

# TRAINERS JOURNAL

SECTION

The NATIONAL ATHLETIC TRAINERS ASSOCIATION

OCTOBER, 1941

No. 2

Official Publication  
Of the National Athletic  
Trainers Association



Three Methods of  
Taping for Injuries and  
the Prevention of  
Injuries

Injuries of the Knee  
Joint

Training Room  
Equipment

George Hauser, M. D.—  
Line Coach  
Lloyd Stein—Trainer  
Bernie Bierman—Head Coach

# WHEN INJURIES ARE KEPT DOWN

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or Good Training?*



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**ACE No. 1** — Strong, long-lasting, washable. Economical, can be used over and over

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Want to prevent tape from slipping? Want to guard against tape-poisoning? Want tape to stick on sweaty surfaces?

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You will be agreeably surprised at the increased efficiency of taping when Ace Adherent is applied first.  
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*A copy of the Ace Athletic Manual on the prevention and treatment of athletic injuries is yours for the asking.*

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# THE TRAINERS JOURNAL SECTION

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Officers National Athletic Trainers Association  
For 1941-1942

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3rd Vice-President, Wilbur Bohm, Washington State College  
Executive Secretary and Editor of Trainers Journal, Bill Frey  
Office of Publication, Iowa City, Iowa

## Tooting Our Own Horn

OF course we are tooting our horn about our Trainers Association, our Trainers Journal and our High School Trainers Program. Our toot would sound weak, however, if it were not a pretty popular number right now, and amplified by dozens of outstanding coaches, athletic directors and trainers throughout the country. We quote at random some of their expressions of approval.

"Certainly a step in the right direction." *Clark Shaughnessy, Stanford University.*

"The idea behind the student trainer plan is a very progressive and fine move as related to inter-scholastic athletics." *Bernie Bierman, University of Minnesota.*

"Wonderful progress is being made." *Lee Jensen, Physical Therapy Technician.*

"Can do a great service for youth and athletics." *Norman C. Perkins, Colby College.*

"Your student trainer program is going to fill a great need." *Richard Fassoux, Christ School, Arden, N. C.*

"This type of work is most needed in our high school athletics today." *Peck Geneva, Athletic Director, St. Petersburg, Fla.*

"The student trainer program is the answer to one of the greatest problems of the high school coach." *Bob Lamson, Webster City, Iowa.*

"Student training program is one of the best moves that has been introduced in the athletic program for some time." *J. T. Saur, member of the Board of Control, Iowa High School Athletic Association.*

"I am 100 per cent behind the Trainers Association and their work." *Emil Klumpar, Coach, Storm Lake, Iowa.*

"Sending in my dues at once for association and Trainers Journal. You can't beat it." *Herman Kaiser, Wausau, Wisconsin.*

"Trainers' prayers answered by addition of new Journal." *Archie Hahn, University of Virginia.*

"A very useful organization." *P. H. Beebe, Physical Supervisor, North Tonawanda, N. Y.*

for OCTOBER, 1941

## UNDER THE SHOWERS



ARCHIE HAHN of the University of Virginia will have plenty of stories to tell his grandchildren about great athletes from seven universities, ranging from Oregon in the West to Brown in the East, then south to Virginia. He has served as a coach and trainer since 1908; coach and trainer for all sports at Pacific University for four years; at Monmouth College for one year; at Whitman College, Walla Walla, Washington for four years; and at Brown University for four years. He was backfield coach, track coach, boxing coach and trainer at the University of Michigan for three years. The remainder of the time he has been track coach and trainer at the University of Virginia. He trained the Cavaliers to a conference basketball championship last year.



OLLIE DEVICTOR, head trainer at the University of Missouri, started training athletic teams twenty-eight years ago. His record is eight years at Penn State, nine years at Pittsburgh, six years at Washington University and the remainder at his present post. Ollie recently wrote me a letter stating that he was happy that someone had the fortitude to start this great training program that will benefit the training profession throughout the years.



BILL DAYTON, head trainer at the University of Miami, recently wrote me that he has developed a great treatment for charley horses. I won't let Bill alone until he gives all of us the inside dope. It must be great to have a job in the land "Where Summer Spends the Winter" and be on hand for all of the great football games in the Orange Bowl. In this same city a real tournament for fishermen is staged exclusively for the athletic family every New Year's day by that great fishing authority, Earl Roman. You trainers who fish (and I mean Bill Raney of Alabama) better spend a few days in Miami and some hours with our friend Bill Dayton. He is a very fine fellow and has some good sound theories on the training profession.

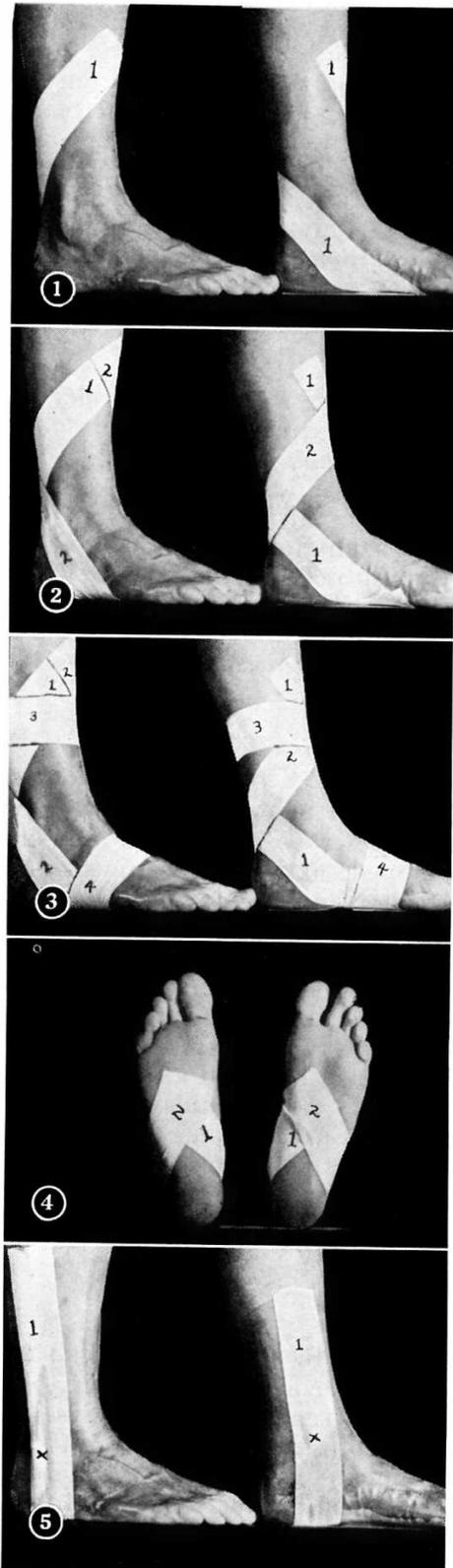


FRED R. DRISCOLL, assistant trainer at Yale University, will long be remembered by the training profession as the editor of "My Methods of Taping Athletes," published by the Seamless Rubber Company, Inc. It is a very fine

(Continued on page 35)

# Three Methods of Taping for Injuries and the Prevention of Injuries

## High School Trainers Lesson No. 2



**I**N all pictures the outside of the foot is on the left while the inside is shown on the right, giving you at a glance the exact location of the tape on both the outside and inside of the foot. By looking at the pictures and following the numbers you will find the taping simplified.

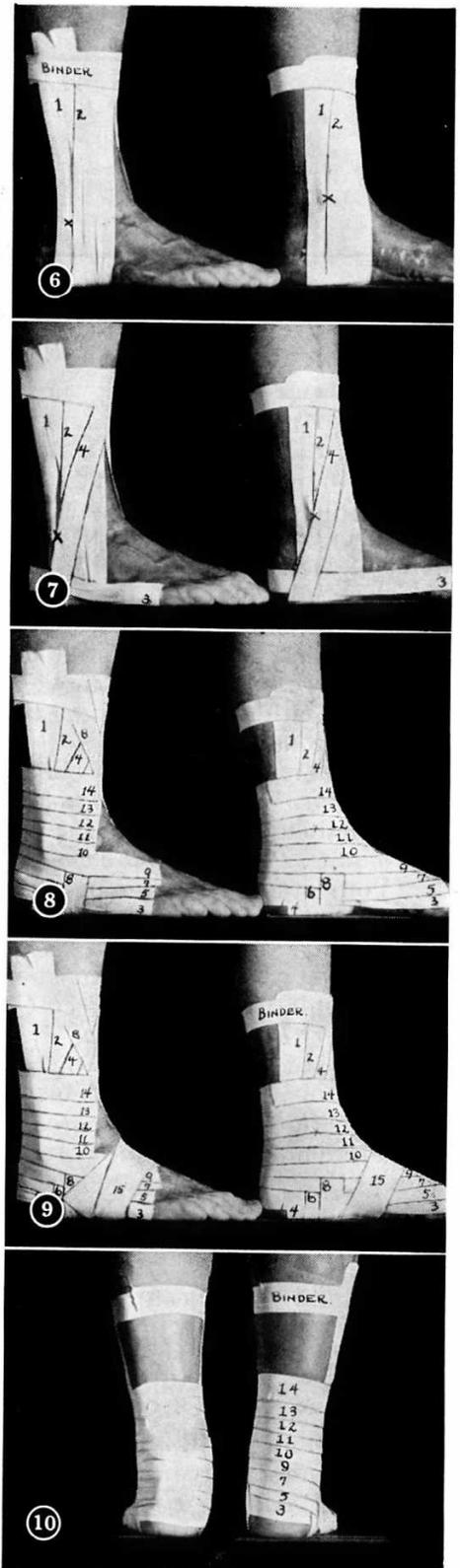
Always have the player sit on a table with the foot extended over the end of the table or elevated in taping position on top of a small box. Never tape any part of the body when it is in an unnatural position. Always apply tincture of benzoin to the surface to be taped and allow this to dry before starting the tape application. This gives you a better surface on which to tape, helps in the removal of the tape and lessens the tendency to any breaking out on the skin, sometimes referred to as tape rash. The various manufacturers of tape have improved their products so that the prevalence of tape rash is reduced to a minimum. Always shave or clip the hair off surfaces on which tape is to be applied.

Taping is necessary in the care of injuries and a positive way of reducing the number of injuries. There are many expenditures in an athletic department that may be cut before the tape budget is touched.

### *Taping for Arches and Simple Ankle Weaknesses—Illustrations 1-4*

Illustration 1—Have the foot in a normal position, the length of the tape to be used varying with the size of the foot. Attach strip 1 on the bottom of the foot (see Illustration 4) pulling the tape on the inside and up on the arch, on the edge of the ankle bone, around and across the back of the ankle—upward, around and over the shin bone.

Illustration 2—Attach strip 2, same length of tape as in preceding illustration, on the bottom of the foot as in Illustration 4, pulling the tape on the outside and up, at the edge of or slightly over the ankle bone, around and across strip 1, upward, around and over strip 1 again.



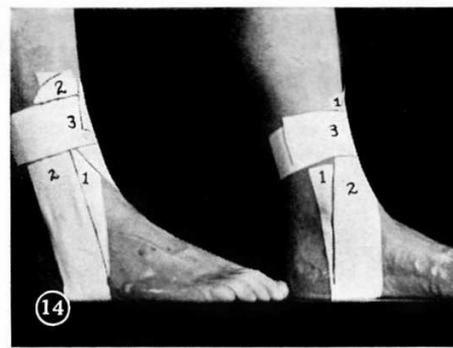
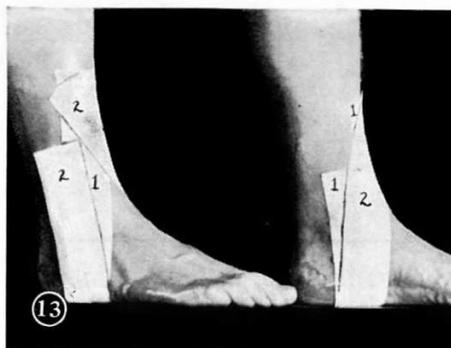


Illustration 3—Strip 3 is two-inch tape, long enough to reach around the leg. Attach this strip 3 over strips 1 and 2. Strip 3 is a binder. Strip 4 is two-inch tape, long enough to reach around the foot. Have the athlete stand on top of strip 4 with full weight, then pull the end on the inside of the foot, up and over. Next pull the end on the outside of the foot, up and over this latter strip.

Illustration 4 shows the start of strips 1 and 2 in Illustrations 1, 2, and 3.

### *The Gibney Bandage or Basketweave Illustrations 5-11*

Illustration 5—Strip 1 is usually about seventeen inches long. Do not be afraid to extend this strip up the leg. Grasp the ends of the tape with the right and left hands, gauging the middle of the strip. Attach the tape on the bottom of the heel, pulling upward evenly with both hands and attaching both ends at the same time.

Illustration 6—Strip 2 same length as 1. Notice how strip 2 crosses over the shin bone. More than two strips may be used if desired. The binder should be applied next, covering strips 1 and 2. This binder will hold the first two strips in position.

Illustration 7—Strip 3 should be long enough to reach from the base of the small toe back and around the heel to the base of the big toe, crossing over strips 1 and 2. Next apply strip 4, which should be long enough to reach under the foot and up on both sides of the leg. This strip 4 should be handled the same as strips 1 and 2, with both hands and an even pull. Notice how strip 4 crosses over and up on the shin. This gives added leverage to the bandage.

Illustration 8—Continue applying 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, in the same man-

ner that you applied strips 3 and 4, keeping the tape smooth at all times. If you wish to make a closed Gibney, which gives greater strength to the bandage, continue strips 10, 11, 12, 13, 14, completely around the ankle. It is also advisable to continue with the short strips such as strip 14, completely covering strips 1, 2, 4.

Illustration 9 shows strip 15 running under the arch and over the instep. This strip is a binder.

Illustration 10 shows a back view of the ankle with strips 3, 5, 7, 9, 10, 11, 12, 13, 14 and the binder.

Illustration 11 is a front view of the finished open Gibney. If strips 10, 11, 12, 13 are continued across the ankle, a closed Gibney is the result.

Many trainers like to add another length of tape in front of and slightly over strip 15. This added strip should be applied with the athlete standing on the taped foot. The attachment of the tape would be the same as strip 15, with the inside end of the tape pulled up and over the outside end of the strip.

### *Common Type Ankle Bandage Illustrations 12-14*

Illustration 12—Tear or cut a strip of two-inch tape, 1, fourteen inches long. Attach the tape on the inside of the foot, three inches above the ankle bone, having the foot in a normal position. Pull the tape under the heel parallel with the leg, upward and on the outside, over the ankle bone and slightly over the shin bone.

Illustration 13—Take a second strip, 2, the same length. Start the attachment on the outside of the foot, pull under the foot, over strip 1, and upward over the ankle bone and slightly across the shin bone, partially covering strip 1.

Illustration 14—Strip 3 is two-inch tape, long enough to reach around the leg. Covering strips 1 and 2, this strip, 3, acts as a binder.

### *Gauze-Over-Tape Bandage Illustration 15*

Illustration 15—Use common gauze for the gauze-over-tape bandage, figure 8 style. Start at the top of the tape on the inside, pulling the gauze tightly as you go under the foot and up and over on the

outside, carrying it back around the ankle in figure 8 fashion. Use about three-quarters of a two-inch roll of gauze. Make the gauze fast with a five-inch piece of one-inch tape. This style of bandage which adds strength and holds the tape may be used over all types of taping.

## **Under the Showers**

*(Continued from page 33)*

book, complete in every detail and easy for the new men in the field to follow. Every school should have one of these booklets and may receive it by writing the Seamless Rubber Company, New Haven, Connecticut. Fred has been at Yale for the past twelve years.

We received a letter from the far-away Philippines requesting information and an application blank for membership in the N.A.T.A. Benjamin Antonio, Illocos Sur High School, Virgin Illocos Sur, Philippines, was the sender of the letter. Looks as if the National Trainers are receiving world-wide attention.

Elmer Hill, better known to his boys as "Ike," left the sheltering wing of our old friend, Matt Bullock, after serving under the great Illinois trainer for eleven years, to be on his own at Washington University at St. Louis. He has been head trainer at Washington for the past six years. Ike is also an expert equipment man and has promised us for an early issue an article on How to Build Protective Equipment. He was one of the few trainers who had a share of the first meeting held in Des Moines April 30, 1938, and is, therefore, a charter member.

Word has been relayed to me that Mike Chambers, formerly of Louisiana State and later of U. C. L. A., has joined the navy.

# Injuries of the Knee Joint

By Frank D. Dickson, M.D.  
Kansas City, Mo.

**D**ERANGEMENTS of the knee joint, the result of trauma (injury), are comparatively common. This situation has been appreciated for a number of years in the British Isles but has not found wide recognition in this country; indeed, there is still a widespread lack of information here on such injuries. The almost universal indulgence through the British Empire in rigger football, which throws a heavy strain on the knee, with frequent injuries to this joint, is responsible for the development of the understanding which the members of the medical profession of Great Britain have of derangements of the knee. Today, with the opening up of the American game of football, the speeding up of baseball, automobile accidents and the great increase in industrial injuries, all leaving in their wake injuries to the knee joint, interest in the pathology of that joint is being quickened in this country.

Before the discussion of derangements of the knee joint is taken up, the anatomy of this important and complicated articulation might advantageously be reviewed. The knee joint consists essentially of the broadened ends of the tibia and the femur with a sesamoid bone, the patella, in the extensor apparatus; two fibrocartilages, interposed between the ends of the tibia and the femur; two cruciate ligaments, anterior and posterior, and two lateral ligaments, the internal and the external. In addition to these structures, comprising the knee proper, nature has provided it with strong muscles which play an important rôle in its control and protection. Such a complicated anatomic arrangement is necessary, for the knee must be strong, since it must sustain the body weight transmitted to it through long levers and at the same time must permit the wide range of movement necessary for locomotion and activity.

The great strength of the knee joint, however, is dependent on the integrity of the two cruciate and the two lateral ligaments and the muscles which surround it. So important are the ligaments that a brief description of them is worth while (Illustration 1).

The cruciate ligaments, anterior and posterior, help in preventing lateral movement of the knee, particularly when it is flexed. Their chief function, however, is to prevent the tibia from slipping backward and forward on the femur and to limit rotation of the tibia on the femur.

The internal lateral ligament, a long fan-shaped structure, is of great importance, since it sustains most of the burden

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of preventing lateral movement of the knee. It has further importance in that the internal semilunar cartilage is firmly attached to it, at least in its posterior part, so that stresses and strains to which it is subjected are transmitted to that cartilage.

The external lateral ligament is a long cord-like bundle, which, with the biceps tendon, strengthens the outer side of the joint. It is entirely separate from the capsule of the joint, and the external semilunar cartilage is not attached to it.

Any of the structures entering into the formation of the knee joint may, under proper condition of stress, be injured and the function of the joint interfered with. It is obviously impossible to attempt to discuss all the various injuries to the knee joint which may occur, and this paper will deal only with the three most common derangements which occur as the result

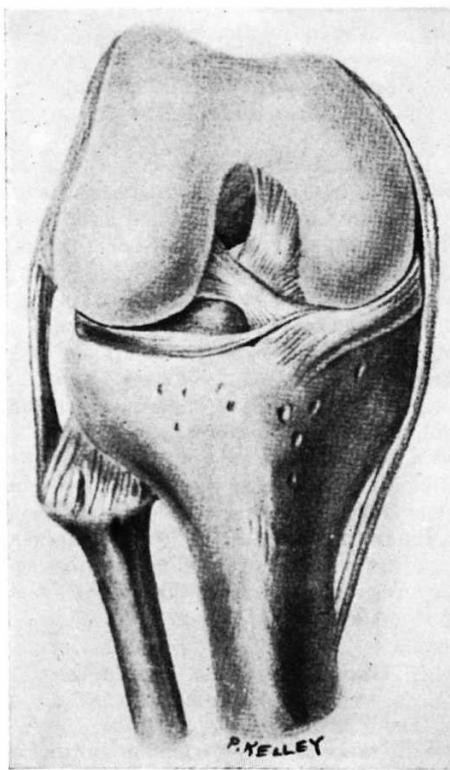


Illustration 1.—Anterior and posterior cruciate ligaments, internal lateral ligament attached to the internal semilunar cartilage and external lateral ligament.

of injury. They are (1) injury to the semilunar cartilages, (2) injury to the internal lateral ligaments and (3) injury to the cruciate ligaments.

## *Injuries to the Semilunar Cartilages*

The internal and the external semilunar cartilage are crescentic fibrocartilages interposed between the tibia and the femur (Illustration 2). They are thick at their outer border and thin at the inner margin. Each cartilage assists the opposite lateral ligament in resisting lateral movement of the knee, for it acts as a wedge between the tibia and the femur and helps to keep the cruciate ligaments tense. The outer thick margin of the internal semilunar cartilage is firmly attached to the capsule and to the internal lateral ligament. The inner margin is free. The anterior cornu of the internal cartilage is always attenuated, and its attachment to the tibia is never very strong. The external cartilage is less firmly attached to the capsule and has no attachment to the external lateral ligament. In addition, both cartilages are attached to the tibia by coronary ligaments (Illustration 3), the fibers of which are weak and lax and permit some movement of the cartilages on the tibia. The fibers of the coronary ligament of the external semilunar cartilages are longer than those of the internal cartilage and permit wider range of motion between the external cartilage and the tibia than is possible with the internal. It is evident then that the external semilunar cartilage is much less firmly attached than the internal and has therefore a much wider range of movement. This fact has importance with reference to injuries of the cartilages, as will be seen later. Both cartilages move with the femur on the tibia in rotary or twisting movements of the knee.

*Incidence.*—In 214 of a series of 241 cases of derangement of the knee joint in the clinic with which I am associated, the diagnosis was injury to the semilunar cartilages. In 169 the injury involved the internal semilunar cartilage and in forty-five the external. Injuries to the internal semilunar cartilage then are three and seven-tenths times as frequent as those of the external cartilage. This ratio is lower than that reported by most observers, except Naughton Dunn<sup>1</sup> of Birmingham, England, who found that in 255 cases the ratio of injury to the internal semilunar cartilage to that of the external cartilage

<sup>1</sup> Dunn, Naughton: *Lancet* 1:1267 (June 16), 1934.

was 2.6 to 1. The reason for the marked predominance of injuries of the internal semilunar cartilage over those of the external is anatomic. First, the greater mobility of the external cartilage allows it to move about and to avoid injury. Second, the range of inward rotation of the femur on the tibia, which is a direct strain on the internal semilunar cartilage, is greater than that of external rotation, which is a strain on the external semilunar cartilage.

**Etiology.**—While there are predisposing causes of derangements of the semilunar cartilages, such as joint disease, lax ligaments and static defects due to flat-foot and knock knee, the immediate etiologic factor is trauma. By far the greatest number of injuries to cartilage are due to indirect trauma, the most common type of which is inward twisting or wrenching of the knee when it is in a slightly flexed position and the foot is fixed (Illustration 4) or outward rotation of the knee under the same conditions. With inward rotation of the knee, the internal lateral ligament is stretched and allows separation of the joint surfaces and slipping inward of the internal semilunar cartilage. As the separated bones snap back, the cartilage is nipped and damaged. If the rotating force continues, the cartilage moving with the femur on the tibia is torn loose or ground between the upper and the nether millstones and fractured.

It is commonly believed that the damage generally suffered is a tearing loose of the cartilage from its attachment to the capsule, with displacement. While this is true of injuries to the external semilunar cartilage, it has been the experience at our clinic, which coincides with that of Platt of Birmingham, England, and W. Rowley Bristow of London, England,<sup>2</sup> that so far as the internal cartilage is concerned a displacement is not frequent, but instead the cartilage, in the majority of instances, is fractured. Of sixty-eight internal semilunar cartilages operated on, fifty-four were fractured and only fourteen were hypermobile. The explanation of the difference in the type of injury suffered by the internal and the external cartilages probably lies in the manner of attachment of the cartilages. The external cartilage, being much more movable than the internal, can accommodate itself more readily to stress and strain and thus avoid serious injury. The fact that injuries to the internal cartilage are almost always fractures has a decided bearing on treatment.

**Symptomatology.**—In the case of an acute injury to the knee the history of a torsion or twisting strain on the knee joint is an important lead and should always suggest a careful investigation for injury to cartilage. The degree of trauma

<sup>2</sup> Bristow, W. Rowley: *J. Bone & Joint Surg.* 17:605 (July) 1935.

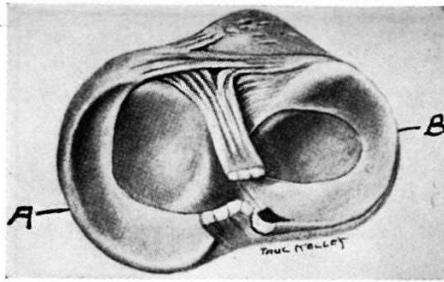


Illustration 2.—A, internal semilunar cartilage; B, external semilunar cartilage.

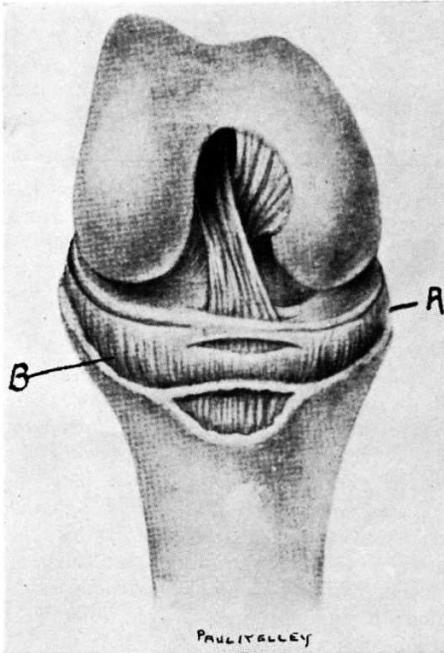


Illustration 3.—A, internal coronary ligament; B, external coronary ligament with its longer and more lax fibers.

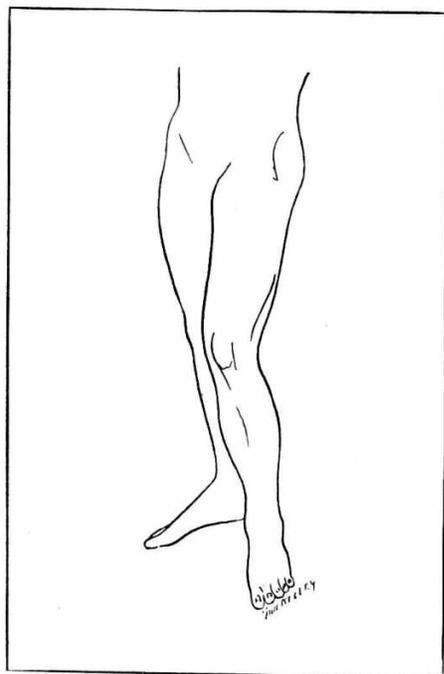


Illustration 4.—Inward twisting of the knee in a flexed position; this is the form of trauma which is responsible for most of the injuries to the internal semilunar cartilage.

need not be severe; in fact, a comparatively slight twist under the proper conditions may result in damage. The knee immediately becomes distended with synovial fluid and some blood, is extremely painful on manipulation, particularly a twist, and cannot be completely extended; if complete extension is forced, extreme pain is complained of. There is usually tenderness on the inner side of the knee just to the inner side of the patella over the attachment of the internal cartilage, or over the anterior attachment of the external cartilage to the outer side of the patella. Of these symptoms, failure of complete extension of the knee is most important in the opinion of my co-workers and me.

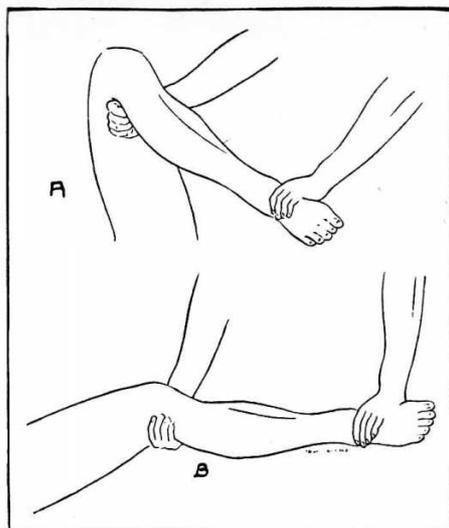
When a derangement of the knee is seen days or weeks after the injury, the picture may be quite different. There may be no effusion in the knee, and local tenderness over the cartilage attachment may be slight or absent. So long, however, as the cartilage or a fractured part of it is displaced, limitation of complete extension will persist. On examination it will be found that the knee both at rest and in weight bearing is held in from 10 to 15 degrees of flexion, and attempts to secure complete extension are resisted and cause pain over the cartilages, external or internal, and in the popliteal space. If the thigh is acutely flexed on the trunk, the knee is flexed to a right angle on the thigh and torsion movements of the knee are made, pain over the internal semilunar cartilage can be elicited with internal rotation if the internal cartilage is displaced or fractured and pain over the external semilunar cartilage on external rotation if that cartilage is involved. One sign of injury to cartilage which is frequently spoken of is "locking." By "locking" is meant a sudden fixing of the knee in a partly flexed position so that it cannot be extended until it is manipulated. "Locking" in this sense is, according to our experience, a comparatively rare occurrence. "Locking" in the sense that complete extension of the knee is impossible occurs in practically every case of injury to the internal cartilage but is somewhat less constant with injuries to the external cartilage. The condition, however, should be spoken of as "blocking" rather than "locking." In cases of subacute and chronic derangement, the patient, in addition to the objective symptoms, complains of pain in the knee on use, giving way and more or less insecurity—all due to the fact that the knee is being used in a more or less flexed position, with resulting strain, irritation and instability. The X-ray evidence of injury to cartilage will be negative.

**Diagnosis.**—In most cases the diagnosis of injury to cartilage is not difficult, though frequently it is impossible to make a definite statement as to the extent and location of the damage. The history of

an injury with acute onset of symptoms, the characteristic point of tenderness, loss of complete extension, and pain and insecurity in the knee are the most reliable diagnostic signs. The derangements of the knee which must be ruled out in diagnosing injuries to cartilage are the presence of loose bodies, tears of the cruciate ligaments and ruptures or strains of the internal lateral ligament. The presence of loose bodies may be eliminated by X-ray examination and the transitory character of the symptoms. Tears of the cruciate ligament are usually the result of severe injury and are accompanied by marked instability of the knee, particularly in the anterior posterior direction. Injuries to the internal lateral ligament give pain on the inner side of the knee, but there is no blocking of the extension, and the tenderness complained of is usually at the insertion of the ligament into the internal condyle of the femur and not over the cartilage.

*Treatment.*—Before I discuss the specific treatment of injuries to cartilage, I should make one statement as being applicable to all derangements of the knee joint. After any injury to the knee which produces effusion and definite symptoms of derangement, the knee should immediately be immobilized in extension by a plaster cast and should remain immobilized until the acute symptoms subside. Such a cast may be removed in a week or ten days, that is, when acute symptoms have disappeared, for more complete examination and the determination of the specific treatment indicated. With such a course, the knee joint is placed in the most favorable position for healing, whatever the form of injury may be, and the complete immobilization thus secured will insure the most rapid subsidence of acute symptoms and so enable an accurate estimate of the disturbance present to be made at the earliest possible moment.

The nature of the treatment of injuries to cartilage depends on whether the attack is the initial attack or a recurrence



**Illustration 5.**—Manipulation to reduce displaced internal semilunar cartilage: *A*, acute flexion and external rotation; *B*, extension and external rotation.

of a former one. Treatment should be conservative for an initial injury and in the acute stage of any attack and radical if disability persists after conservative treatment has been given a fair trial or if the patient has given a history of repeated derangements.

*Conservative Treatment.*—The keynote of conservative treatment of injuries to cartilage is reduction of the displacement of the cartilage or of the displaced fragment if the cartilage is fractured. To accomplish these measures when the internal semilunar cartilage is involved, the thigh should be flexed on the trunk acutely and the knee acutely on the thigh. The leg should then be abducted and rotated outward to increase the space between the internal condyle and the upper surface of the tibia. The leg should then be brought sharply into extension with as complete relaxation of the knee as can be obtained (Illustration 5). At times an anesthetic may be used with advantage to secure the desired relaxation.

Occasionally several attempts may be necessary to secure reduction, proof of which is that the knee may be completely extended without discomfort or pain. With injury to the external cartilage, the same maneuver with internal rotation instead of external rotation should be carried out.

After reduction has been secured a cast should be applied, extending from the upper part of the thigh to just above the ankle, and crutches should be used for locomotion. The cast should remain on a minimum of three weeks. At the end of this time it may be bivalved and massage and guarded exercise used to restore muscle tone and to build up muscle control of the joint. At the end of four weeks the knee may be used with a bandage support, which support should be worn for about another week. A fairly satisfactory number of displacements are completely cured with this form of treatment. Among seventy-three patients treated conservatively for an injured cartilage, fifty-nine recovered, nine did not recover, and in five cases the outcome is unknown.

If, however, after well-planned conservative measures have been carried out, complete extension of the knee cannot be secured and disability persists, operative treatment is indicated and is usually necessary for recovery. Also, if after recovery with conservative treatment other attacks occur, further attempts at conservative treatment will probably be unsuccessful and removal of the cartilage is indicated. With recurrent derangements the injury is almost certainly a fracture of the cartilage, and interference with the function of the knee joint cannot be overcome by any form of conservative management. Since experience has shown that most injuries to the internal semilunar cartilage are fractures, it follows that many will require removal.

Injuries to the Internal Lateral Ligament will be discussed in the November issue.

## QUALIFICATIONS FOR MEMBERSHIP IN THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

**SENIOR MEMBERSHIP:** 1. Men who have been actively engaged in athletic training or closely allied work for a period of two or more years. 2. Men who are qualified to take charge of the work, in co-operation with the medical department and to direct it in athletic training in a college or university. 3. Men who have had four years of practical experience in a recognized athletic training department of a college or university or some other institution of recognized standard.

Senior members have voting privileges.

**JUNIOR MEMBERSHIP:** 1. Men who do not qualify as Senior members but who are actively engaged in athletic training either as an assistant in a college or university. 2. Men in charge of the training program in a high school, or in closely allied work. 3. Men who are taking an approved training course.

Any Junior member may become a Senior member upon completing the requirements for Senior membership and passing an admission test given by the Membership Committee. Junior members do not have voting privileges.

Senior and Junior applicants must submit along with the application blank a letter of endorsement from the physician who acts as medical supervisor in their institutions.

**ASSOCIATE MEMBERSHIP:** 1. Men who have not been actively engaged in athletic training for a period of eighteen months previous to their application. 2. Junior or Senior members who have not been actively engaged for a period of eighteen months, but who are interested in the advancement and recognition of athletic training. 3. High school coaches and student high school trainers.

Associate members do not have voting privileges.



# The High School Trainers Plan in Operation

**T**HE high school trainers' plan, as outlined in the September issue of the Trainers Journal, is being adopted by many high schools and by the smaller colleges which do not have a regularly appointed athletic trainer on the staff.

The purpose of the plan is two-fold. Coaches with four assistant trainers will be relieved of many arduous taping duties. More athletes will be taped than was possible when the coach had it all to do himself. From the high school student trainers' point of view, they will be gaining valuable and practical information in addition to rendering their schools a service.

It is suggested that high school boys who have read about the plan in the September issue apply to the coach or principal of their school for further information.

Briefly summed up, the duties of the student trainers, under the direct supervision of the coach and school medical supervisor, will be as follows: 1. Study

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***T**HE picture shown above is that of the first high school trainers' team in the country to start work on the High School Trainers Plan. Dr. H. E. Farnsworth, medical supervisor, Storm Lake, Iowa, is shown instructing the four high school student trainers; Donald Bock, freshman, Richard Edwards, junior, LeRoy Eickhoff, sophomore and Kenneth Hill, senior (reading from left to right). Head coach and athletic director Emil Klumpar looks on with approval. A. E. Ruby, Superintendent, is an interested partner in this educational program sponsored by the National Athletic Trainers Association.*

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the lessons as outlined in each issue of the Trainers Journal which will include diet for athletes, protective gear for ankles, knees, shoulders, hips, wrists, etc., treatment of injuries. 2. Assist the coach in the weighing in and out of all athletes, or, if the coach so desires, take complete charge of the weight charts. 3. Assist with the proper exercises for each sport. The hardening-up exercises require much of the coach's time. He will welcome assistants who can help with this work. 4. Assist in the building of protective equipment. In schools where funds are limited, student trainers may be of great assistance in the matter of constructing protective equipment. 5. Assume the responsibilities of an absolutely clean training room.

These are some of the duties undertaken by America's No. 1 student training team whose picture appears on this page.

# Training Room Equipment

## 1. What to Look for in Buying Elastic Bandages

WITH the wider recognition given to the use of elastic bandages of the roller type, in the prevention and treatment of athletic injuries, it is well to have a more complete understanding of the qualities of such bandages if we are to intelligently buy them.

It is a natural evolution that as soon as anything new is found to be valuable the market is flooded with articles branded "just as good" with price alone as the bait for the buyer. Price buying has ever been an insidious disease, highly contagious, and the only loser usually is the price buyer himself, unless you should include the players who had faith in the buyer and were sold short with inadequate equipment.

Elastic bandages of the roller type are of estimable value to the coach who finds that he must do all the training room work for his team, and even the college trainers find them of great value for the rapid recovery of an injury or in the prevention of the recurrence of an old injury.

For discussion's sake let us divide elastic bandages into three divisions: first, the all-cotton elastic bandage for general utility work; second, the greater-tension bandage made with lastex yarn for specific work; third, the newcomer into this field, the elastic adhesive bandage.

1. *General Utility Bandage.* This bandage is used in the prevention and treatment of sprains, strains, joint injuries, muscle injuries, pulled tendons and any other ailment requiring firm elastic support, coupled with passive massage, without danger of cutting off circulation. The qualities you should look for in this bandage are:

a—A good body. The bandage should be firmly woven and not thin in texture. To get good support, the body or cross threads should be of uniform size cotton thread without starch filler, soft enough for comfort and firm enough for good support.

b—Good elasticity. This can only be produced when the long threads are made of the best grade long staple cotton. A certain amount of elasticity can be temporarily woven into a bandage by using the cheapest short staple cotton yarn. But this elasticity will not withstand many washings, which of course lessens its usefulness. A good all-cotton elastic bandage should stand repeated washings and launderings and still be efficient for a complete

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*ONE way in which your editor believes that he can be of service to you trainers is to keep you informed on training room equipment. Last month William Dayton listed for us what we believe is necessary in a training room. We plan to devote a page each month in our Trainers Journal to equipment.*

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school year.

c—Washability. This factor alone is of great importance to the buyer of elastic bandages. It must be remembered that to restore the elasticity in all-cotton elastic bandages it is necessary to wash them or subject them to immersion in hot water after every use. This is the factor that determines whether or not there is good quality in the bandage. If the bandage is of the highest quality (the best buy for the user), it should stand repeated washings and launderings and give satisfactory service throughout a full school year.

d—The advantage of a soft feather edge. Notwithstanding claims to the contrary, a soft feather edge on an all-cotton elastic bandage is of great value as it permits an even tension throughout the width of the bandage without the possibility of the edges cutting into the flesh and hindering circulation. This feather edge, if properly made, also will prevent the bandage from raveling along the edge.

e—A standard test for the elasticity of a good all-cotton elastic bandage is: a thirty-six-inch length of the material stretched to seventy-two inches and kept stretched for one hour should, upon release from its stretching, return to fifty-four inches in length within fifteen minutes. This is a standard test for good all-cotton elastic bandages and any bandage that you buy should be guaranteed to withstand this test.

2. *Elastic Bandage Made With Lastex Yarn.* The elastic bandage made with lastex yarn has become a very important factor in the treatment of certain injuries. Because of its permanent elasticity, due to the lastex yarn, it can be used on thighs for Charley-horse, pulled tendons, groin injuries, rib injuries and knee injuries. The qualities of a good grade bandage of this type are:

a—It must have a compact body or cross weave in order to give strength to the bandage. There is a definite relationship between the body or cross weave of this type of bandage and the long threads or lastex yarn which relationship must be of such character that, when the bandage is stretched to its fullest, it is still compact enough to give good support.

b—A good bandage of this sort should be made of lastex yarn as any other rubber substance will not withstand boiling, atmospheric exposure or the deteriorating effects of perspiration. There are a lot of imitations of lastex yarn on the market but none of them will approach the permanence of the lastex yarn. The stretch of lastex yarn can be controlled so that there can be no possibility of cutting off circulation, and this factor should be inquired about when the coach or trainer purchases bandages of this type.

c—The bandage should stand washing without bunching; in other words, the material after it has been washed and dried should present a firm smooth texture.

3. *Elastic Adhesive Bandage.* The advantages of elastic adhesive bandages in certain phases of prevention and treatment of athletic injuries have just been recognized. Because of its elastic qualities, this type of adhesive bandage can be molded to fit any joint, muscle or bony protuberance of the body and will greatly increase the efficiency of the strapping. In the bandaging of knees, shoulders, rib injuries, Charley-horse, and pulled tendons it is found to be of great value because of its elasticity and the very firm support that the adhesive mass can give to the finished strapping. The qualities one should look for in this type of bandage are:

a—An easy stretch. It is necessary, in order to get an evenly applied bandage with elastic adhesive material, that the material stretch easily and come off the roll easily. If these qualities are not present the trainer will find himself applying the bandage much too tightly.

b—Strong body texture. Unless the bandage has strong body texture coupled with its easy stretch, you will not be able to get good strong support, which of course is the reason for using such a type of bandage. The backing of the bandage

should be closely woven and have all the qualities of the all-cotton elastic bandage as discussed above.

c—Good adhesive qualities. The bandage should have sufficiently tacky adhesive qualities to insure prompt adherence to the skin immediately after application, but not too great a stickiness to interfere with the easy removal of the bandage after use.

d—Quality of materials used in the adhesive mass. This is of utmost concern to the buyer of elastic adhesive bandage for, unless the manufacturer can assure you that the quality of the materials is of the highest, you are very apt to run into a great amount of skin irritation. In most cases this can be at-

tributed to cheap resin, cheap rubber and other low grade ingredients, which, while it is true that they will give you an adhesive mass, will cause a great amount of skin irritation. These factors should be discussed with the manufacturer of elastic adhesive bandage in order to get the assurance that the materials used are of the highest quality.

From the above discussion, it can be clearly seen that only quality merchandise will give the service that should be expected of the items used in the field of athletic training. If good merchandise is purchased originally, the amount of service you get from it will be far cheaper than the constant re-buying of inferior merchandise.

## 2. Infra-Red Lamp Treatments for the Relief of Pain in Athletic Injuries

**A**LMOST every person knows that the sun contributes its benefits to the vegetable and animal kingdoms, and that, without the rays of light, something else would have to be created to take their place.

It is generally known that the most penetrating ray of the spectrum or visible light ray is the infra-red. This ray produces heat by the small vibrations that penetrate almost every substance which it contacts and the heat is produced where a light ray is deflected.

The sun has six other colors that are visible to the eye, each one having a different vibration, but it has not been proved what value they have to mankind. These rays have no great penetration and for this reason they are termed surface heaters in light therapy.

Heat is a form of energy that we have always recognized as a benefit in the relief of pain. We, therefore, have many appliances that have been manufactured to produce heat such as the hot water bottle, hot water baths, electric pad, elec-

tric heater, the heat lamp and diathermy.

Treatments with the infra-red lamp have given great satisfaction in athletic injuries and will no doubt be used more extensively in the future when full comprehension of this harmless appliance and of the benefits from its application is attained. The molecular vibration that is brought about by the diathermic effect of the infra-red gives a dilation to the tissues and an increased blood supply that washes away the toxin and brings the tissues back to normality quickly. Therefore, we recommend infra-red treatments because they are simple in application, harmless to use and effective and beneficial in results.

Manufacturers of infra-red lamps are constantly improving their product. Today, we have on the market a new appliance, a new infra-red lamp, which filters back the rays that are not so penetrating and allows none of the rays below 5,000 Angstroms to come through the filters. It is 95 per cent pure infra-red between 5,000 and 27,500 Angstroms and allows

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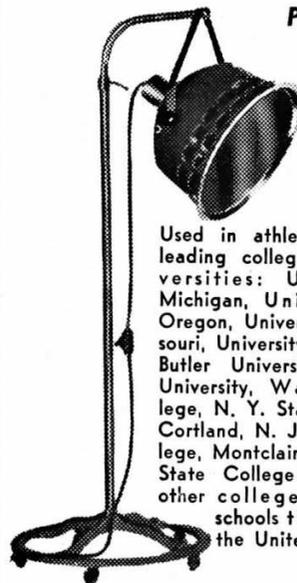
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but 5 per cent of the full production of the element of those Angstroms above 27,500 to 120,000 to come through the filters producing a mild surface heating. This gives a very satisfactory appliance for a person to use and makes it possible for him to use it a sufficient length of time to acquire heat deep into the fascia similar to a mild diathermia.

This new appliance when used thirty inches from the field of application will penetrate approximately two inches in twenty minutes and there is no danger of over-heating, burning, or blistering regardless of length of treatment. It has been found very beneficial to hold the heat in the area of ankle and knee joints following a fifteen-minute treatment with a diathermia machine, but it must not be used too close. Many people have the tendency to use this appliance too close for the reason that it produces such a strong pure infra-red ray that penetrates through the sensory nerves, which are on the surface, without giving the sensation of a burning or heated effect.

Many trainers find uses for infra-red radiation in addition to the treatment of injuries. Infra-red radiation may be used for abscesses, burns, colds, headaches, laryngitis and infections. These treatments should be given only upon advice of the medical supervisor of the institution.—EDITOR'S NOTE.

## Tape Topics

**T**HE column Tape Topics, as announced for the October issue of the Trainers Journal, is short because of limited space. Questions for this column should be sent to the Athletic Trainers Office, Iowa City, Iowa.

**QUESTION:** I have been instructed by those close to the athletic department in our high school never to use heat in the treatment of athletic injuries. What is your opinion of this method?

**Answer:** The consensus of trainers who are members of the N. A. T. A. feel that they would be greatly handicapped if they could not use heat of some type in the treatment of certain injuries. It is true that heat should never be applied for at least forty-eight hours after the injury so as to prevent the recurrence of a hemorrhage.

**QUESTION:** I have a boy with a very bad knee, the knee having been hurt while playing football. Is it possible to purchase a manufactured knee brace that will permit using the boy in athletic contests?

**Answer:** It is possible to purchase well-built manufactured knee pads. I would advise inquiring of your sporting goods dealer.

**QUESTION:** During early fall practice my boys seemed to perspire a lot. Is it

true they are losing too much salt from their bodies in this manner?

**Answer:** It is very true that salt deficiency is something that you have to watch out for. It is advisable to administer salt tablets, but first consult your medical adviser or school physician.

**QUESTION:** During the regular athletic season my boys are bothered with athlete's foot. Could you advise me what preventative could be used to do away with this bothersome disease?

**Answer:** The first thing that must be done to cure athlete's foot is to disinfect your showers and dressing rooms scientifically, at the same time treating your boys with one of several very fine powders or chemicals now on the market. Every athlete should powder his feet immediately after taking his shower. This will keep the feet dry and will not promote the growth of the fungus, known as athlete's foot.

The membership cards for the National Athletic Trainers Association will be mailed the second week in October. I am late with them because the new memberships have been coming in so fast I could not take care of them and the other work that is necessary in the publishing of a Journal.

BILL FREY.

# For Treating Tackle Shoulders



**A simple effective way to speed return to action**

Coaches and trainers are constantly faced with the problem of keeping first-string men in prime playing condition. Very often such injuries as *tackle shoulders, sore or bruised muscles, abrasions, strains or sprains* can be successfully treated by the prompt application of a hot dressing of **ANTIPHLOGISTINE**—developed more than half a century ago and now widely used as a first aid in bringing athletes with common injuries back to fighting trim.

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