of braces; I will focus, instead, on those used to treat common ligament injuries in the ankle and knee, and overuse injuries in the elbow and wrist. In addition, I provide illustrations for ankle, knee, wrist, elbow, and shoulder braces in their respective chapters.

Braces can supplement or replace athletic tape. Some braces, such as those for the ankle, can save money because, unlike athletic tape, they are reusable. Braces, however, can be expensive. Functional knee braces, for example, cost from $500 to $700.

**Rigid Strapping Tape and Elastic Kinesiology Tape**

The effectiveness of traditional athletic tape tends to decrease during physical activity. Alternatives to traditional athletic tape are rigid strapping tape such as Leukotape and elastic kinesiology tape such as Kinesio Tape.

**Rigid Strapping Tape**

Underwrap tape (such as Cover-Roll) plus rigid strapping tape (such as Leukotape) (figure 1.6) adheres better than traditional athletic tape and allows athletes to withstand activity longer. Leukotape and other similar brands of rigid strapping tape have only a 30% stretch from the time of initial application and are therefore more useful for creating a bracing type of support to the area. This lack of stretch in the tape is especially important if the person is engaged in physical activity and is relying on stability gained from the tape. A tape underwrap is usually applied before the rigid tape is applied. The therapeutic effects of strapping tape include stabilizing joints, improving joint movement and tolerance to loading, changing and controlling posture or small deformities, aiding in assessment for use of orthotics, facilitating muscle activity and control, inhibiting muscle activity, reducing pain by unloading structures, increasing motor neuron excitability, increasing joint torque, and enhancing proprioception. (For more information on using rigid strapping tape, see Keil, 2012.)

**Elastic Kinesiology Tape**

The other form of therapeutic taping involves elastic kinesiology tape, such as Kinesio Tape (figure 1.7), which has elasticity up to 140% of the tape's original length. This elastic tape allows full joint motion and aids lymphatic flow. Elastic kinesiology tape is latex free and water resistant. Despite its popularity, evidence for the effectiveness of kinesiology taping as the only treatment technique for an injury is limited, conflicting, and lacking in quality. Kinesiology taping is effective in reducing pain, increasing range of motion, and changing electromyographic (EMG) activity. However, these conditions are true only

![Image 1.6](image1.6.png) Leukotape strapping tape and Cover-Roll underwrap.

![Image 1.7](image1.7.png) Kinesio Tape and Spidertech.
### Key Palpation Landmarks

**Lateral Aspect**
- Anterior talofibular ligament
- Calcaneofibular ligament
- Posterior talofibular ligament

**Medial Aspect**
- Deltoid ligament
- Longitudinal arch

**Anterior Aspect**
- Anterior tibiofibular ligament

**Posterior Aspect**
- Achilles tendon
- Gastrocnemius muscle
- Soleus muscle

**Plantar Surface**
- Plantar fascia
- Transverse arch
- Calcaneus

**Dorsal Surface**
- First metatarsophalangeal joint

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### Surface Anatomy

- **Tibia**
- **Tibialis anterior**
- **Flexor digitorum longus**
- **Medial malleolus**
- **Sustentaculum tali**
- **Abductor hallucis**
- **Tuberosity of navicular**
- **Head of first metatarsal**

Image courtesy of Primal Pictures.
Figure 2.4 (continued)  (c) Use elastic tape to encircle the leg completely to the anchor strips; you then have the option of repeating the figure eight and heel locks with nonelastic tape. (d-f) A variation that would provide additional support uses nonelastic tape for all stirrup and horseshoe strips and then includes elastic tape to apply the figure eight and heel locks. (g-h) Elastic tape could complete the procedure, or you could repeat the figure eight and heel locks with nonelastic tape.
Figure 2.12  Kinesiology taping for gastrocnemius strains, Achilles tendonitis, or arch problems. (a) Start with the foot in dorsiflexion while the patient is prone with the foot off the table. Measure the tape from the distance of the top of the calf to the distal arch (metatarsal heads) and then cut. Cut four slit fans in arch section and a Y in the calf section. (b) Rip the backing from the tape, apply it at the heel, and stretch the tape to full tension across the arch to the base of the metatarsals. Rub the tape to activate adhesive. (c) Holding the heel piece securely, apply tape to medial and lateral gastrocnemius with minimal (15-25%) stretch.

Achilles Tendon Exercises

The exercises for the ankle are also appropriate for the Achilles tendon when the athlete gives special attention to stretching and strengthening the gastrocnemius and soleus muscles (see figures 2.8 and 2.9).
Shoulder Exercises

Most sports, especially those that require overhead arm motion, rely on adequate strength and flexibility of the shoulder. Construct a simple T-bar for exercises to stretch the shoulder (figure 5.5). Be certain that the exercise regimen addresses the full range of motion of the shoulder.

Figure 5.5  A simple T-bar to stretch the shoulder muscles through (a) flexion, (b) abduction, and (c) external rotation.
Thumb Sprain Taping

The athlete's pain and disability, along with the dexterity that he or she requires, will determine how you proceed. For minor injuries, a simple figure-eight taping around the thumb and wrist will suffice (figure 7.8). If the athlete needs the wrist to move freely, begin the individual strips on the anterior surface, encircle the metacarpophalangeal joint of the thumb, and finish on the posterior aspect of the wrist.

Figure 7.8 Figure-eight taping to support the metacarpophalangeal joint of the thumb. (a) Following application of anchor strips around the wrist, begin a strip of tape from the palmar surface of the wrist and proceed around the thumb. Adduct the thumb as the strip passes toward the dorsal surface of the wrist. (b) To prevent the bulk that will result from continuous strips around the wrist, individually apply the figure-eight strips. (c-e) Successive figure-eight strips overlap the preceding strips in a staircase fashion. (f-g) Anchor strips around the wrist complete the procedure.
ATHLETIC TAPPING AND BRACING

The premier text for athletic taping and bracing is now revised in a stunning third edition. *Athletic Taping and Bracing* retains its emphasis on the techniques most commonly used by athletic trainers and therapists while integrating the science of anatomy and injury mechanisms with the practice of athletic taping and bracing. Plus, the third edition expands on traditional taping by including the methods for rigid strap taping and elastic kinesiology taping.

*Athletic Taping and Bracing, Third Edition*, includes more than 480 full-color illustrations and photos, providing invaluable visual aids for both students and professionals. The photos that depict taping sequences feature tape with darkened edges that enable readers to distinguish the layers and patterns of the tape applied in each step.

Detailed anatomical descriptions and illustrations clearly highlight the mechanisms of injury that are crucial for understanding effective taping and bracing. Each major joint and body region is covered, and step-by-step instructions are provided for the 46 most frequently applied procedures in clinical practice, including 10 techniques for rigid strap taping and elastic kinesiology taping. To emphasize rehabilitation as well as prevention, *Athletic Taping and Bracing, Third Edition*, also presents basic stretching and strengthening exercises to help rehabilitated athletes maintain strength and flexibility and safely return to play.


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