

• Active range of motion/Resistive range of motion

– Manual muscle testing:

– Passive range of motion

– Goniometric or digital inclinometer measurements of joint range.

– Accessory motions:

NEUROLOGIC EXAM

• Cerebral function:

• Cerebellar function:

• Cranial nerve function:

• Sensory testing (compare sides):

• Reflex testing:

• Determining projected/referred pain:

• Motor testing (compare sides):

JOINT STABILITY TESTS:

POSTURAL EXAMINATION:

ANTHROPOMETRIC MEASUREMENTS:

VOLUMETRIC MEASUREMENTS:

FUNCTIONAL PERFORMANCE TEST AND SCORES:

FUNCTIONAL SCREENING TEST SCORES:

ASSESSMENT: Your professional opinion of the patient's problem
The patient presents with the following problems (1) _____, (2) _____,
(3) _____, (4) _____.

PLAN: Describe how you will manage the patient's care regarding frequency of treatment, what the treatment will include (i.e., modalities, therapeutic exercise, home program, and follow up with you).

Plan for referral (if necessary) _____

Short-term goals include (1) _____, (2) _____, (3) _____,
(4) _____.

Long-term goals include _____

Comments: _____

Signature _____ ATC

motion and pain arising or disappearing during passive and resistive motion should be noted. Finally, the results of special tests relative to joint stability or apprehension are also included.

A (Assessment) Assessment of the injury is the athletic trainer's professional judgment with regard to impression and nature of injury. Although the exact

nature of the injury will not always be known initially, information pertaining to the suspected site and anatomical structures involved is appropriate. A judgment of severity may be included but is not essential at the time of acute injury evaluation.

P (Plan) The plan should include the first-aid treatment rendered to the patient and the athletic trainer's

FIGURE 13-5 SOAP note form.

intentions relative to disposition. Disposition may include referral for more definitive evaluation or simply application of splint, wrap, or crutches and a request to report for reevaluation the next day. If the injury is chronic, the examiner's plan for treatment and therapeutic exercise would be appropriate. The treatment plan should establish specific short-term goals for the rehabilitation program and should provide criteria-based guidelines for accomplishing these goals (e.g., progress from touch-down gait on two crutches to weight bearing on one crutch). A specific long-term goal should also be clearly identified in the plan (e.g., normal gait without a limp).

Chapter 13

Summary

- Once the patient has been transported from the site of initial injury, a detailed off-the-field injury evaluation may be performed on the sideline, in the athletic training clinic, in an emergency room, or in a sports medicine clinic.
- Athletic trainers evaluate injuries and decide on a clinical diagnosis, whereas physicians are responsible for providing a medical diagnosis.
- To accurately evaluate an injury, the athletic trainer must possess a thorough background in human anatomy, including surface anatomy, body planes, and anatomical directions. The athletic trainer also needs an in-depth understanding of the musculoskeletal system, with special focus on adverse biomechanical forces, which become pathomechanical. After they are assessed, injuries must be described using appropriate terminology.
- The off-the-field evaluation scheme is divided into four broad categories: history, observation,

Solutions to Clinical Application Exercises

- 13-1** The athletic trainer should first take a subjective history from the injured patient and follow that with an objective examination that includes observation, palpation, movement assessment (active, passive, resistive), neurological examination, testing joint stability,

Progress Notes

Progress notes should be routinely documented after each progress evaluation done throughout the course of the rehabilitation program.²⁴ Progress notes can follow the SOAP format, as indicated in the previous sections. They can be generated in the form of an expanded treatment note or done as a weekly summary. Information in the progress note should concentrate on the types of treatment received and the patient's response to that treatment, progress made toward the short-term goals established in the SOAP note, changes in the previous treatment plan and goals, and the course of treatment planned over the next several days.¹

palpation, and special tests that provide additional information about the extent of injuries.

- Functional screening tests are used to identify characteristic movement impairments and suggest interventions for these impairments to reduce an athlete's individual risk for injury.
- To be an effective clinician, the athletic trainer must consistently incorporate the best available evidence in the professional literature into the clinical decision making process.
- The progress evaluation focuses specifically on how the injury appears today compared with yesterday, and it is more limited in scope than the detailed off-the-field evaluation sequence.
- The SOAP note (subjective, objective, assessment, and plan) provides a standard format for documenting and recording injury information. Progress notes may also be recorded in the SOAP format.

postural examination, anthropometric measurements, volumetric measurements, vascular screening and, testing functional performance.

- 13-2 To ensure that the progress evaluation will be complete, the athletic trainer needs to go through history, observation, palpation, and special testing. The patient should be asked pertinent questions, such as "What types of exercises have you done for the past 3

Review Questions and Class Activities

1. Differentiate between a clinical diagnosis made by an athletic trainer and a medical diagnosis made by a physician.
2. What basic knowledge must the athletic trainer have before performing an injury assessment?
3. Explain the key terminology needed to communicate the results of an assessment.
4. Identify the various descriptive assessment terms.
5. How should an athletic trainer take a history? What questions should be asked?
6. Describe palpation and when and how it should be performed.
7. What can be ascertained from active, passive, and resisted movement?
8. Explain how muscle testing is performed.
9. What part do special tests play in injury assessment?
10. When should a functional evaluation be given?
11. What information should be included in a SOAP note?
12. Create a SOAP note for a specific injury.
13. Research different videos on specific body part evaluation techniques and terminology.
14. Discuss patient cultural diversity, privacy and safety issues that may be involved in an injury evaluation.

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