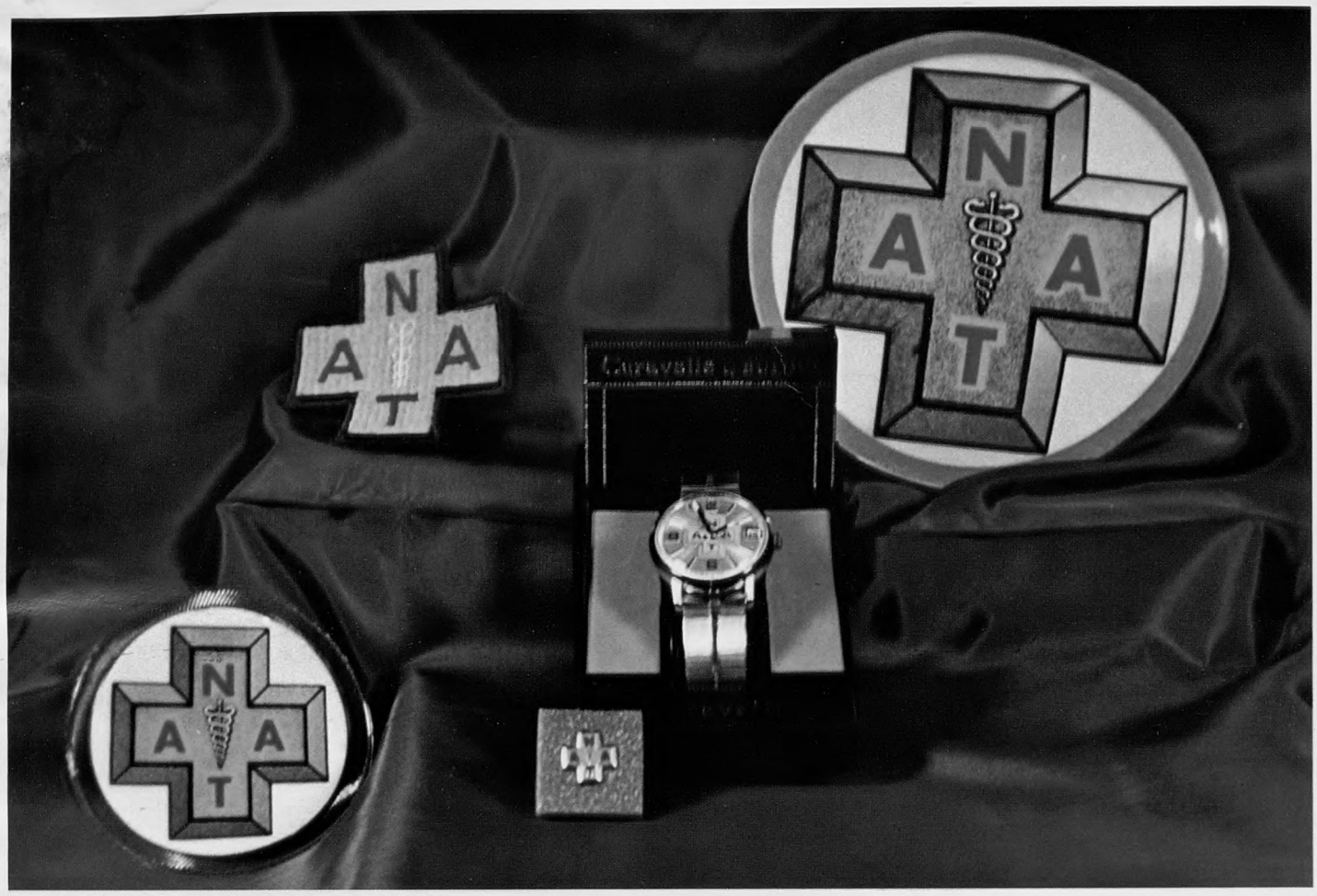
ATHLETIC TRAINING

THE JOURNAL OF THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

IN THIS ISSUE:

Volume 10
Number 3
September 1975



Proudly Display Your NATA Emblem

Lapel Pins	3.50
Cloth Emblems	1.50
Wristwatch with Bracelet Band	37.95

Available through
N.A.T.A.
3315 South Street
Lafayette, Indiana 47904

National Athletic Trainers Association

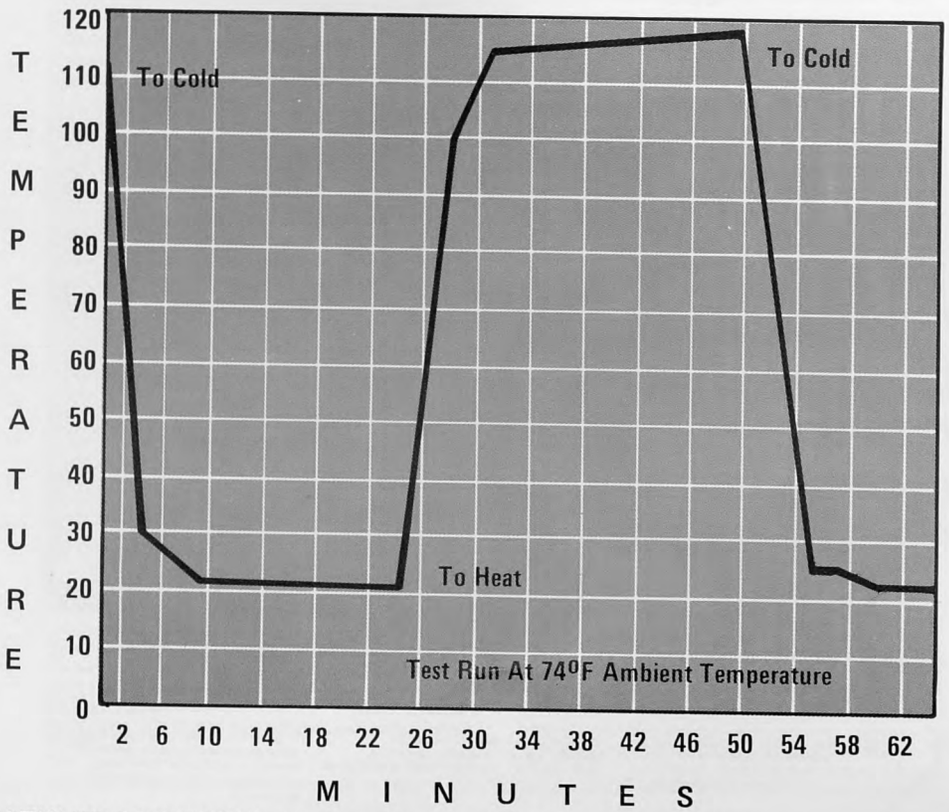
NATA

INTRODUCING

VARI-TEMP COLD HEAT THERAPY

VARI-TEMP APPLICATIONS: UNLIMITED!!!

1. Pain & swelling from sprains, strains, & contusions.
2. Muscle spasms.
3. Most arthritic conditions.
4. Vasoconstriction-vasodilitation locally & distally.
5. Many fractures & other orthopedic conditions.
6. Any other conditions that may require the use of ice, cold or heat.



VARI-TEMP ADVANTAGES: UNLIMITED!!!

1. Completely **dry** — neat & easy to use eliminating the muss & fuss of melting ice or dripping water.
2. **Moist Heat Therapy** can be used by simply applying a thin wet cloth to injured area.
3. **Variable Temperatures** — cold & heat ranging from 20° to 110°F in same unit (contrasting therapy).
4. **Constant Temperatures** with no dissipation of heat or cold.
5. **Flexible Insulating Pads** with velcro tabs for quick wrapping & unwrapping conform to all parts of the body thus directing cold & heat for more effective penetration.
6. **Portable** due to sturdy, light weight case.
7. **Economical** — uses only 115 volt electrical outlet.
8. **No electrical current** in contact with the body.
9. Complies with the four most important procedures for treating injuries: **Cold** or **heat, pressure, elevation & exercise.**

Vari-Temp is available in 3 models:
Model "C": Cold Therapy only.
Model "CH": Cold & Heat Therapy.
Model "CHE": Deluxe model with temperature control from 20 to 120 F.

VARI-TEMP MFG. CO.
1104 N. Marshall Ave.
El Cajon, CA 92020
714-449-7020
Dealer Inquires Invited.

"Some of our key players would have seen a lot less game time if not for the excellent results we're getting with these systems."

"CYBEX and ORTHOTRON measure and rehabilitate not only strength, but power and endurance, too. This is extremely important for evaluating injuries and insuring complete rehabilitation."

"We've seen athletes in seemingly good condition with right to left side or agonist/antagonist imbalances, or a poor power to strength relationship. I think that quantifying and correcting these deficits not only reduces the chance of injury, but actually improves the athlete's performance."

"The entire system is surprisingly easy to use . . . testing methods are quickly learned and results are easily interpreted so that specific rehabilitation exercise and training programs can be tailored to the needs of the individual athlete."

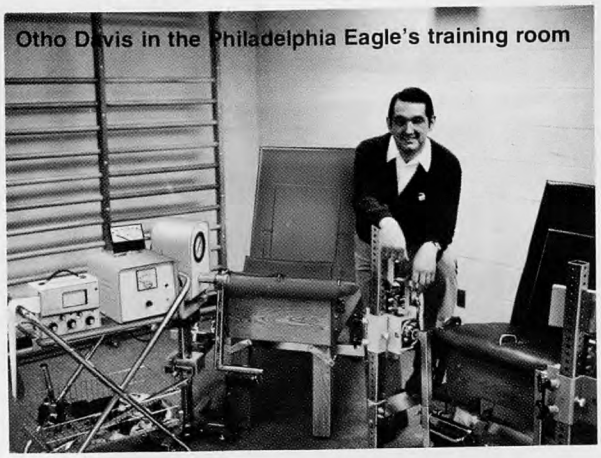
"A CYBEX could pay for itself in shoulder, elbow and wrist rehabilitation alone."

"The players have real confidence in the CYBEX and ORTHOTRON. They believe in results and are as interested in the chart recordings of their progress or performance as the team physician and I. They really want to use this equipment for strength maintenance and training programs."

"We have dramatically reduced our number of knee injuries . . ."

"One of the most eye-opening features of these systems is their ability to test and exercise at high contractile/velocities. Adequate or equal slow-speed strength, like developed with weights, is no guarantee of high velocity, power or endurance."

"After more than a year's experience with CYBEX and ORTHOTRON, we're convinced that we are getting much faster rehab results, reducing the number of re-injuries, and, in some cases, actually improving player performance and preventing injuries from occurring."



Otho Davis in the Philadelphia Eagle's training room

"The cost of CYBEX and ORTHOTRON is a small investment to protect any team's largest investment – talented athletes."

These are some of the teams that have purchased CYBEX II and/or ORTHOTRON in the past year:

Boston Celtics Basketball Club, Boston Red Sox Baseball Club, Cleveland Browns Football Club, Denver Broncos Football Club, Houston Texans Football Club, Indiana Pacers Basketball Club, Minnesota Twins Baseball Club, Minnesota Vikings Football Club, New England Whalers Hockey Club, New York Jets Football Club, New York Stars Football Club, Philadelphia Phillies Baseball Club, Phoenix Suns Basketball Club, San Diego Chargers Football Club, San Francisco 49ers Football Club, Clemson University, University of Illinois, Michigan State University, Michigan Tech. University, NASA (Skylab Team), University of North Carolina, University of Notre Dame, University of Oklahoma, San Diego State College, University of Southern California, University of Texas, Texas Tech. University, U.S. Air Force Academy, U.S. Army Academy, U.S. Naval Academy, Univ. of Western Ontario, Williams Col.

LUMEX INC.
CYBEX DIVISION

Lumex, Inc. — Sports Medicine Dept. — 100 Spence Street — Bay Shore, N.Y. 11706 — (516) 273-2200

MAIL TO: LUMEX, INC./100 SPENCE ST., BAY SHORE, N.Y. 11706

Please send more information on:
- ☐ All systems.
- ☐ CYBEX
- ☐ ORTHOTRON
- ☐ FITRON

Name

Team or Affiliation

Address

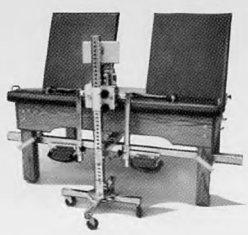
City

State

Zip

Phone

CYBEX II–Now available in special set-up providing the convenience and versatility needed for Sports Medicine and Research applications.



ORTHOTRON–Lower-cost reciprocal Isokinetic exerciser available with S-H-D Tables to suit any training or rehab area's needs.

FITRON–The first and only Cycle-Ergometer designed specifically for the athlete in training . . . much higher work-rates, much stronger frame, higher positive adjustments.

ATHLETIC TRAINING

The Journal of the National Athletic Trainers Association

Volume 10 Number 3 September 1975

ARTICLES

DEPARTMENTS

Athletic Training is published in the months of March, June, September and December by the National Athletic Trainers Association, a non-profit organization. Second class postage paid at Lafayette, Indiana 47904, and additional mailing offices. Address correction requested: Send Form 3579 to 3315 South Street, Lafayette, Indiana 47904.

Non-member subscriptions are available at $7.00 per year and may be obtained by writing to Eastern Associates P.O. Box 1865, Greenville, NC 27834
CHANGE OF ADDRESS may be made by sending old address and new address with zip code number. Instructions should state whether change is temporary or permanent. Allow thirty days for changeover. Address changes should be sent to 3315 South Street, Lafayette, Indiana 47904.

Printed by National Printing Company, Greenville, North Carolina

The National Athletic Trainers Association

President
Frank George
Brown University
Dept. of Athletics
Providence, Rhode Island 02912

Executive Director
Otho Davis
Philadelphia Eagles
Veterans Stadium
Philadelphia, Pennsylvania 19148

Board of Directors

Dist. 1 Wesley D. Jordan
University of Maine
Orono, Maine 04473

Dist. 2 Francis J. Sheridan
Lafayette College
Easton, Pa. 18042

Dist. 3 Craig Lewellyn
West Virginia University
Morgantown, W. Va. 26505

Dist. 4 Robert C. White
Wayne State University
Detroit, Michigan 48202

Dist. 5 William W. Flentje
University of Missouri at Rolla
Rolla, Missouri 65401

Dist. 6 Eddie Lane
3116 Hanover
Dallas, Texas 75225

Dist. 7 Warren Lee
University of Arizona
Tucson, Arizona 85721

Dist 8 Lewis C. Crowl
5207 J Street
Sacramento, California 95827

Dist. 9 Eugene Smith
Memphis State Univ.
Memphis, Tennessee 38111

Dist 10 Richard Melhart
Washington State University
Pullman, Washington 99163

District Secretaries

Dist. 1 Joseph Abraham
Hobart College
Geneva, New York 14456

Dist. 2 Joseph Abraham
Hobart College
Geneva, New York 14456

Dist. 3 Herman Bunch
N.C. State University
Raleigh, N. C. 27607

Dist. 4 Charles Vosler
Ohio University
Athens, Ohio 45701

Dist. 5 Lawrence Morgan
Kansas State University
Manhattan, Kansas 66502

Dist. 6 James Dodson
Midland High School
Midland, Texas 79701

Dist. 7 Troy Young
Arizona State University
Tempe, Arizona 85281

Dist. 8 William (Sam) Nakaso
San Jose City College
San Jose, California 95114

Dist. 9 Steve Moore
Tennessee Technological University
Cookeville, Tennessee 38501

Dist. 10 John Andersen
University of Washington
Seattle, Washington 98105

Committee Chairmen

Audio-Visual Aids - Gordon Stoddard
Certification - Lindsay McLean
Drug Education - John Wells
Ethics - L.F. "Tow" Diehm
Grants and Scholarships - W.E. "Pinky" Newell
History and Archives - Mike O'Shea
Honor Awards - George Sullivan
International Games - Charles "Chuck" Medlar
Journal - Rod Compton
Membership - Bruce Melin
National Convention - Fred Hoover
Placement - Rodney Poindexter
Professional Education - Sayers "Bud" Miller
Sub-Committee for Graduate Education - Gary Delforge
Public Relations - Fritz Massman
Recruitment - Mel Blickenstaff
Research and Injury - Ted Quendenfeld


When it comes to player protection–we cover the field.
We offer over twenty types of scientifically produced adhesive tapes, all designed to help the trainer and coach provide the best possible protection and comfort for their athletes. We also have provided them with product innovations such as SPEED PACK* Packaging, Porous Adhesive Mass and Programmed Unwind Tension, features that help them reduce costs and speed taping sessions.
Player protection begins with
Johnson & Johnson
ATHLETIC DIVISION
New Brunswick, New Jersey 08903
DERMICLEAR
2 x 5 YARDS
DERMILITE
1/2" x 10 YARDS
DERMICEL
COACH
ATHLETIC TAPE
SPEED PACK
POROUS
48 ROLLS
ZONAS
POROUS TAPE
J WRAP
ELASTIKON
ELASTIC TAPE
4"
1/2"
BAND-AID
MOLESKIN
ADHESIVE
Super-Stick
HEAVY PROFESSIONAL TYPE
TINTED
32 ROLLS
SPEED PACK
ATHLETIC TAPE
1694N
*Trademark of Johnson & Johnson
©Johnson & Johnson '74

National
ATHLETIC TRAINERS ASSOCIATION

PRESIDENT
FRANK GEORGE
Brown University
Department of Athletics
Providence, Rhode Island 02912
Telephone 401 863-2211

FROM THE PRESIDENT'S DESK

EXECUTIVE DIRECTOR
OTHO DAVIS
Philadelphia Eagles
Veterans Stadium
Philadelphia, Pa. 19148
Telephone: 215/463-2500

Dear Member NATA,

It was good to meet and talk with so many of you at the annual meeting in Anaheim. We would like to thank all the members of the Convention Committee for the time and effort that was spent to make this convention a tremendous success.

The annual business gave me a chance to speak with the members of the association and to discuss many of the current issues which are facing the NATA and the profession of athletic training. The minutes of the business meeting and the Board of Directors meetings are published in this Journal, so you will have the opportunity to read my comments and to study the decisions of the Board of Directors.

Some of the comments I would like to call to your attention concern the membership and their willingness to become really involved with the association. Some of these comments have been in previous letters to the association. The Board of Directors must make a number of important decisions. The more opinions we have on any issue, the more democratic the decisions of the board will be. I hope every member of this association will feel they have something to contribute.

Because of administrative problems, the continuing education program has not developed as we hoped it would. The Board has postponed the beginning of this program until January 1977. The membership of NATA was asked to fill out a questionnaire concerning continuing education. Of those responding, 76% voiced approval of a continuing education program.

In the June issue of ATHLETIC TRAINING there were comments on athletic trainers suturing, aspirating, and injecting. At the meeting in Anaheim a lawyer, James Hayes, spoke on the increasing legal implication of sports medicine, with emphasis on athletic training. Please be very aware of what your duties as an athletic trainer are, and what they should be. Other subjects I have commented on were: Federal legislation, the NATA High School Faculty Athletic Training Programs, the need for the NATA to have a full-time Executive Director, and Convention sites.

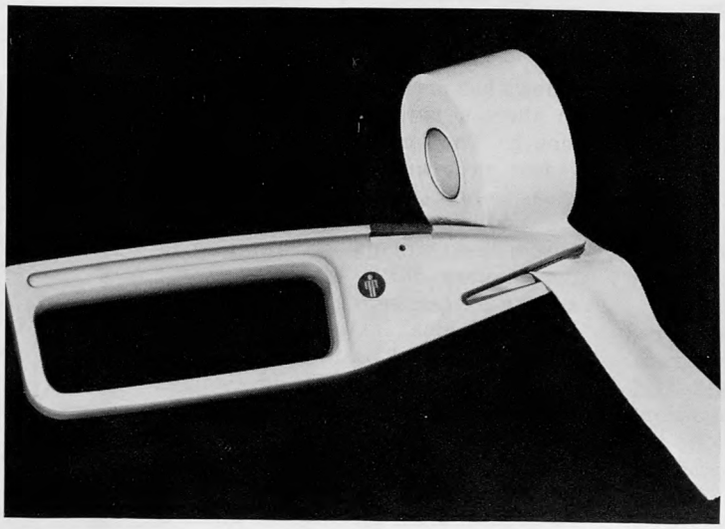
The Board of Directors would like to have as much input from the association as possible regarding convention sites. Discussion has been aimed at the idea of choosing a central location site, or continuing with rotating sites . . . from east to central, to west to central, which would give us two central locations every four years.

Sincerely,

Frank George

Frank George
President, NATA

The Shark™:
PPI™ will match it against any other tape and bandage cutter on the market for speed and safety.



Ever wish that someone would come up with a tape and bandage cutter that really worked – one that could cut through several layers of tape and not need the blade changed after one use? We've got it – The SHARK.

In field testing, trainers and athletes told us that the new SHARK Tape and Bandage Cutter is faster, easier to handle and more comfortable than anything they've used before.

The longer-life-surgical carbon steel blade is so effective and sharp, it will quickly cut as many as 10 layers of elastic tape. Yet it is extremely safe with an easy-to-replace, one-piece blade cartridge that snaps in place in seconds without screws or hooks.

The SHARK is one of the latest additions to the Protective Products (PPI) complete line of training supplies, which includes ACE® brand bandages, aerosols, liniments, vitamins, and other products to fulfill your training room needs. All are backed by the extensive testing facilities of the PPI parent company, Becton, Dickinson and Company, a leader in health care products since 1897.

For our new catalog outlining our complete line which also includes helmets, shoulder pads and body pads, write Protective Products, P.O. Box 291, 1913 E. Pine, Grand Prairie, Texas 75050.

PROTECTIVE PRODUCTS
Division of Becton, Dickinson and Company
Post Office Box 291
1913 E. Pine
Grand Prairie, Texas 75050
(214) 264-9311

THE STUDENT TRAINERS CORNER

Weight Training In The Off-Season

by
ROBERT C. MORRIS

In athletics the techniques of coaching have changed. More time is being spent on the fine points of the game. This places a great responsibility upon the athlete to maintain superior physical fitness throughout the year. For the nonathlete, it is a matter of self pride to be in good physical condition.

Many elements must be considered in a football conditioning program. Strength, endurance, flexibility, speed, agility, climatic conditions and individual rehabilitation are important factors in a beneficial program.

Strength to the athlete is one of the most valuable assets he can possess. Strength may be defined as the capacity of the body to exert force on some external resistance. Excluding physical defects and some pathological conditions, strength is accessible to all; muscles can be strengthened. The importance of strength to athletics is not new; strength has long been a valuable asset to the success of many coaches.

Weight lifing is a sport in which actual competition occurs between individuals and teams by lifting a maximum amount of weight only one time. Weight training is the use of light weights to increase the resistance of the number of bodily movements or selected muscle groups for the improvement of physical condition, strength, power, health, or one's performance in a particular sport.

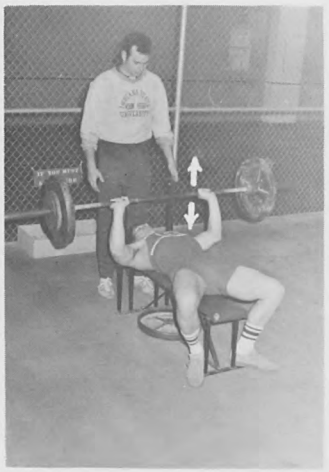
The simple weight program that follows has proven to be successful in as short a period of time as three months. The concentration of this off-season program is on specific body areas to be developed, but no part of the body can be neglected. Most authorities recommend that lifting be done every other day to permit adequate recovery time between lifting sessions.

But, it should be understood that the controlling factor in weight training is the overload principle. This principle states that in order that musclar strength develop, the tension exerted by the muscles must be greater than the tension which is usually exerted by these same muscles. In essence all of the tiny muscle fibers which compose a muscle of the body must be utilized to bring about an increase in strength.

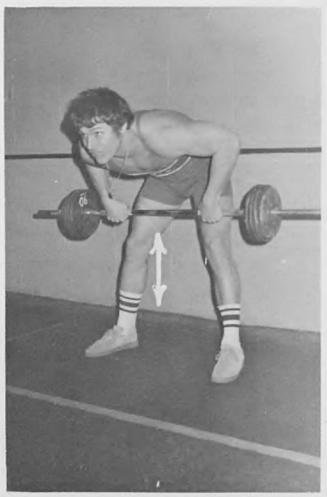
The following weight-training program is based on three (3) sets of ten (10) repetitions each, maximum plan. This simply means that there be a progression of weight for each set of repetitions and that the final set (3rd) be using the maximum amount of weight one can lift ten times. This amount does not necessarily indicate an absolute maximum amount, but the lifter should have to give good effort on the last repetition.

After working with the weight two or three times one will be able to determine the weight load for the performance of each lift ten times. When the lifter is able to perform more than ten repetitions at the maximum amount it is time to increase all weights by five to ten pounds.

What follows are the six exercises (lifts) that are, I feel vital for an offseason weight-training program, followed by an easily made individual/weekly work-out chart. ●

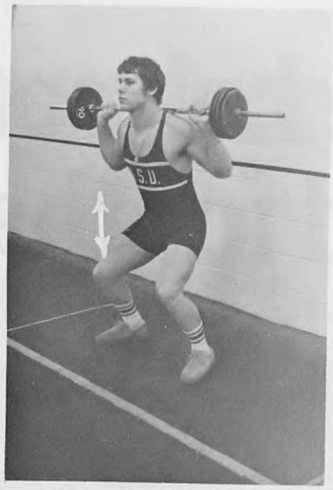


Bench Press: The author spots while Chuck Drewry develops the muscles of his chest, shoulders, and the back of his upper arms.

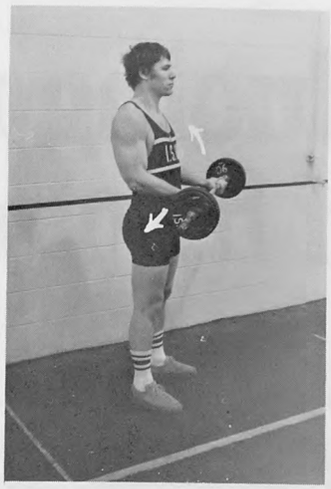


Bent-Over Rowing Pull to Chest: Develops back, back of shoulders, and front of upper arms.

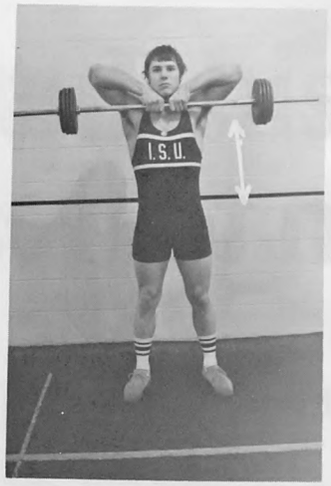
Mr. Morris received his A.B. degree at Duke University and his M.S. degree at Indiana State University where he is presently working on his Doctoral Degree.



Half-Squat: Develops the thighs and hips.



Two Arm Curl: Develops the front of the upper arms and the front of the forearms.



Upright Rowing: Develops allied upper back muscles and arms.

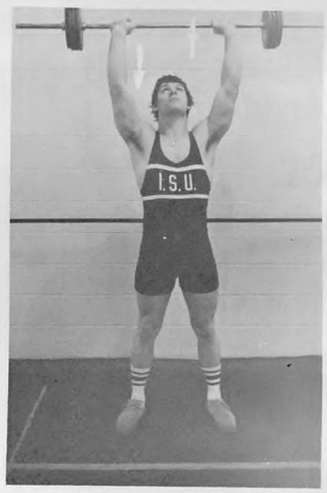
WEEKLY WEIGHT TRAINING CHART

Name _____

Exercise (Lift)	Date / / Set I	Set II	Set III	Date / / Set I	Set II	Set III	Date / / Set I	Set II	Set III
1. Bench Press									
2. Bent-over Rowing									
3. Half-Squat									
4. 2-Arm Curl									
5. Upright Row									
6. Overhead Press									
7.									
8.									

The Individual/Weekly Weight Training Chart, is designed to allow the individual ample recovery time between lifting sessions, flexibility of routine schedule, and consistent recognition of personal progress. In each set box both the number of repetitions and the weight attempted should be listed. For example:

	Set I	Set II	Set III
2-Arm Curl	10 / 75	7 / 85	5 / 95



Overhead Press Behind Neck: Develops the shoulders, upper chest, back and the back of the upper arms.

WANTED: Ideas For 1977 Convention

The student-trainer staff of Ohio University is starting to plan a program for the junior, senior high school and college-age student trainers attending this Convention. Our goal is to set up a program that will complement the regular convention themem, "Back to the Basics." We are interested in your ideas-----what you would like to see take place at the 1977 Convention, in Dearborn, Michigan.

Please send any suggestions you might have, along with your name if you are willing to help in any way, to the following address:

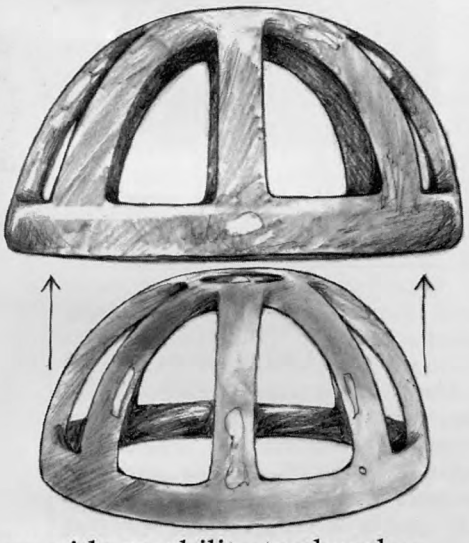
Student Trainer Staff
Dept. of Intercollegiate Athletics
Ohio University
Athens, Ohio 45701

Introducing the helmet a son to wear if he played football.

The Kendall Company and the University of Michigan's Neurosurgery Research Lab have created a new football helmet system. The system provides: 1) Better safety 2) More comfort 3) Easier fitting 4) Better visibility for the player.

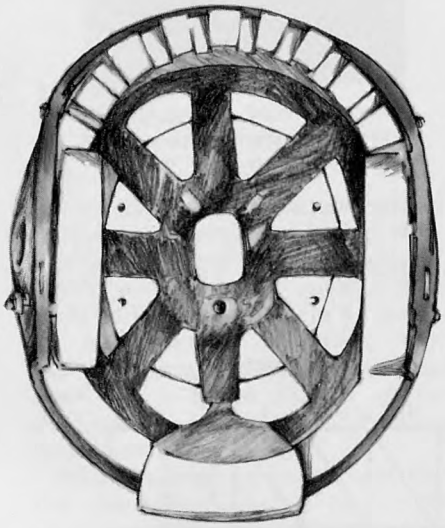
Safer.

To begin with, there are two liners instead of the usual one. The liners work together to



provide an ability to absorb a wide range of energy impacts. That means double protection.

The doctors and bio-engineers at the Bike Medical Research Center took many more precautions. In addition to the dual air liner system, which handles most impacts,



they added a foam rubber back up system. When extra absorption ability is needed, (for one-on-one with a bull-dozer, for instance) it's there.

No "Blow-outs."

Bike's dual air liner system is molded without seams. This helps prevent the problem of air liner blow-outs. In thou-sands of player-use hours there wasn't a single blow-out.

The helmet is molded from a tough polycarbonite alloy plastic. This has already proven itself to be the finest helmet material.

We made the shell thicker in areas of frequent contact, and at the points of face mask attachments.

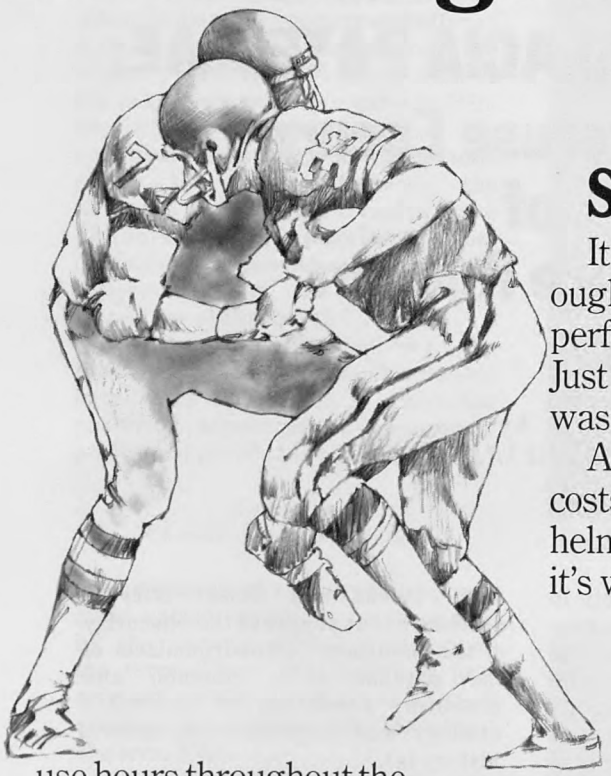
At Bike's Medical Research Center the most extensive testing facilities in the indus-

try were installed in order to test the helmet as it was being developed. It was a fool-proof way of guaranteeing perform-ance every step of the way.

Using currently accepted test methods, the Air Power helmet out-performed all the other leading helmets. As a total head protection system it scored so much better than any other helmet it is literally in a class by itself.

Sure, the Bike Air Power helmet passed the lab tests, but you don't play football there. So we took it to the field and after thousands of player-

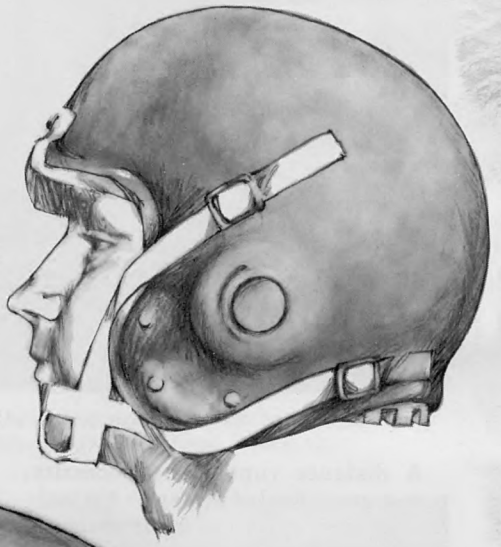
neurosurgeon would want his



Summary.

It took over 2 years of thorough lab and field testing to perfect this helmet system. Just for its extra safety alone it was worth every minute of it.

As you might expect, it costs more than other football helmets. We think you'll agree it's worth every penny of it.



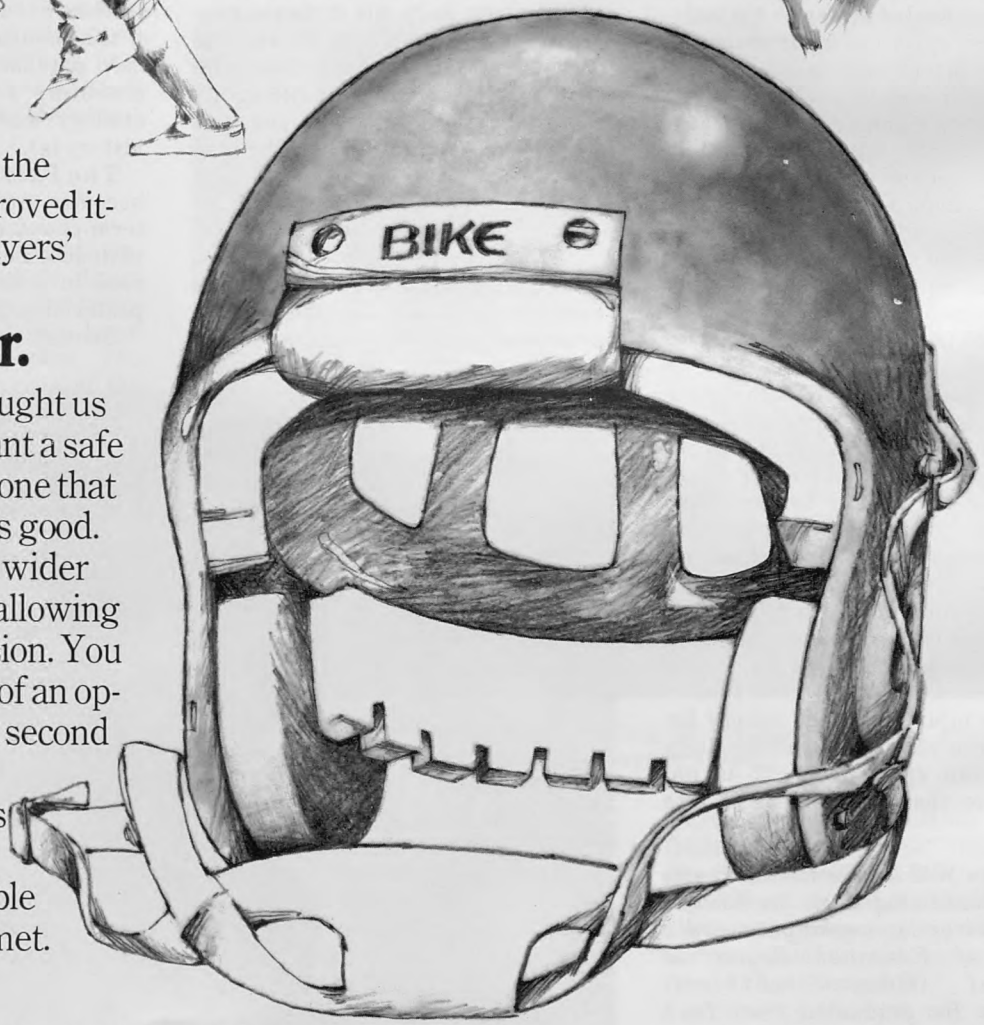
use hours throughout the country this helmet proved itself to be a football players' helmet.

Plays better.

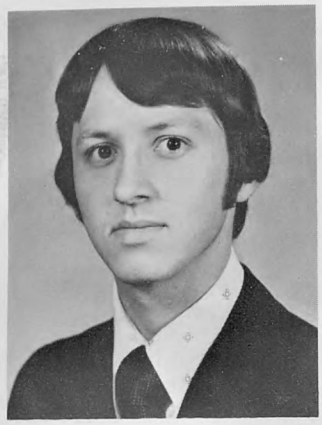
The field testing taught us that while coaches want a safe helmet, players want one that "plays" well, and feels good.

The Bike helmet is wider across the front, thus allowing greater peripheral vision. You can pick up that flash of an opponent's jersey a split second sooner.

Most of the players said the Bike helmet was a more comfortable and better fitting helmet.



The Bike® Air Power Helmet. From Kendall.



CHONDROMALACIA PATELLAE: The Overuse Enemy of Distance Runners

by
NORMAN WILLIAM GORDON

A distance runner, by necessity, puts a great deal of stress on his body during training. An overabundance of stress may often result in any variety of overuse injuries.

In distance running, as in many other sports, the injured knee often causes the greatest amount of pain, poor performance, and lost practice time. The so-called "runners' knee" can denote any number of conditions - tendonitis, synovitis, bursitis, arthritis ligament or cartilage damage, and last but not least, chondromalacia patellae.

Chondromalacia patellae is among the most obscure, least readily detectable, and most common of these conditions in distance runners. A study of injuries to runners by Brubaker and James (2) revealed that knee injuries accounted for 41% of all injuries to a group of middle and long distance runners they surveyed. Of the knee injuries in that group, 20% were diagnosed as chondromalacia patellae.

A knee injury can spell misery for the distance runner. Chondromalacia patellae can spell doom. It is important for the trainer to be able to deal with the condition effectively in order to help keep his distance runners on the move. To do so, the trainer should have a good idea of the exact nature of the condition, its major causes, techniques of recognition, and effective methods of treatment.

The Condition

The fact that chodromalacia is not readily detectable is seen in the many variations given the definition of the term. Devas and Golski offer a definition that supports the obscurity of the condition: "Chondromalacia of the patellae is a common and disabling condition of uncertain etiology and unpredictable natural history (4)."

The British Medical Journal becomes more specific, saying, "The term chondromalacia patellae is used to denote a condition affecting fit persons in which pain arises from the posterior aspect of the patellae (6)."

Bentley describes the condition as

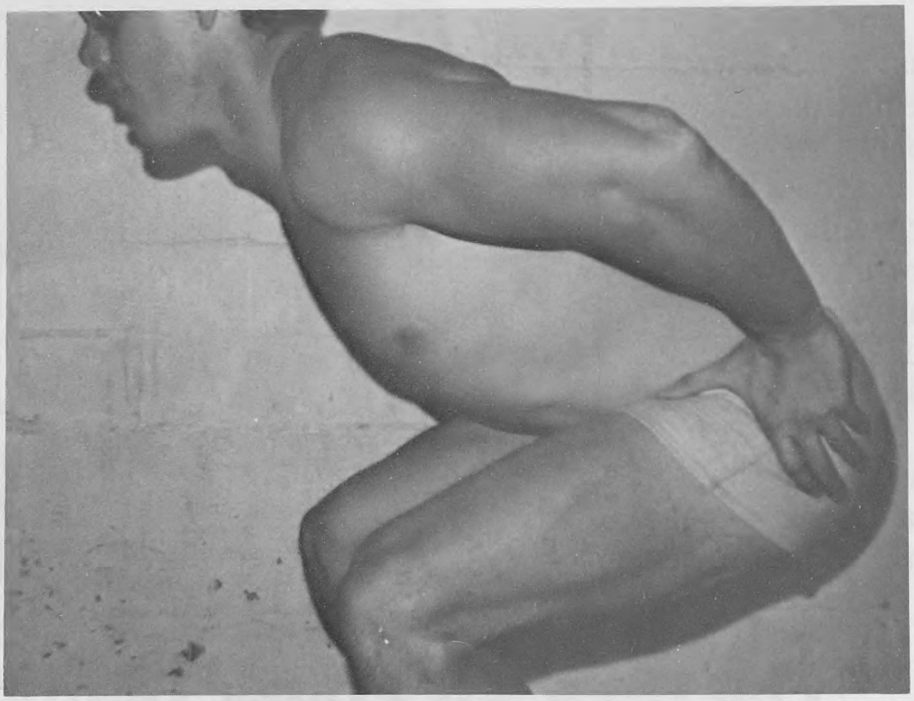


FIGURE 1 - The athlete assumes a half-squat position, forcing the patella against the patellar groove - active flexion.

Norman William Gordon currently is a graduate student at the University of Virginia, working toward a Master of Education degree in Physical Education Athletic Training. He graduated from Lock Haven State College, Lock Haven, Pennsylvania, in 1973 with a Bachelor of Science degree in Health and Physical Education.

"softening of the articular cartilage of the patellae with fibrillation, fissuring, and erosion of the articular cartilage (1)."

Dr. George Sheehan, a distance runner himself, has studied the condition in distance runners and offers a definition slightly different from the others presented. While he defines the pathology much the same as Bentley, Sheehan believes that " . . . the one plane symmetry of the patella riding the groove between the (femoral) condyles is altered to cause chondromalacia patellae. This deviation is transmitted by structural abnormalities in the intricate architecture of the foot (7)."

For the sake of simplicity, the trainer may refer to chondromalacia patellae as a condition in which the posterior aspect of an abnormally positioned patella becomes damaged.

Causes of Chondromalacia Patellae

The causes of chondromalacia are quite varied, as might be imagined, by the variety of definitions given the term. There are, however, four primary causes: direct trauma; weak quadriceps; overuse; foot structural abnormalities.

Direct Trauma

Earliest accounts of the condition, given around 1906, point to direct trauma as the major cause, and today that theory is supported in a large number of non-athletic cases. The trauma may cause fracturing of the patella or femoral condyles, or may allow for the development of calcium deposits in the area. Chondromalacia could develop secondarily to either of these conditions.

Weak Quadriceps

Weak quadriceps muscles are sometimes offered as a cause for chondromalacia. A weakened condition may allow the patella more freedom of lateral motion, especially when combined with the strain of distance running. Since the distance runners quadriceps are trained for endurance activities, rather than activities requiring great thigh strength, a weakened condition may combine with one of the following causes to disable the runner.

Foot Abnormalities

Sheehan (8) theorizes that foot abnormalities add to the stress placed upon the knee, causing displacement of the patella and increased friction between the patella and the femoral condyles. One such abnormality is prevalent in causing running-related injuries. According to Sheehan, "The most frequent cause of structural instability in the foot is Morton's Foot (congenitally shorter first toe). It is a biomechanical absurdity . . . the foot adapts by either bearing most of the weight on the head of the second metatarsal, thereby causing a stress fracture, or by pronating the foot (rolling over to the inside) and opening a Pandora's Box of overuse injuries . . . It is possible that when these conditions occur, no one observes whether the second toe is longer than the first (8)."

Pronating the foot may also cause the quadriceps to pull the patella to a position that is more directly over the lateral femoral condyle than is normal.

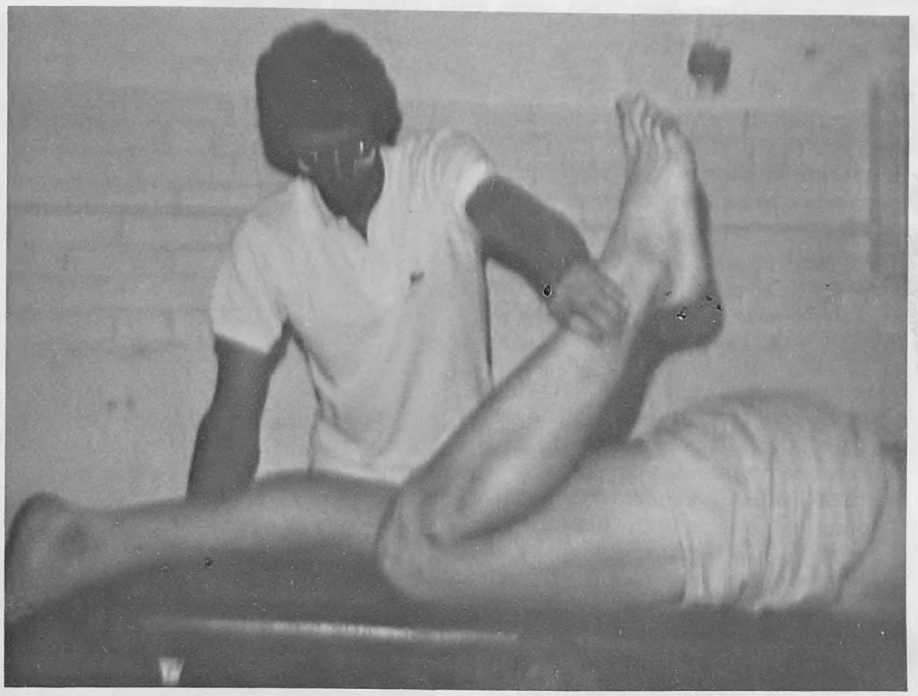


FIGURE 2 - With the athlete lying in the prone position, the trainer passively flexes the leg to force the patella into the groove - passive flexion.

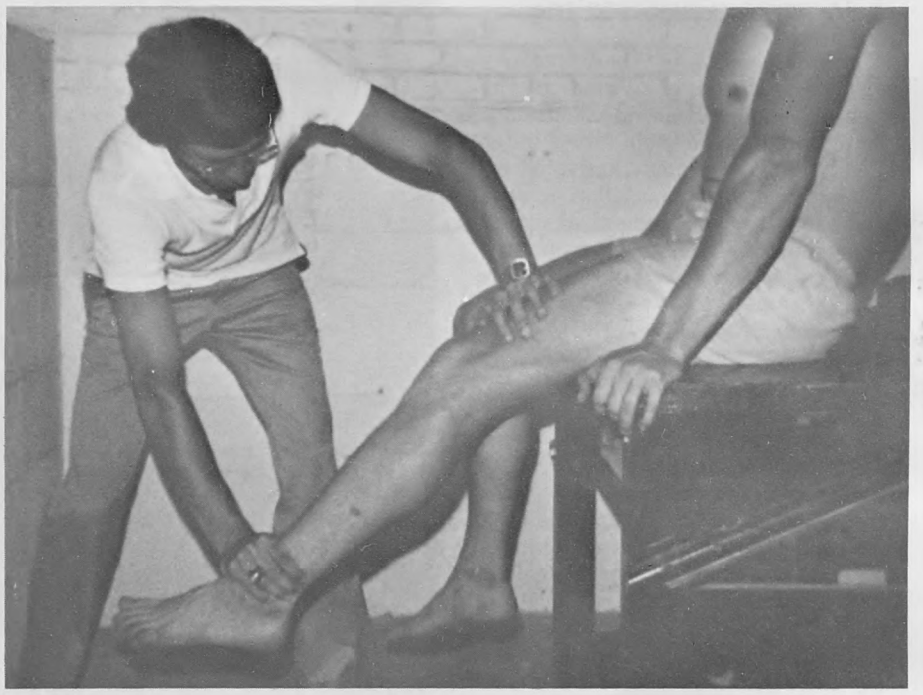


FIGURE 3 - Trainer steadies the thigh as the athlete attempts to straighten his leg against the resistance of the trainer's arm.

Overuse

A distance runner puts varying degrees of strain on the quadriceps tendon and the patellar region over long periods of time. The effects of this strain day after day may cause a " . . . disturbance of rhythm of the patellar function (5)." Differences in running speed, length of stride, direction of stride, and variations in the running surface may all cause the patella to be displaced slightly and abruptly. This displacement, combined with the repetitive action of running, could cause some wearing of the patellar articular cartilage.

Distance runners are subject to overuse problems almost constantly. Constant repetition of the knee action in running, when combined with slight patellar displacement will cause patellar malacia to develop. If the displacement is caused or worsened by structural abnormalities of the foot, the condition is likely to be more severe, and more difficult to treat.

Diagnosing Chondromalacia

The diagnosis of chondromalacia patellae is almost as varied as the cause of the condition. Most often, a runner complains of pain on or under the patella. Symptoms that most often appear are retropatellar aching, especially after long periods of sitting or vigorous exercise, or pain on deep knee flexion and active extension, as these actions most affect patellar placement.

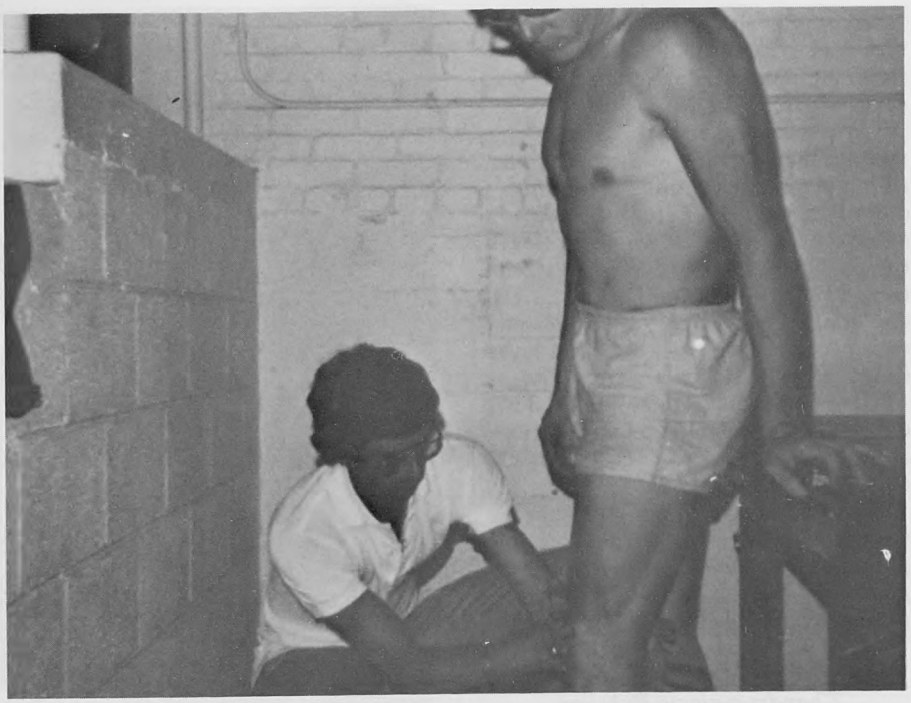
Diagnosis by Cause

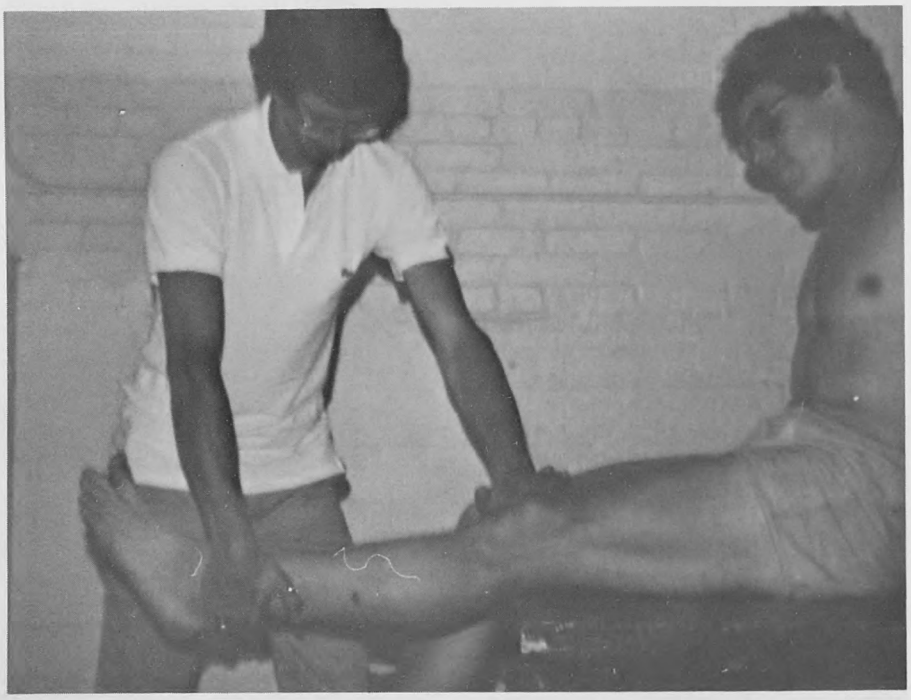
O'Donoghue (5) classifies chondromalacia patellae into three groups on the basis of cause.

Group One - Malacia due to acute trauma or repeated lesser trauma. The findings of pain on pressure, extension, and flexion are localized around the patella. A distance runner would have a Group One diagnosis only if he were to fall or otherwise contuse the knee.

Group Two - Intrinsic injury to the knee, with accompanying disturbance of the rhythm of knee action. Malacia is coincidental to the original injury. The patellar symptoms may be amsked by the original condition so that diagnosis is not performed until much later, after the original condition has cleared up. Patellar pain that develops as a result of injuries such as hyperextension, tendonitis, or bursitis would be diagnosed as Group Two malacia.

Group Three - Increasing discomfort and disability centering on the patella without previous history of trauma or injury. The joint is asymptomatic except for the patella. Gross subpatellar crepitation is usually the first sympton. Any action which forces the patella against the patellar groove is painful and increases the crepitation. A Group Three diagnosis is most often due distance runners, as overuse and structural abnormalities will cause the patellar discomfort.





FIGURES 4 & 5 - The trainer applies pressure to the relaxed patella, forcing it against the patellar groove. This may be done standing, or sitting with the trainer supporting the weight of the lower leg.

Diagnosis by Severity

Bentley (1) describes four grades of chondromalacia patellae according to the severity of the condition. A realistic approach to treatment will develop out of an understanding of which of these grades manifests itself most often in distance runners. The grades are:

I- Localized softening,

swelling, or fibrillation of the articular cartilage.

II- Fragmentation and fissuring in an area of 1.3 centimeters or less in diameter on the underside of the patella.

III- Fragmentation and fissuring in an area of more than 1.3 centimeters in diameter.

IV- Erosion of the articular cartridge down to the subchondral bone.

Chondromalacia can appear in any combination of the O'Donoghue groups and the Bentley grades, thereby producing a large difference in individual cases.

A distance runner who develops chondromalacia as a result of overuse and structural abnormalities can usually be considered as having Group Three, Grade One condition. The knee is asymptomatic except for the patella (Group Three), and is pathologically in the early stages of degeneration (Stage One).

Techniques of Recognition

Preliminary recognition of patellar malacia can be performed by the trainer on the basis of simple flexion, extension, and pressure tests.

Flexion testing involves either weight-bearing flexion, (figure 1), such as a full or half squat, or passive flexion, such as lying prone and flexing the heel to the buttock (figure 2). In either test, pain may be present at any degree of flexion, as the patella is being forced harder into the patellar groove with increased flexion.

Extension testing can be done with the athlete sitting on the training table with the leg flexed (figure 3). The trainer steadies the thigh with one hand while supplying a resistance to the active extension of the leg with the other hand. This test is also to be performed in varying degrees of extension, once again to note the relative position of the patella in respect to the patellar groove.

Pressure testing (figures 4&5) involves simply fixing the leg in a passive patellar position, and applying pressure to the patella, forcing it against the femoral condyles.

Mild pain resulting from any of the mentioned tests may be an indication of a slight case of chondromalacia. Severe pain should be checked further.

A case that appears to be more than mild should be attended to by a physician. The use of x-ray, arthography, and arthroscopy will assure a very complete diagnosis (figures 5,6,7, &8).

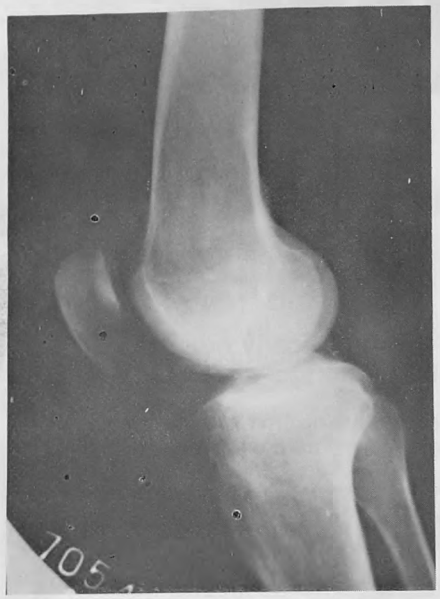


FIGURE 6 - A medial view of the normal knee, with the patella normal in terms of position and condition.

FIGURE 7 - Anteromedial view. Upper right and upper middle borders of the patella are somewhat undefinable, indicating some fissuring or fragmentation of the patella.

Treatment of Chondromalacia

Treatment of Grade One, developing chondromalacia patellae is accomplished most often by a variety of conservative measures. Brubaker and James (2) report that rest, immobilization, analgesics, and physical therapy have been used in treatment. The physical therapy referred to here was whirlpool treatments, moist heat pack application, cold applications, and therapeutic exercise.

Because of the uniqueness of each individual condition, treatment is often specific and problematical. Darracott and Vernon-Roberts (3) report promising results using

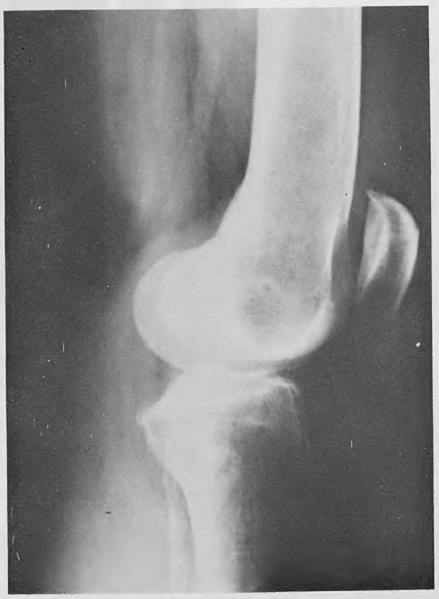


FIGURE 8 - Same knee as Figure 7, viewed laterally. Shows degeneration of the posterior aspects of the patella, as well as degeneration of the lateral femoral condyle.

graduated quadriceps exercises and corticosteroids. Another possible approach is to have the athlete avoid all strenuous exercise, especially running, begin static quadriceps exercises with slight knee flexion to avoid patellar movement, and to precede the exercises with short-wave diathermy (6).

Vastus Medalis Support

Specific development of the vastus medalis muscle has also been mentioned as a useful rehabilitative technique (10). Because of its' insertion on the medial aspect of the common quadriceps tendon and the upper medial border of the patella, the vastus medialis will add support to the medial capsular ligament of the knee. The patella will be held correctly in the condylar groove, thereby reducing the rubbing between the patella and the lateral femoral condyle.

Inverting the foot during static or dynamic quadriceps exercises will have the effect of internally rotating the tibia, and isolating on the vastus medialis, thereby increasing the training effect for that muscle (figure 9).

Surgical Techniques

The most common treatment of Grades Two, Three, and Four is surgery; chondral shaving, patellectomy, or transportation of the tibial tubercle as developed by Devas and Golski (5). With all surgical techniques, straight leg raises may be begun immediately following the operation. With the transposition technique, flexion exercises and weight bearing may be started within a week. The patellectomy & chondral shaving require a period of no exercise due to casting. Quadriceps weakness, knee instability and disabling restriction of flexion are sometimes the result of patellectomy, but rarely develop from chondral shaving or transposition.

If a distance runner were to develop patellar malacia to the point where surgery is advisable, return to normal training will be a long time in coming. Time off due to surgery should not be a consideration, as the condition undoubtably limited practice time severely beforehand. After surgery, the runner will have to allow plenty of time to retrain at a rate carefully planned in conjunction with the trainer in order not to aggravate the injury, or create a new disabling condition.

Orthotic Foot Control

Dr. Sheehan theorizes a much different treatment of chondromalacia patellae: "The way to treat chondromalacia patellae is to treat the foot . . . my patients (distance runners subscribing to *Runners World* Magazine) have not had promising results from quadriceps exercise and corticosteroid injections, nor from any other remedies listed in the literature. They have, however, had very gratifying results from podiatric treatment (custom-molded orthotics) of the biomechanical difficulties of the foot that supports and stresses the damaged knee (7)." Sheehan found that 35% of the runners had Morton's Foot, and that others had forefoot varus or narrow subtalar range.

Dr. Steven I. Subotnick (9) believes that orthotics can be of great help to the distance runner with structural or gait abnormalities. Subotnick, a podiatrist, supplies his distance running patients with two pairs of orthotic supports (figure 10).

One pair is a rigid, custom-made, functional appliance, made from a positive cast of the foot while held in a neutral position. This pair is worn in both street shoes and training shoes, and appears to function well for runners for distances from a few miles to the marathon.

The second pair is a soft, flexible appliance. This pair does not provide as precise, functional control as the rigid supports, and are thus utilized for competition only.

Subotnick reports that the rigid supports are very successful in

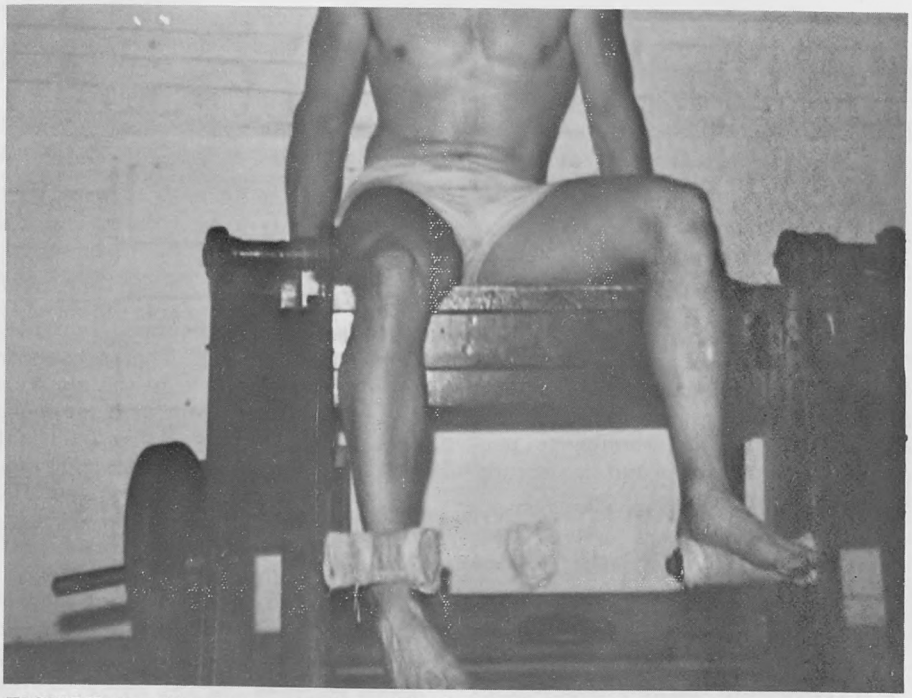


FIGURE 9 - The same exercise with the foot inverted to isolate more of the vastus medialis.

FIGURE 10 - Left: rigid, functional appliance, usually used for training. Right: soft, flexible appliance used for competition

relieving the symptoms of chondromalacia, and that almost all of his patients have been able to continue running with gradual to complete disappearance of the related causative factors.

Conclusion

Chondromalacia patellae can develop very rapidly from a mild to a more serious condition, but because of the nature of training used by distance runners, the pain and motion limitations will usually be severe enough to impede training and force the athlete to seek help. The distance runner who complains of pain in the knee needs to be given individual attention.

The major cause of chondromalacia in the distance runner appears to be overuse - constant wear and tear on the patella. Any runner who develops the condition should also be checked for structural abnormalities of the foot, as these will greatly aid the degenerative capabilities of overuse.

The best treatment of chondromalacia will depend on the severity of each individual case. If the condition is caught in its early stages, rest, heat and cold applications, and conservative rehabilitation exercises will be the best course of action. Should the runner not respond to conservative treatments, the trainer and athlete should consult the team physician for referral to a podiatrist.

Orthotic treatment, in the form of foot supports, will relieve the symptoms, and combat the causes of chondromalacia patellae, and at the same time allow the distance runner to get back on the road again.

A quick, individualized approach to the injury by the trainer will help turn chondromalacia into a temporary condition, rather than one of permanence.

BIBLIOGRAPHY

1. Bentley, G., "Chondromalacia Patellae," *Journal of Bone and Joint Surgery*, 52A, 221-232, 1970.

2. Brubaker, C.E., and James, S.L., "Injuries to Runners," *Journal of Sports Medicine*, 2, 189-198, 1974.

3. Darracott, J., and Vernon-Roberts, B., "Chondromalacia Patellae," *British Medical Journal*, 1, 491-492, 1973.

4. Devas, M., and Golski, A., "Treatment of Chondromalacia Patellae by Transposition of the Tibial Tubercle," *British Medical Journal*, 1, 589-591, 1973.

5. O'Donoghue, D.H., *Treatment of Injuries to Athletes*, W.B. Saunders Co., Philadelphia, 590-596, 1970.

6. Pre-clinical Editorial Discussion, "Chondromalacia Patellae,"- *British Medical Journal*, 2, 123-124, 1972.

7. Sheehan, G., "Chondromalacia Patellae," *British Medical Journal*, 2, 123, 1972.

8. Sheehan, G., "Let's Hear It for Morton's Foot," *The Physician and Sports Medicine*, 2, No. 3, 31, 1974.

9. Subotnick, S.I., "Orthotic Foot Control and the Overuse Syndrome," *The Physician and Sports Medicine*, No. 1, 75-79, 1975.

10. Williams, J.G.P., "Diagnostic Pitfalls in the Sportsman's Knee,"- *Proceedings of the Royal Society of Medicine*, 64, 640-641, 197.1 •

ULTRASOUND

by
ANN H. DOWNER, L.P.T., B.S., M.A.
The Ohio State University

Due to the lack of knowledge regarding what ultrasound is, how it is produced, the different techniques of application available, and the physiological changes that occur in the body tissues, many ultrasound units are tucked away and never used or are improperly used. Ultrasound is not a panacea, but if used correctly by the athletic trainer with full awareness of the dangers, and on a physician's prescription, it can be a very effective form of treatment.

What Is Ultrasound

Ultrasound consists of acoustic vibrations or sound waves which are inaudible to the human ear because they occur at a much faster rate than the ear can perceive. The upper limits of audible sound are 16,000 - 20,000 cycles per second. Sound wave frequencies occurring above 20,000 cycles per second are called "ultrasound." Therapeutic treatment units operate at a frequency of from 800,000 to one million cycles per second.

Production of Ultrasound

The high frequency sound waves are produced by applying an alternating current to the surface of a suitable crystal such as quartz or a ceramic crystal such as lead-zirconate-titanate. The electric current changes the shape and size of the crystal and causes it to vibrate. This oscillation of the crystal produces the ultrasound waves and sends them to the face of the transducer. With a coupling medium (described later) between skin and transducer, the high frequency sound waves are transmitted into body tissues.

Principle Effects of Ultrasound

Absorption of ultrasound energy causes heat in the tissues. Because of reflection of ultrasound at interfaces of dissimilar tissues, a structural heating results; i.e., longitudinal ultrasound waves are reflected and changed into transverse waves. Ultrasound also heats selectively because some tissues absorb more waves than do others.

Micromassage, an actual to and fro movement of tissue particles, is caused by compression and rarefaction of tissues as the sound waves penetrate the body.

As a result of these effects, there is relief of muscle spasm, analgesia, sedation, and increased vasodilation and thus an increase in circulation to the part being treated. The increased volume of blood brings more nutrients into the area and hastens removal of waste products. Membrane permeability is increased and this results in an elevation of fluid absorption.

Continuous or Pulsed Ultrasound

When continuous ultrasound is used, the unit generates an ultrasonic beam that is emitted without interruption until the unit is turned off so there is a continual heat generating process in the tissues.

The pulsed or interrupted beam lessens the heating effects because the heat dissipates during the time interval between the pulses. Thus, there is relatively little heat in the tissues, but the micromassage effect remains.

Contraindications for Ultrasound

Before ultrasound is used, all contraindications must be recognized. Ultrasound is absolutely contraindicated in the following conditions and areas: acute inflammation and trauma; on the spine after laminectomy; acute infections;; hemorrhagic areas; genitals; eyes; malignant or non-malignant tumors; brain; heart or region of the heart; areas that have had deep x-rays, radium or radioisotopes until at least six months have elapsed; any part of any person who has a pacemaker; areas of vascular insufficiency; over epiphysis of growing bones; the pregnant uterus. Great caution should be used in areas of skin anesthesia or decreased sensation and over bony prominences.

Reflection and Refraction of Ultrasound

Air is a powerful reflector of ultrasound, (approximately ninety-nine percent of ultrasound is reflected by air), so all air must be removed from the skin. This is done by coupling the transducer to the skin with a material that has similar density and sound velocity as the skin.

The choice of which coupling medium to use depends on what part of the body is to be treated and the transducer technique to be used. Water and commercial gels are the best.

Reflection also occurs at the transducer-air interface. The transducer should never be held in the air with the intensity up from zero for more than a few seconds. It can overheat and burn the patient, ceramic crystals can be damaged and the cement adhering the crystal to the inside of the metal housing can be softened.

A third area of reflection of ultrasound is the interface between the periosteum and bone allowing heat to build up. If there is not enough coupling medium between the skin and transducer, if the transducer is being moved too slowly or if the intensity is too high, periosteal pain and/or a burning sensation may result in the area being treated.

When using any coupling medium except water, total refraction of ultrasound will occur between the coupling medium and the skin if the transducer is held at more than fifteen degrees from a right angle to the skin.

Contact Technique

The contact technique is used on relatively smooth surfaces and where light pressure of the transducer will not cause pain. In this method, the transducer is held in firm(but not heavy) contact with the skin and at a right angle to the part throughout the entire treatment.

When using continuous ultrasound and a 7 to 13 cm^2 or smaller transducer, the transducer should be kept moving in either small circular movements or small longitudinal strokes at approximately one inch per second. The next stroke should cover fifty percent of the previous stroke. The transducer may be stationary when it is 50 cm^2 in size or when pulsed ultrasound is used.

The best coupling medium to use with the moving transducer is a gel as this remains on the skin better than does a lotion or oil. The stationary transducer demands a gel.

The underwater technique is used when the surface is uneven such as hands, wrists, feet and ankles or when transducer pressure cannot be tolerated. In this method the water is

the coupling medium, and the water temperature should be no more than 80° F.

A whirlpool (with the turbine off) or a container large enough to completely immerse the part and transducer may be used. In this technique, the transducer should never touch the skin but should be held approximately one-half inch from the skin. Air bubbles that appear on the skin or transducer should be removed.

Either the moving or stationary transducer may be used, but the stationary transducer technique is difficult. When using either method, the choice of continuous or pulsed ultrasound depends on the size of the transducer.

Duration and Intensity

The duration of the treatment will vary according to the area of the part being treated and the intensity being used. If the surface is large, it should be divided into areas approximately 4 x 4 inches if using a 7 to 13 cm^2 moving transducer, and each area should be treated for five minutes. With a 50 cm^2 transducer, each part may be 8 x 8 inches. With the stationary transducer, the area will be the same size as the transducer.

The therapeutic intensity range will usually be from .5 to 3. watts/cm^2. In most cases 1. watt/cm^2 is sufficient. Some manufacturers use total watts. Be sure to read the correct meter scale.

Dangers

The dangers of using ultrasound are few if the trainer has a prescription for treatment from a physician, is aware of the contraindications and not only knows how to do the techniques, but also knows why certain procedures must be followed.

Periosteal pain due to reasons previously stated and a burning sensation are probably the most common patient complaints. If these symptoms cannot be relieved by adding more coupling medium and/or reducing intensity, then treatment should be terminated immediately. Never cause pain when treating with ultrasound.

Summary

Ultrasound is a very effective modality for the treatment of athletic injuries. Although the unit is very simple to use, it should never be used for self-administered treatment by the athlete. It should be used only by a qualified person who is well-versed in its operation and limitations.

BIBLIOGRAPHY

1. Downer, Ann H.: *Physical Therapy Procedures - Selected Techniques.* 2nd ed. Charles C. Thomas, Springfield, 1974.

2. Lehman, Justus F. : Diathermy. In Krusen, Frank H. (Ed.) :- *Handbook of Physical Medicine and Rehabilitation.* 2nd ed. Saunders, Philadelphia, pp. 273-345, 1971.

3. Novich, Max M., M.D., Taylor, Buddy, B.S., M.S.: *Training and Conditioning of Athletes.* Lea & Febiger, Philadelphia, 1970.

4. Shriber, William J., M.A., M.D. : *A Manual of Electrotherapy.* 4th ed. Lea & Febiger, Philadelphia, 1975.

5. Sumner, W., Patrick, Margaret K.: *Ultrasonic Therapy.* Elsevier, London, 1964.

6. *Ultrasound.* 4th ed. The Burdick Corporation. Milton, Wisconsin, 1973.

For jock itch and athlete's foot

Tinactin Cream

- Begins to relieve itching, burning within 24 hours
- Actually kills most skin ringworm fungi

Tinactin®

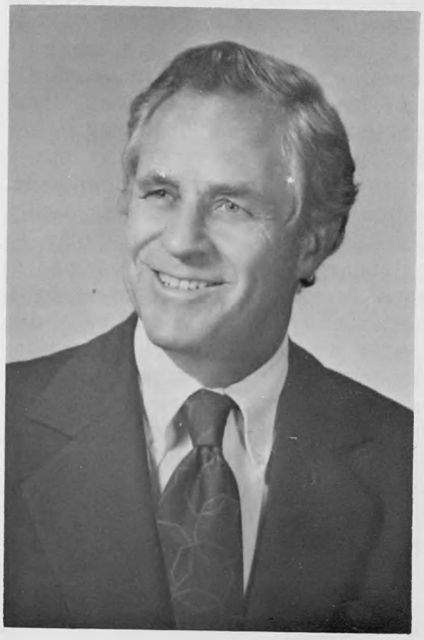
brand of tolnaftate, U.S.P., 1%

Professionally preferred

Also available in Powder and Powder Aerosol to help prevent athlete's foot reinfection.

Schering

The 1975 Schering Symposium on Musculotendinous Injuries:



Injuries of the Extensor Mechanism of the Knee

by
F. JAMES FUNK, JR., M.D.
Atlanta, Ga.

The knee is the largest, most complex, and most vulnerable joint in the body. Its stability and function is totally dependent on the quadriceps complex which with its origin, sesamoid, and complex insertion comprises the extensor mechanism of the knee. Above it arises with the rectus femoris origin from the pelvis just above the hip joint and is joined below by the two vasti muscles and finally deep from the front and vastus intermedius muscle. These latter three completely ensheath and take origin from the femur and thus are intimately associated with it. Its insertion is complex first into the patella through the central tendon as well as through the complex retinaculum on each side. It finally inserts through the patellar tendon directly into the tibia by way of the tibial tubercle.

Most discussions of injuries of the extensor mechanism stress the complex aspects of fracture of the patella. In this brief paper emphasis instead will be made on the musculotendinous injuries omitting the problems of patellar fracture.

Pelvis Avulsions

Most avulsions of the pelvis origin are problems of the adolescent since the muscles by and large are stronger than the rapidly growing apophyses and epiphyses from which they may take origin. Pull-off fractures can occur about the iliac crest and often result in large displaced fragments. The commonest flexor injury is pull-off of the anterior end of the iliac apophysis and this often occurs as a combination pull-off of the tensor and sartorius and at times a portion of the rectus as well. Such injuries can be quite serious, very painful, and result in a marked disability. When a fragment is large and the muscle mass obviously displaced surgical replacement may be of benefit, but in the less severe case as a rule they can be safely ignored. When the mass is very large, however, it will heal with a noticeable bony prominence. (Figure 1).

At times when the history is vague such bony avulsions can be misinterpreted and confused with myositis ossifications or even neoplasms. If bony biopsy is done masses of rapidly growing bone will be seen on microscopic section, which can be confused with the microscopic picture of primary tumors.

In at least one such instance we have seen x-ray therapy administered following such an erroneous microscopic diagnosis.

Rupture of the quadriceps muscle itself can occur in the adolescent or in

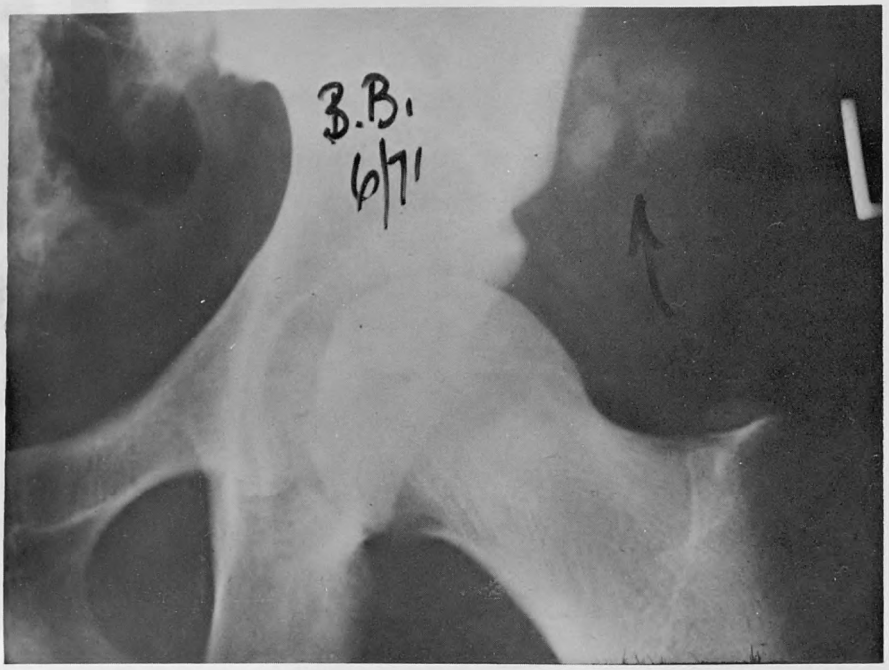


FIGURE 1 - Flexion avulsion fracture in a 12-year old boy. This was so large that surgical replacement was performed and as a result this is a minimal bony deformity and he has excellent function. Smaller pull-off avulsions can often be safely ignored.

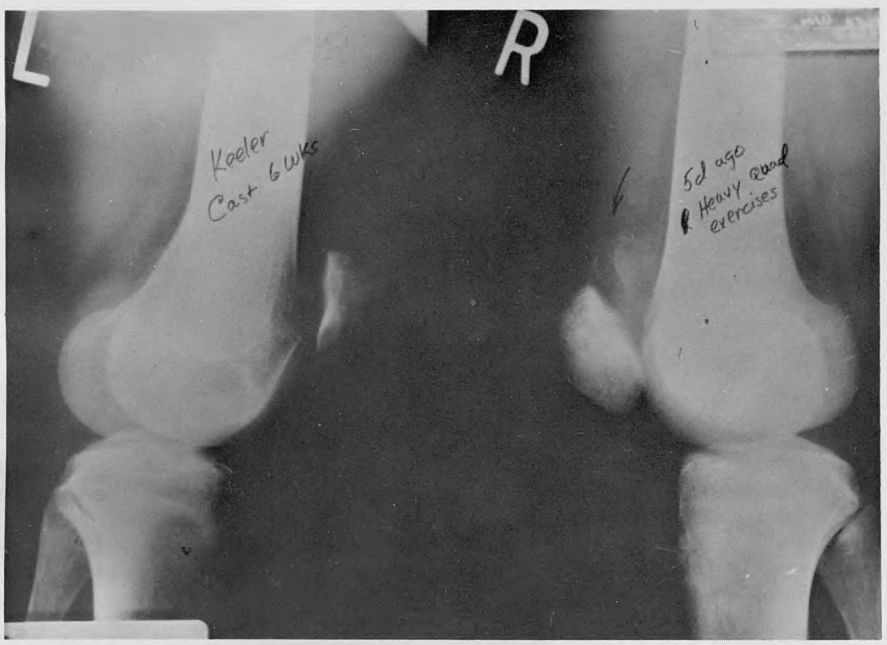


FIGURE 2- Pull-off fracture in a 16-year old high school athlete who was doing resistant squatting exercises to strengthen his quadriceps after a period of 6 weeks immobilization in a cast.

the mature athlete. This is usually a problem involving the rectus femoris which can either pull-off its pelvic origin or else rupture near its musculotendinous insertion. Where there is a major avulsion of the rectus this can result in a significant weakness and at times a painful disability. At times this can be particularly true in kickers who can pull off a portion of the rectus muscle if cleats are hung in the process of place kicking a football. At times significant tears of the rectus femoris can occur in mature football players in which the body of the muscle itself is pulled free from the upper end. The diagnosis is made by the finding of painful swelling, accompanied by a palpable defect usually in the upper anterior thigh. Minor tears in the body of the muscle can be safely ignored and rarely cause any functional impairment but complete ruptures of the rectus or the rectus origin in the active athlete deserve surgical repair. If the injury is an old one, one usually finds the contracted muscle pulled downward lying like a bulky sausage and bathed in a bursal-like fluid. Surgical treatment is to stretch it out and reattach it as close as possible to its original origin with additional attachment to the two vasti muscles.

Quadriceps Rupture

The commonest area for rupture of the quadriceps is at its point of insertion into the upper pole of the patella. This is probably more common in the older non-athlete than it is in the active athlete but it can occur both as a result of sudden muscular contraction or any violent fall or rarely during weight conditioning exercises in a muscle that has been rendered weak from inactivity or immobilization. (Figure 2). The diagnosis is usually easily made by the finding of a depression above the patella which is easily palpated and complete inability to extend the knee. The treatment is early surgical repair followed by a period of total immobilization and a longer period of partial protection. Associated with rupture of the quadriceps muscle one often finds lateral tears of the knee retinaculum and all of these must be meticulously repaired at the time. The results following protection and rehabilitation should be excellent.

Myositis Ossificans

Myositis ossifications can be found in several locations in the body where a muscle is intimately associated with a bone. The three areas in which it is most commonly seen is the front and back of the arm and the anterior thigh. By far the commonest location is in the thigh, particularly in the vastus intermedius muscle. This injury, long known as a "charley horse", is really myositis ossifications forming as the result of a severe muscle contusion. The one essential ingredient appears to be hemorrhage of the muscle under pressure, directly connected to the periostium of the bone. Clinically, it is characterized by rapid, severe, painful swelling usually associated with significant induration over a large area of the front of the thigh. Early on the only findings will be a tightly swollen painful thigh and x-ray at this stage is usually negative. Typically muscle function progressively decreases, induration

increases, and in 2-4 weeks the x-ray changes of first calcium deposition and finally true bone formation in the muscle become more evident. This goes through a picture of further maturing and finally as the mass becomes more discrete it shrinks and muscle function returns. As a rule this requires 2-4 months. The initial treatment is pressure and the application of cold but the definitive treatment is to apply pressure and to encourage but not force gentle persistent efforts at restoring muscle function. Vigorous massage or muscle stretching commonly causes exacerbation of the symptoms. Aspiration in most hands is unrewarding. The return of good function with time is the rule though in certain instances when a massive amount of bone is obtained late surgical excision may be indicated. (Figure 3).

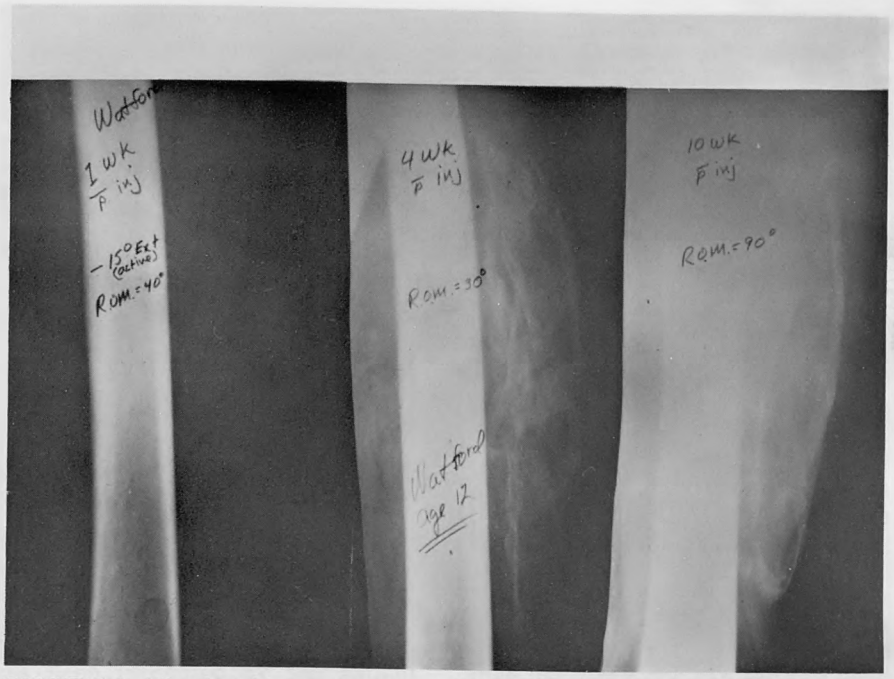


FIGURE 3 - The development of myositis ossifications in an adolescent. (Left to Right)

A. The femur after 1 week. Total knee motion is 40 degrees.

B. Early ossification 4 weeks after injury. Total knee motion is 30 degrees.

C. 10 weeks after injury. The myositis outlines are now more discrete, more dense, and somewhat smaller. Total range of knee motion is 90 degrees.

Patellar Dislocation/Subluxation

Patellar dislocation and subluxation though seen occasionally in the male athlete are more common in the female. Etiologically this is thought to be due to the tendency of the patella to slip laterally with muscle contraction when genu valgum is present, a condition much more common in girls than in boys. Despite this, however, after direct trauma or severe knee sprains dislocation or subluxation of the patella can occur in the best conditioned athlete. Dislocation is characterized by lateral displacement of the patella when the knee is bent. By the time most trainers or physicians see the injured athlete someone has straightened the knee, which usually results in relocation of the patella. In such instances the findings are usually that of a markedly swollen blood-filled knee, moderately severe pain, and local tenderness over the upper medial aspect of the patella at the point of insertion of the vastus medialis fibers into the patella. These fibers are almost always torn or badly stretched with lateral patellar displacement. As a rule x-rays are negative except for swelling but at times the dislocation will result in small articular fragments being broken off from the patella or the lateral femoral condyle and these may be visible within the joint. The treatment as a rule following the initial patellar dislocation is conservative with immobilization to allow time for the quadriceps to heal and gradual rehabilitation followed by quadriceps exercises. Resubluxation or redislocation is seen with enough frequency that some have recommended quadriceps retinaculum repair on all initial dislocations but this is rarely practiced since dislocations may never again recur.

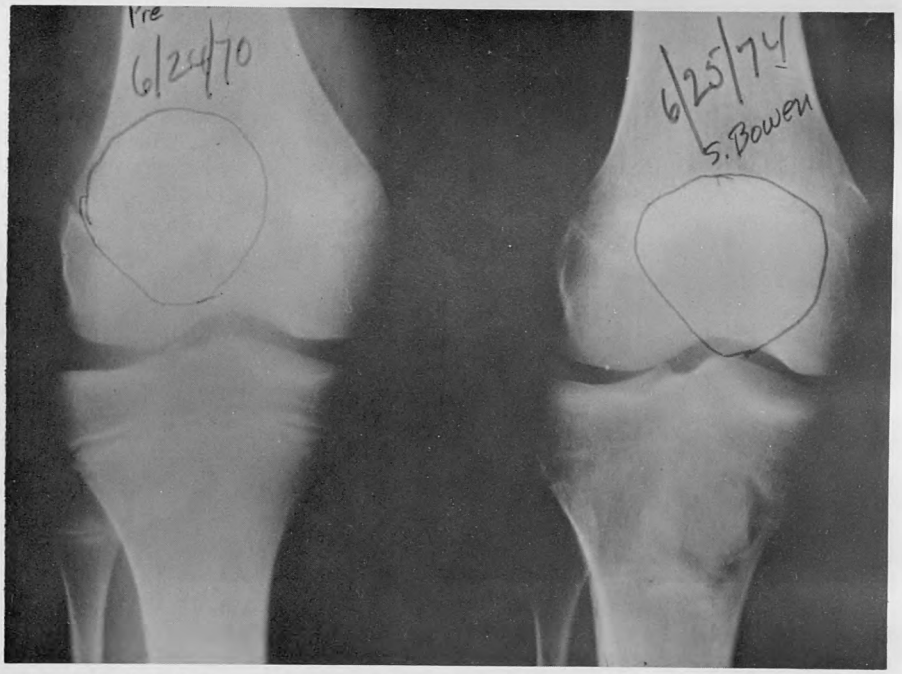


FIGURE 4 - Pre-operative and post-operative patellar location following Hauser procedure. The patella is moved medially and very slightly distally. Resulting function is excellent.

Patellar subluxations are a problem fairly common in women and perhaps the greatest cause for knee "giving way" in the female athlete. Many medial menisci have been removed as the result of misdiagnosis of a patellar subluxation. Clinically the complaints are of a weak knee with subpatellar pain

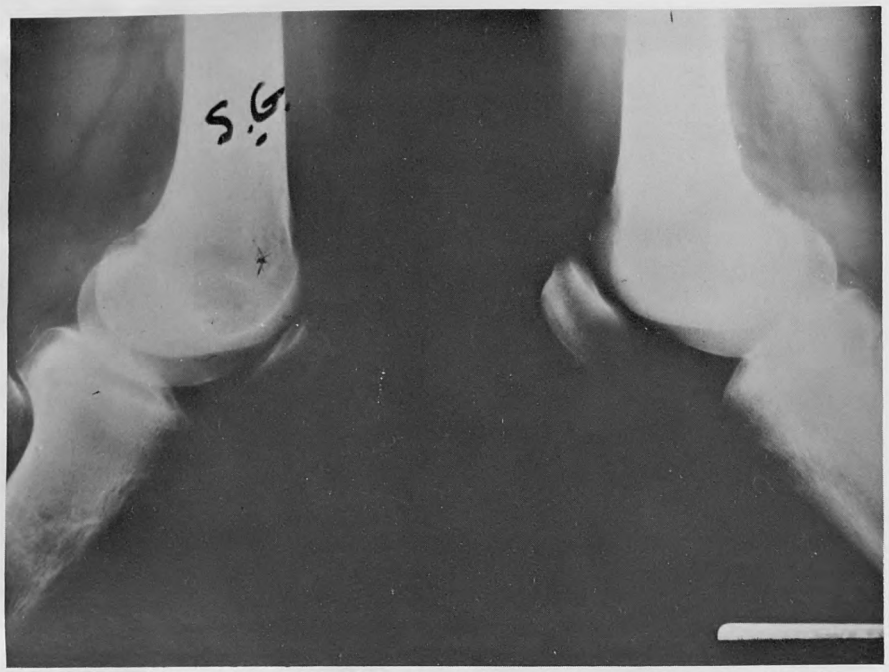


FIGURE 5 - The left knee has had a Hauser procedure with too far distal transfer of the patellar tendon. The result is that the patella is close to the tibia and knee function is impaired and painful. This is a common error in performing this operation.

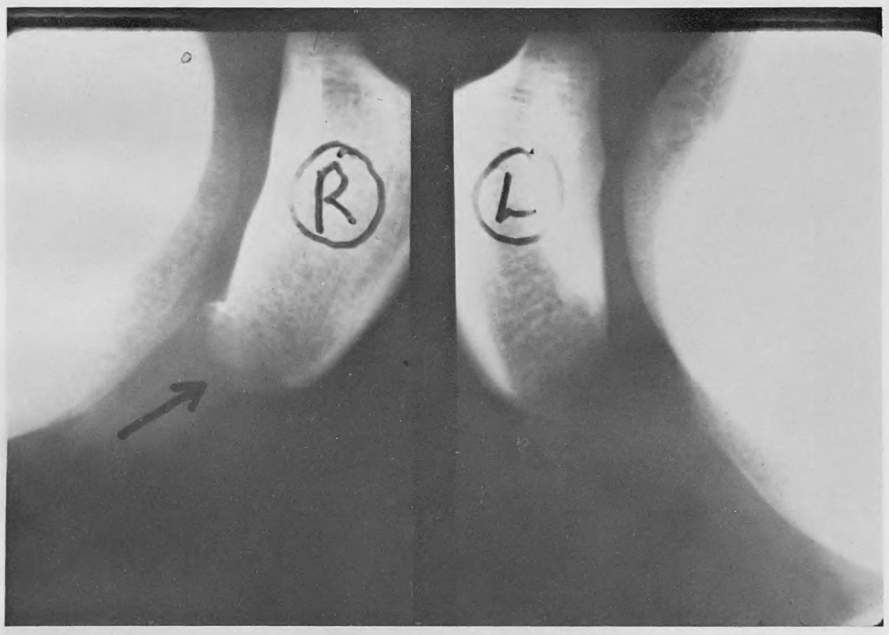


FIGURE 6 - Right patella shows a small spur at the inferior tip. The arrow indicates a small cystic lesion which proved to be an area of local granulation at the time of surgery.

aggravated by grinding the patella against the femoral condyles reproducing the pain. Most persons subject to patellar subluxation will profess acute apprehension if the examiner presses the patella laterally in the extended knee. This one test is probably the most significant diagnostic feature. Other features, however, may be high-riding patellae with elongated patellar tendons, loose or valgus knees, or the finding of hypoplasia of the lateral femoral condyle.

The treatment in the recurrent dislocater or subluxater is surgical repair with realignment of the quadriceps mechanism. Some surgeons advocate doing this by reefing or shortening the medial capsule and distally advancing the vastus medialis to pull the patella more medially. Others have advocated merely releasing the lateral retinaculum when mild subluxation is the problem. Probably still the best single procedure, when properly done, is the Hauser procedure transferring the patellar tendon insertion medially by either moving a block of bone or a chip of bone including the patellar tendon, stapling it in a more medial position. This operation has been roundly criticized in many areas but the basis for such criticism is usually poor performance of the operation with over-ambitious distal transplantation of the patellar tendon. Properly done it is still an excellent operation to stabilize the patella against lateral dislocation. (Figure 4 and 5).

The author prefers the more classic procedure in which the bone block is transferred to a new location and countersunk in such a fashion that it cannot be pulled free. No internal fixation is used and the only additional soft tissue work consists of release of the lateral retinaculum. The medial muscle insertion is not disturbed. With this technique it is possible to use only a soft knee splint for a few days and then begin early active motion without the use of a plaster cast.

Accessory Patella

Accessory patella is a common abnormality that is usually productive of no symptoms at all. It consists of a separate ossification center with the upper outer pole of the patella which is connected with the main body of the patella by a firm fibrous union and as such functions quite well. At times, however, following trauma this accessory patellar fragment can become painful. If it persists the disability can be severe enough to require excision of this fragment. This is rarely necessary. The chief problem is that it is commonly confused with fractures of the patella and treated with prolonged immobilization or surgery. Clinically it is usually bilateral and not associated with any symptoms unless severe traumatized.

Jumper's Knee

Jumper's knee is the name that has been applied to tendonitis of the patellar tendon at its origin from the inferior pole of the patella. This is a painful disability that is most commonly seen in basketball players and track athletes whose activities require repetive jumping. It is characterized by a small area of point tenderness usually about the middle of the patellar tendon directly at its

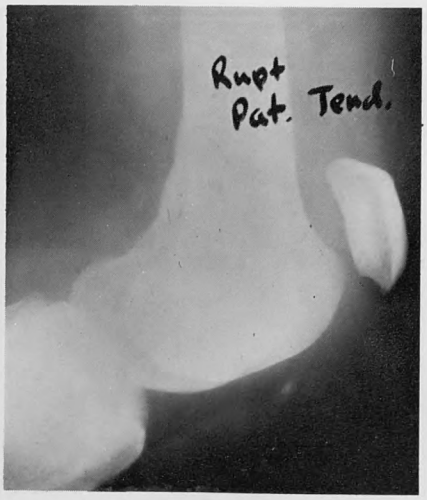


FIGURE 7 - Patellar tendon has been avulsed from the inferior pole of the patella. The patella has been pulled upward by the quadriceps muscle.

FIGURE 8 - Avulsion of the tibial spine. The patella is displaced upward. A bony fragment has been pulled up from the upper tibial epiphysis by the patellar tendon.

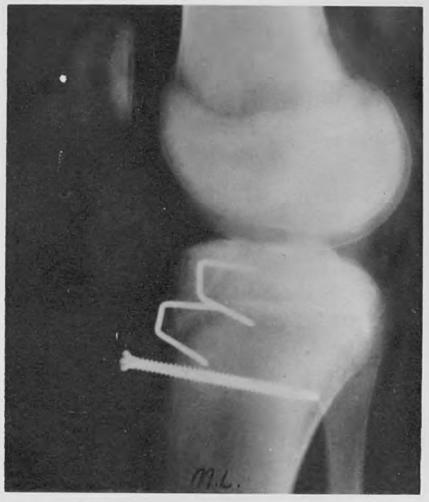


FIGURE 9 - Bony mass is now effectively stabilized with 2 staples and a screw. The knee is straight and the patella is in its normal relationship to the knee joint.

point of orgin from the patella. The pain can commonly be completely but temporarily abolished by the injection of a small amount of local anesthetic. When combined with cortisone the effects may last much longer. The danger is that repeated injections frequently cause degeneration and often lead to rupture or avulsion of the patellar tendon from the patella. This eventuality rarely occurs unless repeated injections have taken place. This painful problem usually subsides with inactivity but may become of such severity and duration as to require surgery. X-ray findings may consist of a small spur or more commonly a very small cystic cavity at the inferior tip of the patella. The surgical treatment consists of exploration of this localized area under local anethesia and when the precise point of maximum tenderness has been identified by the patient more local anesthetic can be administered to the specific area and curettage of the patella at this point performed. Usually one finds a small amount of inflammatory tissue which, when removed, relieves the symptoms, often permanently. (Figure 6).

Patellar Tendon Rupture

When the patellar tendon ruptures it rarely occurs in the middle of the tendon but almost invariable is a pull-off of the fibers from the inferior pole of the patella. It is more common in the young. It is almost always unilateral. In the patient who demonstrates a high riding patella with complete inability to extend the knee tenderness is invariably found at the lower pole of the patella and a palpable gap can usually be felt. Though rupture not infrequently follows repeated injudicious steroid injection it can also occur in the previously undamaged knee with sudden violent contraction of the quadriceps, often accompanied by a direct blow on the lower pole of the patella. The treatment is early sugical repair with suture of the torn tnedon to the freshened lower pole of the patella, firmly anchored by means of heavy sutures through drill holes. At times in a poorly controlled patient or in one in whome the injury has been neglected and the quadriceps muscle thereby contracted it may be necessary to anchor the patella down firmly while healing takes place. The one technique that accomplishes this in effective fashion is to place a heavy Steinmann pin across the tibia and utilize a wire loop above the patella to hold the patella down, anchoring the wire below on each side to the Steinmann pin. In this manner it is possible to prevent the quadriceps from pulling off the tendon before healing is complete. Even so, 8 weeks of plaster immobilization is usually needed.

Tibial Tubercle Avulsion

The final musculotendinous injury of the quadriceps mechanism is the avulsion of the patellar tendon insertion in the adolescent athlete. The tibial tubercle, which is part of the proximal tibial epiphysis may be pulled loose from its cartilagenous connection to the tibia in the young teenager as a result of violent athletic activity or falls. Clinically this results in upward displacement of the patella and inability to stand or extend the knee. By x-ray one can see the bony mass pulled free from the tibia lying in front of the knee joint. This may be either large or small depending on the amount of tibial epiphysis displaced. The treatment is surgical reattachment of the bony mass which can be most easily accomplished either with screws or a staple. When healing is complete the functional result should be excellent. This is an injury almost entirely confined to adolescents and avulsion of the tibial spine is almost unknown in adults. (Figure 7 and 8).

In summary, the powerful quadriceps muscle, probably the most powerful muscle group in the body, is subject to injuries throughout its length. Most of these are the result of external trauma whether direct or indirect. Many injuries, however, occur as a result of sudden muscle contraction of this powerful muscle, pulling it free from its origin or insertion, or resulting in tears in the substance itself. The location of the quadriceps often makes accurate diagnosis possible by physical by physical examination. frequently the position of the patella, whether up, down or laterally displacement or muscle fragment avulsion can likewise be helpful but it is important to remember that early x-rays often fail to reveal the extent of the muscle pull-off in the pelvis or ossification in an area that will later demonstrate extensive myositis ossificans. Active athletic participation in most sports is dependent on a strong and stable knee which in turn requires a healthy, strong, and pain-free extensor mechanism.

F. James Funk, Jr., M.D. •

NATIONAL ATHLETIC TRAINERS' ASSOCIATION BOARD OF DIRECTORS MEETING

JUNE 5—10, 1975 DISNEYLAND MOTEL, ANAHEIM, CALIFORNIA

The first session of The Board of Directors was called to order at 6:30 o'clock p.m. by Mr. Frank George, President. The following were in attendance:

District 1	Wesley Jordan
District 2	Richard Malacrea
District 3	Herman Bunch
District 4	Robert White
District 5	William Flentje
District 6	Eddie Lane
District 7	Warren Lee
District 8	Lewis C. Crowl
District 9	Eugene Smith
District 10	Richard Melhart
President	Frank George
Executive Director	Otho Davis

I. The meeting was opened with a prayer by Mr. George.
II. The Treasurer's Report was presented to the Board of Directors.

A motion was made by Mr. Lane and seconded by Mr. Smith to accept the report.
ACTION: Approved
III. There was discussion on the 1973 Winter Board of Directors meeting with action regarding The Professional Education Committee report in reference to the now Procedure No. 3 in the Procedures for Certification.

A motion was made by Mr. White and seconded by Mr. Crowl to retain Section 3 of The Procedure for Certification.
ACTION: Approved
IV. The Audio-Visual Aids Committee budget request for $500.00 covering 1975-76 was discussed.

A motion was made by Mr. Lane and seconded by Mr. Flentje to approve the request.
ACTION: Approved
V. It was reported by Mr. Gordon Stoddard, Chairman of the Audio-Visual Aids Committee that his committee has accomplished very little this past year primarily because of an uninvolved committee membership. Two of the committee members have relocated in places of employment and another had never really been involved and has not attended the last three national conventions. It was requested by Chairman Stoddard that the Board in an attempt to localize the Audio-Visual Aids Committee for greater productivity and effectiveness, add the names of John Strief, University of Iowa; Lynn Wallace, Rainbow Sports Medicine Clinic in Cleveland, Ohio; a certified female athletic trainer to be named; and to delete Larry Standifer from the A.V. Committee.

A motion was made by Mr. Lane and seconded by Mr. Flentje to accept the above request.
ACTION: Approved

VI. Following discussion, a motion was made by Mr. Lane and seconded by Mr. Flentje to accept The Drug Education committee report as submitted by Chairman John Wells.
ACTION: Approved
VII. The Semi-Annual Report of the Committee on Grants and Scholarships, submitted by Chairman W.E. "Pinky" Newell was discussed. It was reported that in June 1974 the Robert H. Gunn Scholarship Award was established by the Board. Copies of the application for the award were sent to each of the approved athletic training curriculum schools. It was also reported that the Association Endowment Fund has received its start with a donation of $500.00 from Otho Davis.
VIII. The Committee on Grants and Scholarships recommendation that there be (1) a mail solicitation of the medical profession and (2) there be a mail solicitation of foundations and other organizations for major contributions was discussed.

A motion was made by Mr. Crowl and seconded by Mr. Lee to accept the above recommendations.
ACTION: Approved
IX. The Committee on Grants and Scholarships budget request for $2150.00, including three $500.00 scholarships was discussed.

A motion was made by Mr. Flentje and seconded by Mr. Bunch to accept the above request.
ACTION: Approved
X. Following discussion, a motion was made by Mr. Crowl and seconded by Mr. Lane to eliminate the "need clause" in item number six (6) under "criteria" for the Robert Gunn Scholarship.
ACTION: Approved
XI. Mr. Rod Compton, Editor-in-Chief and Journal Committee Chairman and Mr. Clint Thompson, Editor of *Athletic Training, Journal of the National Athletic Trainers Association* appeared before the Board to present the Journal Committee report.
XII. There was a request to increase the rate sheet for advertisers 10%, (ten percent).

A motion was made by Mr. White and seconded by Mr. Lane to accept the above request.
ACTION: Approved
XIII. There was a request to appoint district advertising consultants to send leads and advertising consultation to Eastern Associates.

A motion was made by Mr. Crowl and seconded by Mr. Flentje to accept the above request.
ACTION: Approved
XIV. The Journal Committee budget request for $11,280.00 was discussed.

A motion was made by Mr. Jordan and seconded by Mr. Malacrea to accept the above budget request provided it is needed by the Journal Committee and not met by advertising.
ACTION: Approved
XV. There was a motion by Mr. White and a seconded by Mr. Bunch that the Board of Directors give Mr. Compton, Mr. Thompson and The Journal Committee members a "Thank You" and a vote of confidence for a wonderful job in connection with *Athletic Training.*
ACTION: Approved

XVII. Mr. Bill Chambers and Mr. Fred Hoover appeared before the Board to discuss the 1975 convention and future convention sites.

Following a lengthy discussion on convention sites because of natural economics, a motion was made by Mr. Malacrea and seconded by Mr. Jordan to have the convention sites in Boston for 1976, Detroit for 1977, St. Louis for 1978, Las Vegas for 1979 and then re-evaluate after that.
ACTION: Approved — Yes - Districts 1, 2, 4, 5, 6, 7 and 8; No - Districts 3, 9 and 10.

XVII. The History and Archives Committee budget request for $2,709.00 to publish 1,000 copies of the NATA history was discussed.

A motion was made by Mr. Flentje and seconded by Mr. Lane to approve $2,709.00 to publish the NATA history and re-sell to interested persons.
ACTION: Approved

XIX. The Honor Awards Committee report was discussed and a motion was made by Mr. Crowl and seconded to accept as follows:

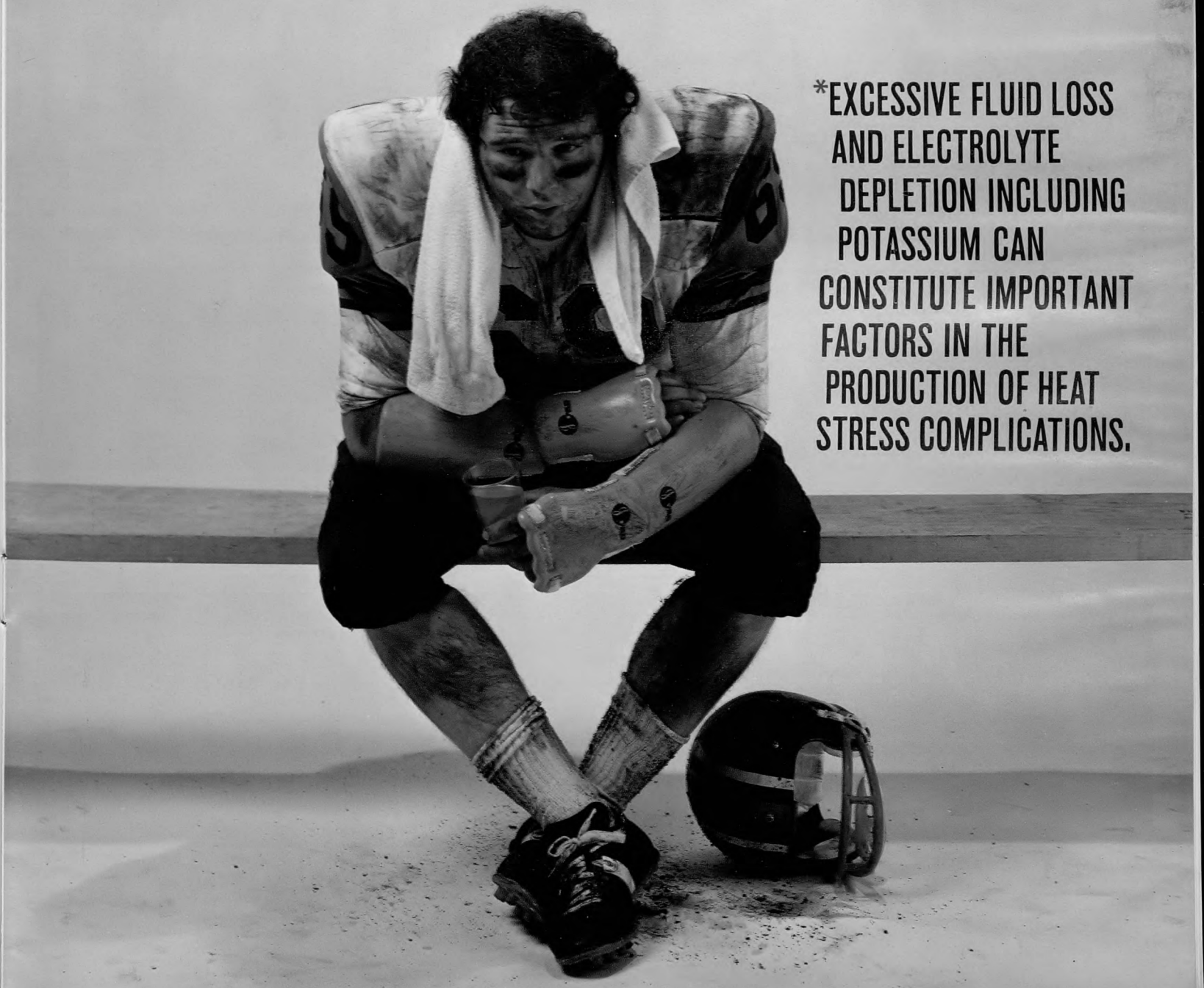
A. Citizens Savings Hall of Fame:
- Robert H. Gunn
- C. Rodney Kimball
- Edward A. Sulkowski
- Charles W. Turner

B. Honorary Membership
- Mr. Frank Howard
- Dr. David G. Moyer
- Mr. W.R. "Bill" Schroeder
- Dr. Robert J. Kerlan

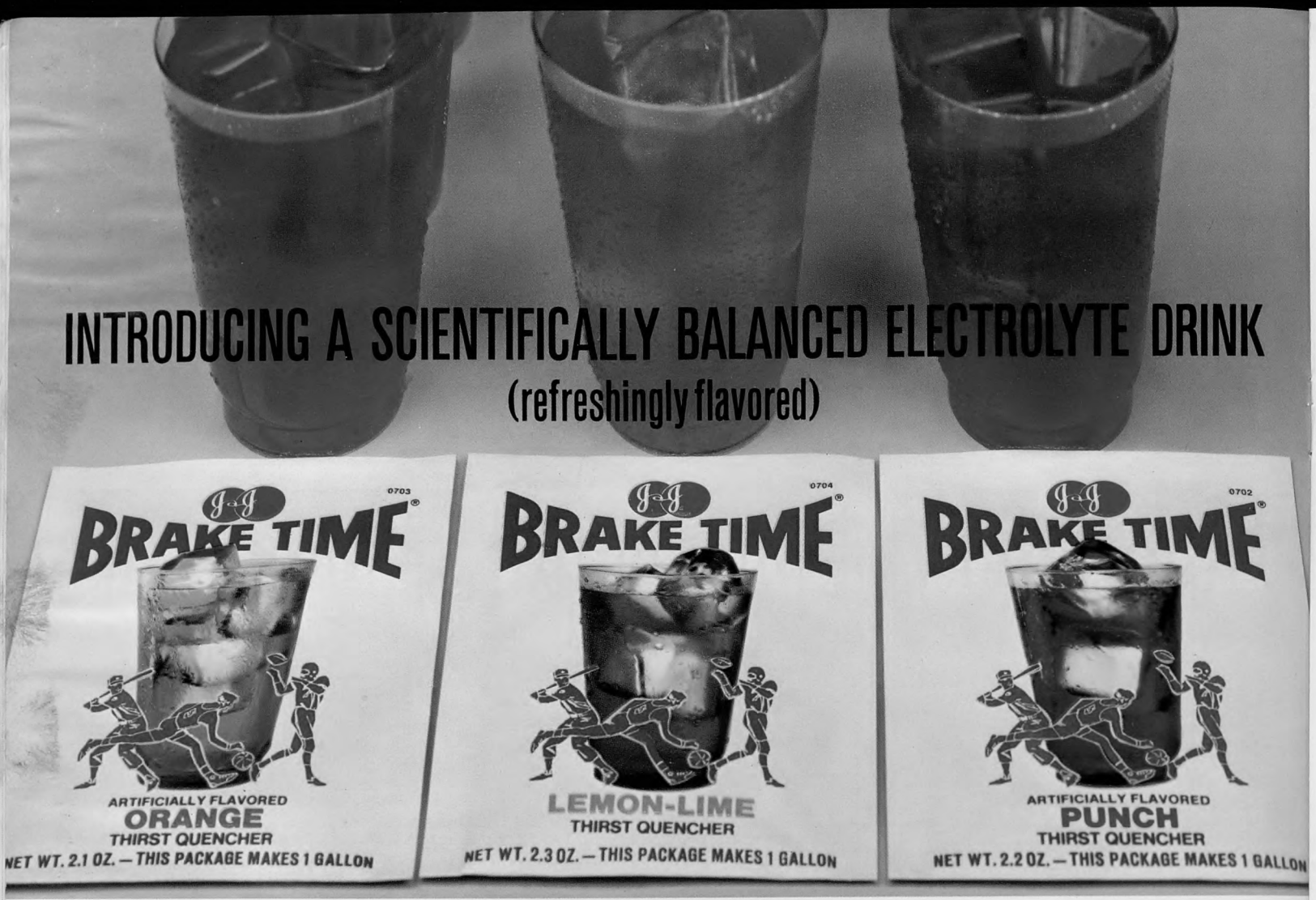
C. Twenty-Five year Awards
- Joseph R. Altott
- William Black
- Prosper F. Cima, Jr.
- Kurt Grimm
- Robert Hand
- John E. Lacey
- Bruce Melin
- Edwards Pillings
- John D. "Jack" Rockwell
- Paul J. Schneider
- Frank Semanick
- George F. Sullivan
- Raymond B. Ulinski

XX. President George presented the names as selected by The United States Olympic Committee for The Pan American Games. They are as follows:
- Bob Lane - Head Trainer
- Chuck Demers
- Victor Recine

THIS ATHLETE COULD BE IN DANGER* ...UNLESS HIS BODY FLUIDS ARE REPLENISHED!



*EXCESSIVE FLUID LOSS AND ELECTROLYTE DEPLETION INCLUDING POTASSIUM CAN CONSTITUTE IMPORTANT FACTORS IN THE PRODUCTION OF HEAT STRESS COMPLICATIONS.



WHAT IS BRAKE TIME®?

An IDEALLY BALANCED electrolyte drink – deliciously flavored to provide:

- Optimized concentrations of salt electrolytes – similar to ranges found in sweat.
- A hypotonic solution with low sugar levels to facilitate faster body fluid replacement.
- A balanced replacement level of potassium to help replenish losses in body potassium during exercise.

WHY SHOULD BRAKE TIME® BE USED?

Excessive fluid loss and electrolyte depletion during vigorous exercise constitutes important factors in the production of heat stress complications. The best preventive is acclimatization. Intake of fluids containing adequate amounts of electrolytes, including potassium, is also recommended. BRAKE TIME is a scientifically formulated drink containing balanced quantities of important electrolytes.

WHEN SHOULD BRAKE TIME® BE USED?

Before, during, and after pronounced physical activity—"BRAKE TIME—ANY TIME!"

Available from your athletic goods distributor.

BRAKE TIME THIRST QUENCHER			
Code	**Flavor**	**Size**	**Case Pack**
0702	Punch	1 Gal.	25 ea.
0703	Orange	1 Gal.	25 ea.
0704	Lemon-Lime	1 Gal.	25 ea.
0705	Punch	5 Gal.	5 ea.
0706	Orange	5 Gal.	5 ea.
0707	Lemon-Lime	5 Gal.	5 ea.

Contact your J&J Athletic Division salesman for further details.

J&J Johnson & Johnson
ATHLETIC DIVISION
NEW BRUNSWICK, NEW JERSEY 08903

 AD-157

CURRENT LITERATURE

by
ED CHRISTMAN, A.T.,C.

"A Football Conditioning Program," Jones, J. *Athletic Journal*, 1719 Howard Street, Evanston, Illinois 60202. 55:68, April, 1975.

"Athlete's Foot - Scratching Beneath Surface of Fungal Ailments," Millikan, L. *The Physician and Sportsmedicine*, 4015 West 65th st., Minneapolis, Minnesota 55435. 3:51, April, 1975.

"Care and Treatment of an Ankle Sprain," Schneider, S. *Woman Coach Magazine*, P.O. Box 867, Wallingford, Conn. 06492. 1:24, May 1975.

"Certain Basketball Injuries," Blazina, M. *The Physician and Sportsmedicine*, 3:68, January, 1975.

"Drug Abuse in International Athletics," Prokop, L. *The Journal of Sports Medicine*, 428 East Preston Street, Baltimore, Maryland 21202. 3:85, March-April, 1975.

"Emergency Medical Care of Athletic Injuries," Moore, R. *Emergency Product News*, P.O. Box 926, Encinitas, California 92024, 7:184, April, 1975.

"Foot Care for the Athletes," Massman, F. *Scholastic Coach*, 50 West 44th St., New York, New York 10036. 44:53, May/June, 1975.

"Fractures and Dislocations of the Shoulder and Upper Extremities," American Academy of Orthopedic Surgeons, *Emergency Product News*, 7:226, April, 1975.

"Fractures and Soft-Tissue Injuries of the PIP Joint," McCue, F., Hakala, M. Andrews, J., and Gieck, J. *Contemporary Surgery*. November 1974.

"Shin Splints in the Young Athlete: A Nonspecific Diagnosis," Jackson, D. *The Physician and Sportsmedicine*. 3:44, March, 1975.

"Should Epleptics Be Athletes?" Livingston, S. *The Physician and Sportsmedicine*. 3:67, April, 1975.

"The Case for Mandatory Mouth Protectors," Heintz, W. *The Physician and Sportsmedicine*. 3:60, April, 1975.

"The Coaches Finger," McCue, F., Andrews, J., Hakala, M. and Gieck, J. *Journal of Sports Medicine*. 2:27-275, September/October, 1974.

"Traumatic Joint Effusion and the Synovium," Schumacher, H. *The Journal of Sports Medicine*. 3:108, May-June, 1975.

"The Injured Knee," Hughston, J., Andrews, J., and Cross, M. *Journal of the Medical Association of Georgia. 362-368, September, 1974.*

"Treating Thigh Contusions with Ice," Kalenak, A. *The Physician and Sportsmedicine*. 3:65, March, 1975.

"Rapid Weight Reduction in Wrestling," Ribisl, P. *The Journal of Sports Medicine*. 3:55, March-April, 1975.

"Weight Control for High School Wrestlers," Landover, G., Johnson, G. and Hammer, R. *The Journal of Sports Medicine*. 3:88, March-April, 1975.

"When the Athletes Life is Threatened," Torg, J. *The Physician and Sportsmedicine*. 3:54, March, 1975.

"Helicopter Fracture," Ungersma, J., Mason, L., O'Keefe, M., and Walker, O. *The Journal of Sports Medicine*. 3:122, May-June, 1975.

"Injuries and the Inflammation Process," Kauth, B. *Athletic Journal*. 55:94, May, 1975.

"Legal Responsibilities in Athletic Injuries," Moss, G. *Emergency Product News*. 7:176, April 1975.

"Marathon Running and Immunity to Heart Disease," Bassler, T. *The Physician and Sportsmedicine*. 3:77, April,, 1975.

"Negative Work as a Factor in Exercise," Jones, A. *Athletic Journal*. 55:54, April, 1975.

"Orthotic Foot Control and the Overuse Syndrome," Subotnick, S. *The Physician and Sportsmedicine*. 3:75, January, 1975.

"Plyometrics What It Is - How It Works," Wilt, F. *Athletic Journal*. 55:76, May, 1975.

"Proper Shoe Fit Important for Avoiding Ankle Injuries," Medical Tribune Sports Report, *Medical Tribune*, 880 Third Avenue, New York, New York 10022. 16:23, April 23, 1975.

"Protein Supplementation and Weight Gain," Crooks, M. *Scholastic Coach*. 44:62, April, 1975.

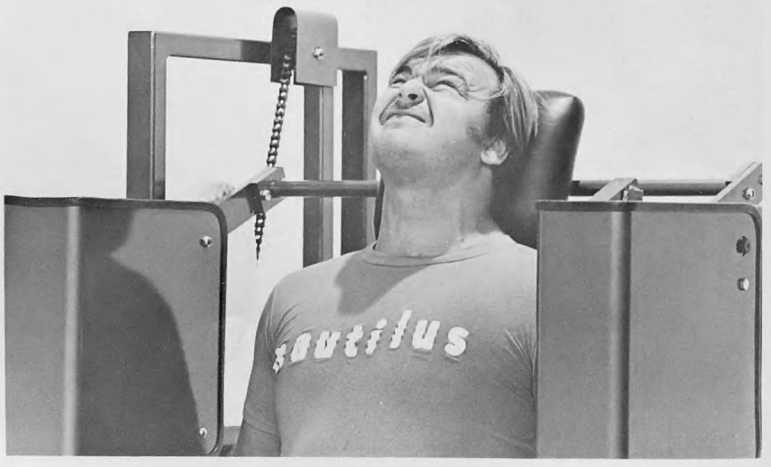
"Second Wind - Trying to Catch It in the Lab," Humphrey, N. *The Physician and Sportsmedicine*. 3:74, May, 1975. •

INCREASED NECK STRENGTH....

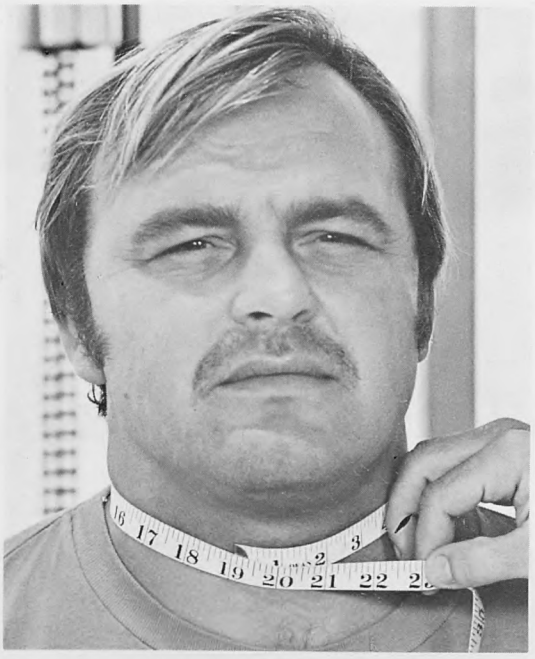
As an aid in the prevention of Sports Injuries.

Eighteen experimental subjects training only twice a week for six weeks (12 workouts) increased their neck strength an average of more than 91%; less than eight minutes per workout, a total training time of approximately ninety minutes.

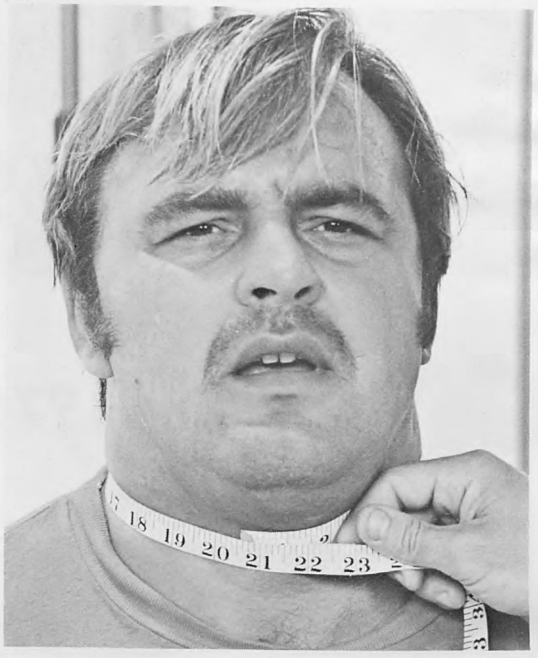
Dick Butkus demonstrates one of the two Flexion Movements of the Nautilus 4-Way Direct Neck Machine.



Dick demonstrates the Posterior Extension Movement of the Nautilus 4-Way Direct Neck Machine.

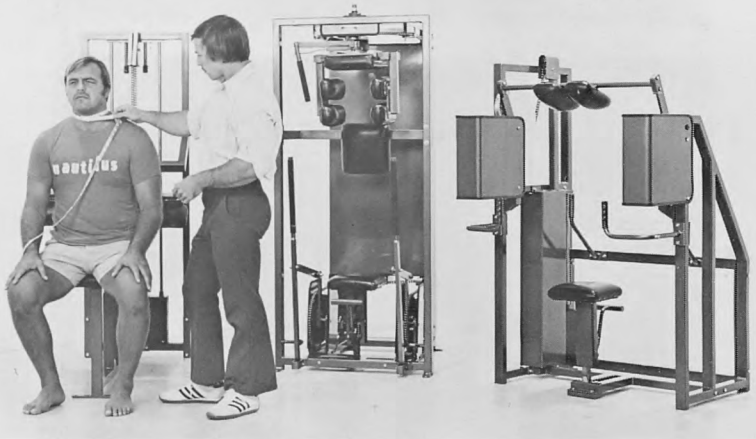


"Cold" measurement of Dick's neck immediately before a brief but hard workout on the Nautilus Neck Machines.



Less than eight minutes later, another measurement indicates an enormous increase in Dick's neck size! While temporary, such an increase clearly indicates the effectiveness of the exercises.

The enormous degree of muscular "pump" produced by such a brief workout clearly indicates the effectiveness of the new Nautilus neck machines.



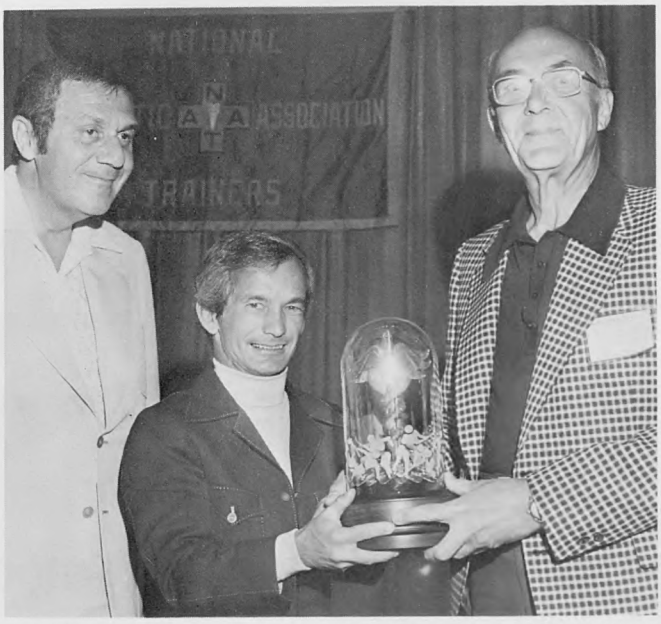
The three Nautilus Neck Machines required for such dramatic results. (left to right): Neck and Shoulder Machine, Rotary Neck Machine, and the Nautilus 4-Way Direct Neck Machine.

Nautilus | **SPORTS / MEDICAL INDUSTRIES**

P. O. BOX 1783 DELAND, FLORIDA 32720 PHONE 904 / 228-2884

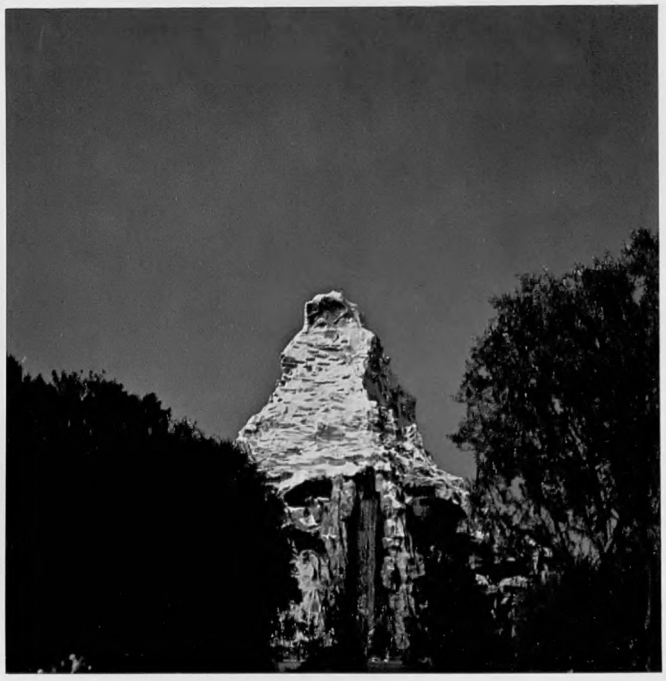
Scenes from

1975 N.A.T.A. Convention,



Dr. Thomas E. Shaffer, M.D. (right), Ohio State University, is presented the 1975 President's Challenge Scholarship Award by Mr. Bill Shoemaker as Dr. Robert K. Kerlan, M.D. looks on.

Bill Chambers 1975 Convention Chairman



Disneyland

Anaheim, California

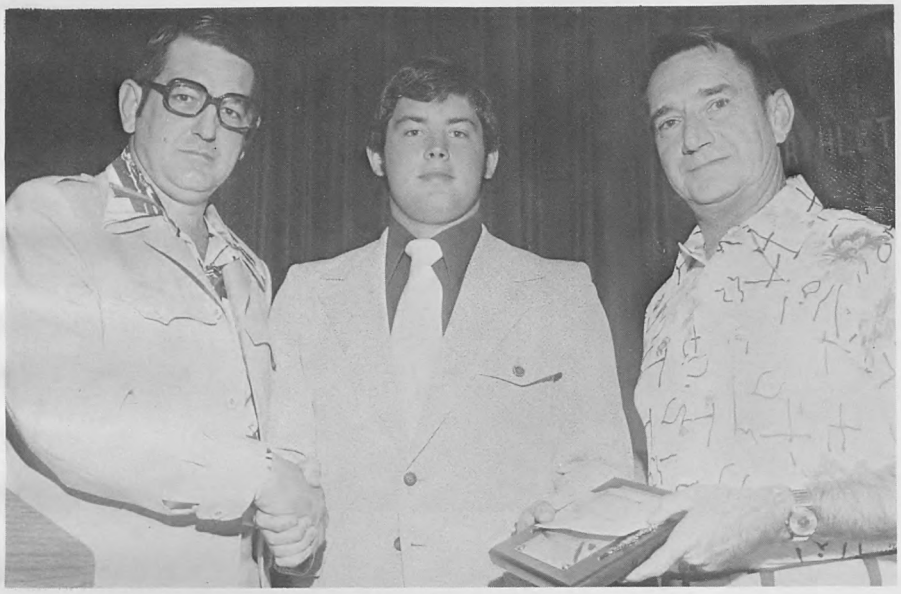
Comedian Foster Brooks entertains the NATA members at the Awards Banquet.

Lindsy McLean presents the Eddie Wojecki Award to Dennis Sealey.

William "Pinky" Newell presenting Eddie Wojecki Award to Linda Weber Daniel.

ANAHEIM '75 —

Hall Of Fame Receipants: (L-R) Bobby Gunn, Edward Sulkowski, Charles Turner (Not pictured Rodney Kimball)



Above: Otho Davis (L) and Robert Gunn presenting the 1975 Robert H. Gunn Scholarship Award to John Faulstick, Ball State University, first recipient of the award.

Hall of Fame 1975: (Back Row, L-R) Howard Waite, Jim Morriss, Wayne Rudy, E. "Ducky" Drake, Ross Moore, Dean Nesmith, Lloyd Stein, Joe Blanko, Bill Linsky, Joe Altott, Dwayne Dixon, William Newell. (Seated L-R) Laurence "Porky" Morgan, Wayne Rideout, Elmer Brown, Edward A. Sulkowski – New, 1975, Robert H. Gunn – New, 1975, Charles W. Turner – New, 1975, Henry Schmidt, Robert "Bob" Bauman.

THE N.A.T.A. CONVENTION

1975 25 Year Awards: (L-R) John D. "Jack" Rockwell, Bruce Melin, Joseph R. Altott, George Sullivan — Honor Awards Committee Chairman, Edward J. Pillings, Robert F. Hand.

Above: The 1975 Schering Symposium

1975 Shering Symposium Speakers: (L-R) F.J. Funk, M.D., Ron O'Neil, A.T.,C., J.R. Andrews, M.D., Vincent DiStefano, M.D.

THE PERFECT MATCH

a balanced presentation of technique and analysis

A New Book!

Boring

SCIENCE AND SKILLS OF WRESTLING

A balanced presentation of techniques and analysis, this unique new book provides a complete, yet easy-to-understand overview of the sport of wrestling. After opening with a foreword by James Lovell, consultant to the President on physical fitness, the book proceeds to examine wrestling through three major sections: *academic, practical,* and *scientific.* Included in the *academic section* are profiles of champion performers; coverage of administration of wrestling programs, camps, workshops, etc. Such thought-provoking topics as professionalism, motivation, and emotional readiness are also examined. The *practical skills section* analyzes a variety of techniques and maneuvers including takedowns, breakdowns, and controls. It also offers one full chapter on common mistakes and another chapter on officiating. The *scientific section* provides an unusual chapter on diet and nutrition; examines biomechanics; and closes with instructional research.

By WARREN J. BORING, H.S.D. April, 1975. 330 pages plus FMI-XIV, 7"x10", 464 illustrations. Price $11.95.

Please send me a copy of Boring, SCIENCE AND SKILLS OF WRESTLING (#0713), $11.95, to examine on 30-day approval. I understand that I may save delivery charges by enclosing payment with this order.

☐ Bill me ☐ Payment enclosed (same return privilege)

Name _____

Address _____

City _____ State _____ Zip ____

*Tentative price, subject to revision prior to publication.
30-day approval offer good only in continental U.S. and Canada.

AT-375

MOSBY
TIMES MIRROR

THE C. V. MOSBY COMPANY
11830 WESTLINE INDUSTRIAL DRIVE
ST. LOUIS, MISSOURI 63141

NOT FOR MEN ONLY

by
MARGE ALBOHM, A.T.,C.

The role of women in the area of sports participation and competition is in a current era of great change. With an increased interest occurring and with the rise of athletic opportunities being made available to women, the female participant is rapidly emerging into the arena of sport. Because of this emergence and the rapid rise in women's athletic competition, professionals in the area of sports medicine and athletics have found themselves faced with a multitude of perplexing questions and a surprisingly great lack of research dealing with women in sport to aid in the answering of these questions. The basic questions have dealt with what women can really do in sport — why and how they are different from male participants and, in fact, are they really different? And most important to our area of sports medicine the question that arises is, 'Do women have certain structural and physiological characteristics that predispose them to certain injuries, typical only to her sex, or, are men and women similar in this respect? The emphasis in research is finally including the female athlete and people are exploring these problems and questions, and concrete answers are being made available to us. It is my purpose to present some of these answers and some of the existing knowledge to you.

In considering the structural development of men and women, it is known that the growth pattern between boys and girls parallel one another until the ninth year. At this stage the female enters an adolescent growth spurt and grows taller than the male. Because the male does not begin his growth spurt until approximately fifteen years of age the female skeleton reaches a greater maturity earlier than the male. Bone ossification occurs much sooner in the female with the epiphyseal unions of bones being completely ossified at age 16 in the female and age 19 in the male. At adolescence there is a large spurt of both bone and muscle growth in the male, with a corresponding loss of fat. The female, in contrast, shows little gain in muscle or bone and a considerable gain in fat. Growth in general terminates in the female between the ages of fifteen and sixteen and the male achieves full maturation and size between the ages of 20-21. It is believed that these extra years of physical growth, under the influence of growth hormones, account for the greater size of males.

The mature male and female skeletons present some differences. The mature male skeleton is more rugged than the female. The bones are more massive and of greater density, and the long bones are longer. The joints are relatively larger and a greater articulating surface exists. The male trunk is characterized by wide shoulders and narrow hips, whereas, the female trunk exhibits a wider pelvis with fat pads over the hip region. The wider pelvis necessitates a greater inclination of the femur shaft with the neck of the femur and diminishes the efficiency of body movements in activities such as running. The knee joint, in terms of its width in proportion to height, appears to be wider in the female and more stable in relation to her size. Because of a female's shorter leg length and broader pelvis her center of gravity is lower than a males and, therefore, her balance is enhanced.

The chest, shoulder width, and thoracic cavity is larger in the male, but the female posseses a larger abdominal cavity due to her larger visceral organs and additional organs of reproduction. Men usually posses the advantage of greater strength in terms of muscle contraction because of the greater bulk of muscles and the resulting cross sectional size.

Circulatory and respiratory differences between the sexes are probably evidences of body adjustments which are necessary for the maintenance of different sized bodies. The heart weight is directly proportional to body weight, therefore the larger male heart is accounted for by his larger physical size.

Considering the respiratory system the vital capacity, which is the volume of air moved through the lungs from a maximum inspiration to a maximum expiration, bears a direct relationship to body size, surface area and height. Females, therefore, would exhibit less breathing capacity than comparable males.

The 10% additional adipose tissue that women posses as compared to men serves as an insulation to prevent excessive heat loss from internal organs. The total body sweat rate is lower in women than in men. Females do not begin sweating until the internal body heat has risen to a slightly higher degree than is the case with men. There is a lessened ability to react to unfavorable heat and humidity conditions in women than in men. This could present major problems under unfavorable environmental conditions, or heavy work done by those not acclimatized and conditioned.

Woman is definitely competent to participate in strenuous activity under all conditions in which man can participate. She is capable of severe endurance events and can reach high levels of performance through the

Marge Albohm received her B.S. degree from Valparaiso, Indiana and her M.S. degree from Indiana State University. She has published several articles concerning athletic training for women and has conducted numerous workshops in athletic training.

Ms. Albohm is the Head Athletic Trainer at Indiana University, Bloomington, Indiana and a faculty member in the Department of Health, Physical Education and Recreation.

utilization of quality training programs, designed to challenge and place overload demands on the individual body systems. Only in those events requiring great strength or explosive power are sex differences in performance more marked. Limitations to female performance appear only when the athlete seeks to compete with the male on a common ground in which areas of size, strength and speed are major factors. In some individual and non-contact sports that do not emphasize the factors of size, strength and speed, participation between males and females can occur on a very equal basis.

Woman has not come close to realizing her potential in sport nor has she been challenged to a great enough degree. She is capable of attaining great goals, and her status and stature in sport will certainly improve.

Due to the relatively slight differences in structure and physiological parameters between men and women, the mechanisms that produce certain types of injury in the male are also responsible for similar injury in the female. The types of injuries may vary and the frequency patterns may differ due to different demands placed on the individual because the sport itself requires a different movement, skill or activity. Women do not experience the number of head, neck and upper body injuries that the sport of football presents, but they do incur many lower leg contusions from contact with the ball and stick in the sport of field hockey. Since women do not compete on the rings in gymnastics they do not experience a great number of hip contusions because of the event involving the uneven parallel bars. The concept that I would like to emphasize is that an injury is an injury - an ankle sprain is an ankle sprain - regardless of whether it occurs in a man or a woman. The existing difference in injuries is due to the different sport activities that men and women are involved in and the different injuries that these sport activities present.

The somewhat slighter bone structure, smaller proportion of muscle to adipose tissue and somewhat more delicate ligamentous and tendinous structures may account for some additional injury among women, especially in sports involving explosive effort or sudden checking of speed and momentum of the body. However, the development of strength in prime muscle groups *through quality weight training* and *conditioning programs* will lessen the possibility of the occurrence of injury and will reduce the severity of those injuries that do occur. As musculature is strengthened, the strength of ligaments and tendons will develop and the joint will become more effective in performance and protection.

The reproductive organs of the female are quite well protected and when the body receives a severe blow, the force transmitted to the internal organs is much less than that experienced by the surface of the body. I have not experienced any problems which would suggest that additional protection is needed in this area. To date, we have not experienced any problems with specific injuries to the chest area either and there is no data available to suggest that there is a need to provide any additional protection for the female breast.

The body proportions of the female make her quite adept at activities involving balance, stability and flexibility, however, the broader pelvis creates a lateral sway of the body in movement and could produce poor running mechanics and may cause injury. The hips tend to have an exaggerated sideward movement and create an unnecessary sideward force. The wider pelvis also contributes to the problem of subluxation or dislocation of the patella which is more commonly seen in women than in men. Because of the pelvic width, a knock-kneed tendency occurs in women when running or standing. The line of pull of the quadricep muscle group passes to the outside of the patella rather than through its center as it usually does in men. This results in the patella drifting laterally when the quadriceps contract. All women do not experience this injury. It has been found that some individuals may be predisposed to patellar dislocation due to several factors. A patella, abnormally flattened on its undersurface increases the possibility of subluxation or dislocation. A previous knee injury, not fully rehabilitated, producing an asymetrical pull of the quadriceps could contribute the problem. If the groove that the patella slides in, which is located between the condyles of the distal end of the femur, is shallow, or if the lateral condyle is flattened, the patella has a greater tendency to slip laterally out of the groove each time the quadriceps contract.

As mentioned earlier, the closing of the epiphyseal lines, and bone ossification occurs earlier in females than in males. Because of this care should be taken in preventing stressful situations during the time of growth spurt and possibly somewhat earlier than is currently considered.

It has been frequently observed that women seem to bruise more often and more severely than men. To my knowledge this observation has not been researched and definite answers are not known. Bruising in the leg and thigh area may be more visible in women due to the lack of heavy hair growth and possibly due to a difference in skin texture.

Shin splints appear to occur more frequently in women than in men. This seemingly greater occurance of shin splints in women may be attributed to the anatomical difference in pelvic structure and femur articulation or a mechanical difference in walking patterns or weight bearing techniques caused by types of shoes worn. It is most likely due to a **great lack** of proper conditioning that is a common occurance in women's sports. Because the sweat threshold for women is higher than men, and there is a lessened ability to react to unfavorable heat and humidity conditions, more consideration should be given to effects of heat on the female participant.

Is the female athlete then, really different from her male counterpart? The answer that I would conclude based on the information available to us is basically no. Although minor differences may be presented, the structure and function of the two individuals is basically alike and should be managed in a similar fashion.

BIOLIOGRAPHY

1. Committee on the Medical Aspects of Sports of the American Medical Association. "Female Athletics" *Journal of Health, Physical and Education and Recreation.* Vol. 46, No. 1 Jan. 1975.

2. Drinkwater, Barbara L. "Aerobic power in Females" *Journal of Health, Physical Education and Recretaion.* Vol. 46, No. 1 Jan. 1975.

3. Gerber, Ellen W.; Berline, Felshin, Jan; and Wyrick, Waneen. *The American Woman In Sport.* Mass: Addison Wesley Company, 1974.

4. Klafs, Carl E., and Lyon, M. Joan. *The Female Athlete: Conditioning, Competition and Culture.* St. Louis, Mo.: C.V. Mosby Company, 1973. •

A Case Study:

Management of a Complete Hip Dislocation

by
STEVE MOORE, A.T.,C.

A rare football injury occurred during the Fall of 1973, at Tennessee Tech. The scout team quarterback suffered a complete dislocation of the left hip while practicing on our artificial turf.

The mechanics of the injury were as follows:

1. The player was attempting to roll-out to his left.
2. The defensive end and the outside linebacker were converging on him, with the end hitting him low on the front of the leg and the linebacker hitting him higher and to the left side of the leg.
3. The left leg was rotated medially, adducted and flexed at the hip joint, while the knee joint was flexed.

Therefore, the hip joint was placed in the optimal position to be dislocated when a considerable force was applied to it.

The following symptoms according to O'Donoghue (1) were observed:

1. The player was disabled at once.
2. He had severe pain in the hip area and he resisted any manipulation of the joint and limb.
3. The leg was held with the thigh internally rotated and adducted with the knee resting above and against its fellow on the opposite side.
4. The trochanter appeared quite prominent.
5. Motion of any kind from the fixed position on No. 3 causes severe pain.
6. Diagnosis was confirmed by x-rays.

The immediate management of the injury consisted of splinting the leg to the opposite one by several elastic bandages. It should be emphasized that neither a traction splint nor an inflatable full-leg splint were used since the leg could not be manipulated enough to apply them.

A scoop stretcher was placed under the victim and he was securely strapped to it in exactly the position that we found him on the field. The scoop was in turn strapped to a standard ambulance cot for the trip to the hospital.

Upon arrival at the emergency room, the team physician administered pain medication. X-rays were taken to confirm the diagnosis of a dislocated hip.

Closed reduction was accomplished under general anaesthesia in the following manner:

1. The player was in the supine position.
2. The team physician stood on the operating table straddling the affected leg.
3. The hip joint was flexed to 90 degrees.
4. The knee was flexed to 90 degrees.
5. The doctor pulled upward forcefully on the flexed lower leg by holding the gastrocnemius and at the same time he rotated the leg at the hip joint laterally. A trainer applied counter traction downward by placing his hands on the anterior superior iliac spines and pushing down as the doctor pulled up on the leg.
6. The head of the femur "popped" back into the acetabulum with a distinct "pop".

The player was admitted to the hospital for two weeks of absolute bed rest with five pounds of traction to the leg.

After the two weeks of bed rest, he was allowed to use crutches for four weeks with the stipulation that absolutely no weight was to be borne on the injured leg.

Rehabilitation of the injury was not carried out at Tennessee Tech since the player withdrew from the school at the end of the Fall Quarter and did not return.

BIBLIOGRAPHY

1 O'Donoghue, Don H., *Treatment of Injuries to Athletes*, W.B. Saunders Co., Philadelphia, 1962, pp. 413-414. •

Steve Moore has been head trainer at Tennessee Tech since June, 1968. He was previously assistant trainer at Indiana University. Secretary-Treasurer of Southeastern Athletic Trainer's Association, District 9, N.A.T.A.

A Method for Examining Knees for the Presence of Rotary Instability

by
STEVE BROWN, A.T.,C.

There is a great deal of interest among athletic trainers concerning rotary instability of the knee. It is apparent that this is becoming a very important factor in determining the total stability of the knee. This paper concerns a technique, derived from Slocum, (1) for examining a knee for the presence of rotary instability.

The first and most important consideration in describing this examination is a knowledge and understanding of the anatomy and function of the different structures involved. These structures are as follows:

A. ANTERIOR CRUCIATE LIGAMENT

ANATOMY: Attaches to the anteromedial border of the tibial spine and extends to the posteromedial border of the tibial spine and extends to the posteromedial border of the lateral femoral condyle. (see Plate 1).

FUNCTION: Limits internal rotation of the tibia on the femur by wrapping around the posterior cruciate ligament. Limits extreme external rotation of impinging on the medial portion of the lateral femoral condyle. Also limits

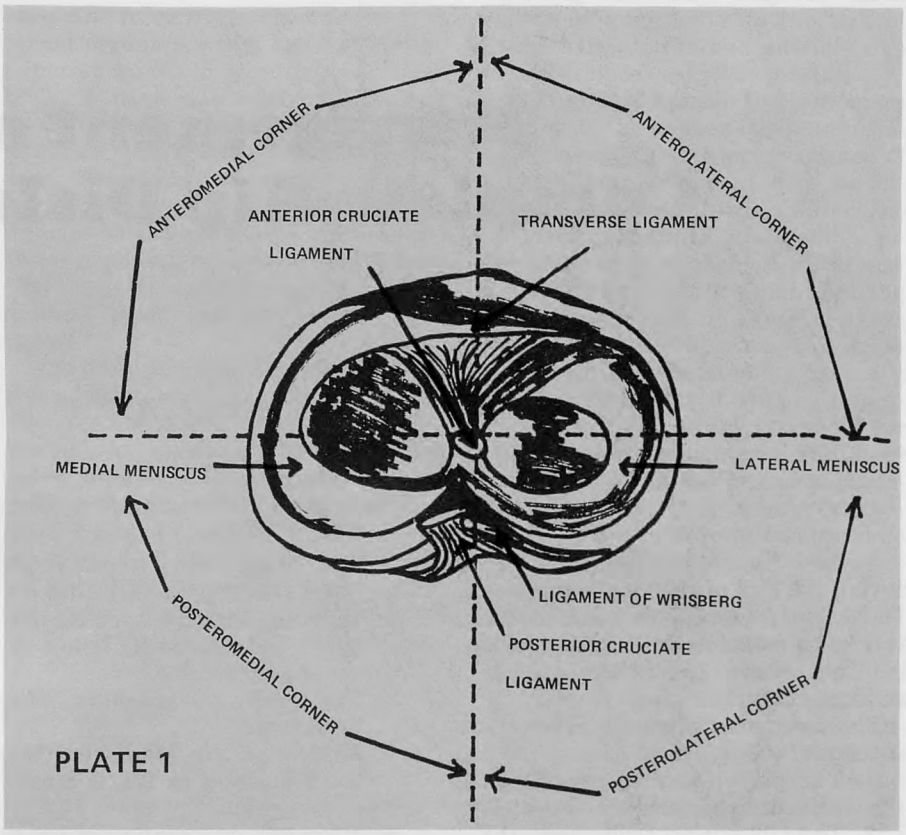


PLATE 1

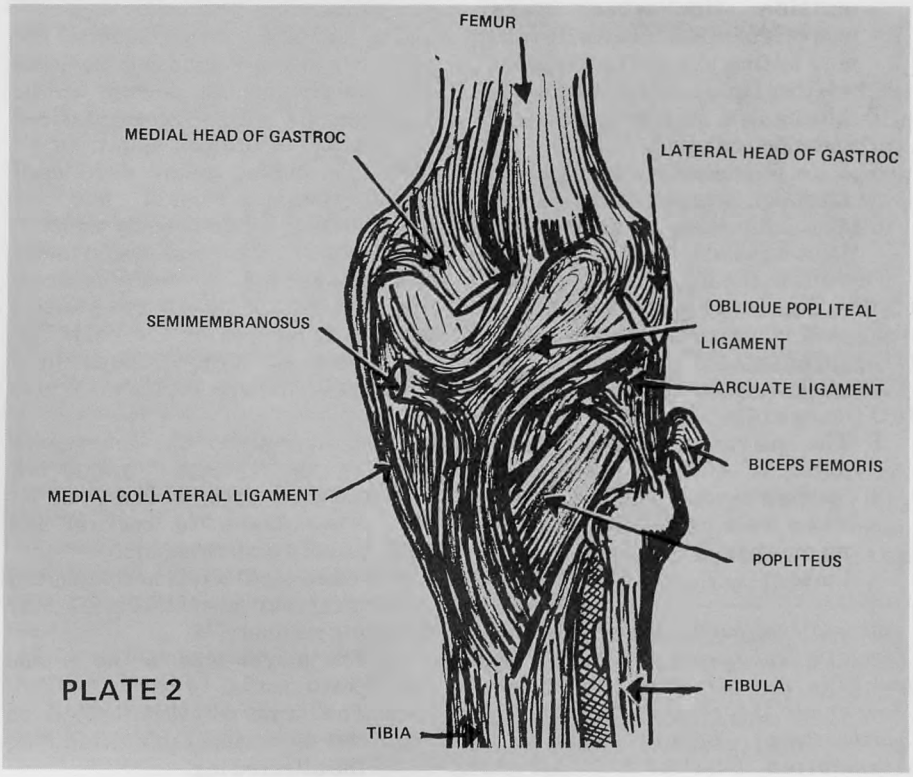


PLATE 2

Steve Brown, is a licensed Certified Athletic Trainer. He has a B.S. in Health & Physical Education, from a Texas Tech Univeristy, 1973.

He has been assistant trainer at Rice University, Houston, Texas since July 1973.

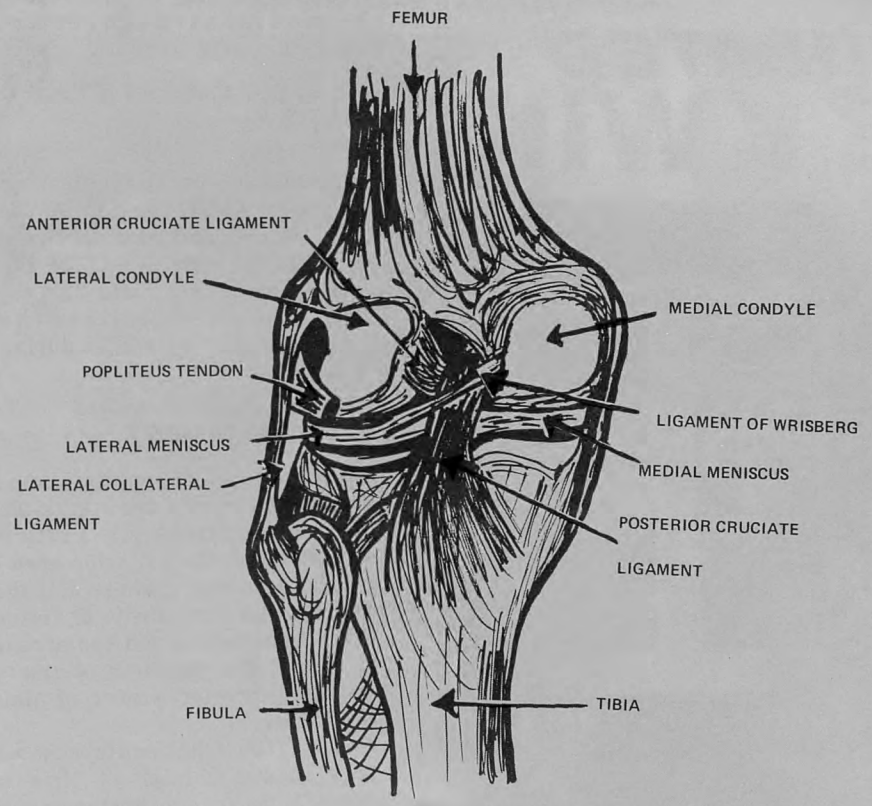


PLATE 3

anterior displacement of the tibia on the femur.

B. MEDIAL AND LATERAL MENISCI

ANATOMY: Semi-lunar shaped cartilages located between the femoral condyles and the tibial table. (See Plate 1).

FUNCTION: Shock absorption, stability, lubrication and most important, rotary motion of the knee occurs between the menisci and tibia.

C. MEDIAL CAPSULE

ANATOMY: This comples is divided into three portions: (1) antermodial corner; (2) mid portion (medial collateral); (3) postermodial corner. (See Plate 1).

FUNCTION: Stabilizes the knee against medial and rotary stresses.

D. POSTERIOR CAPSULE

ANATOMY: This complex is the posterior aspect of the joint capsule. It extends proximally from the femoral condyles, distally to the tibial table. It also extends from the posteromedial portion of the capsule to the posterolateral portion of the capsule.

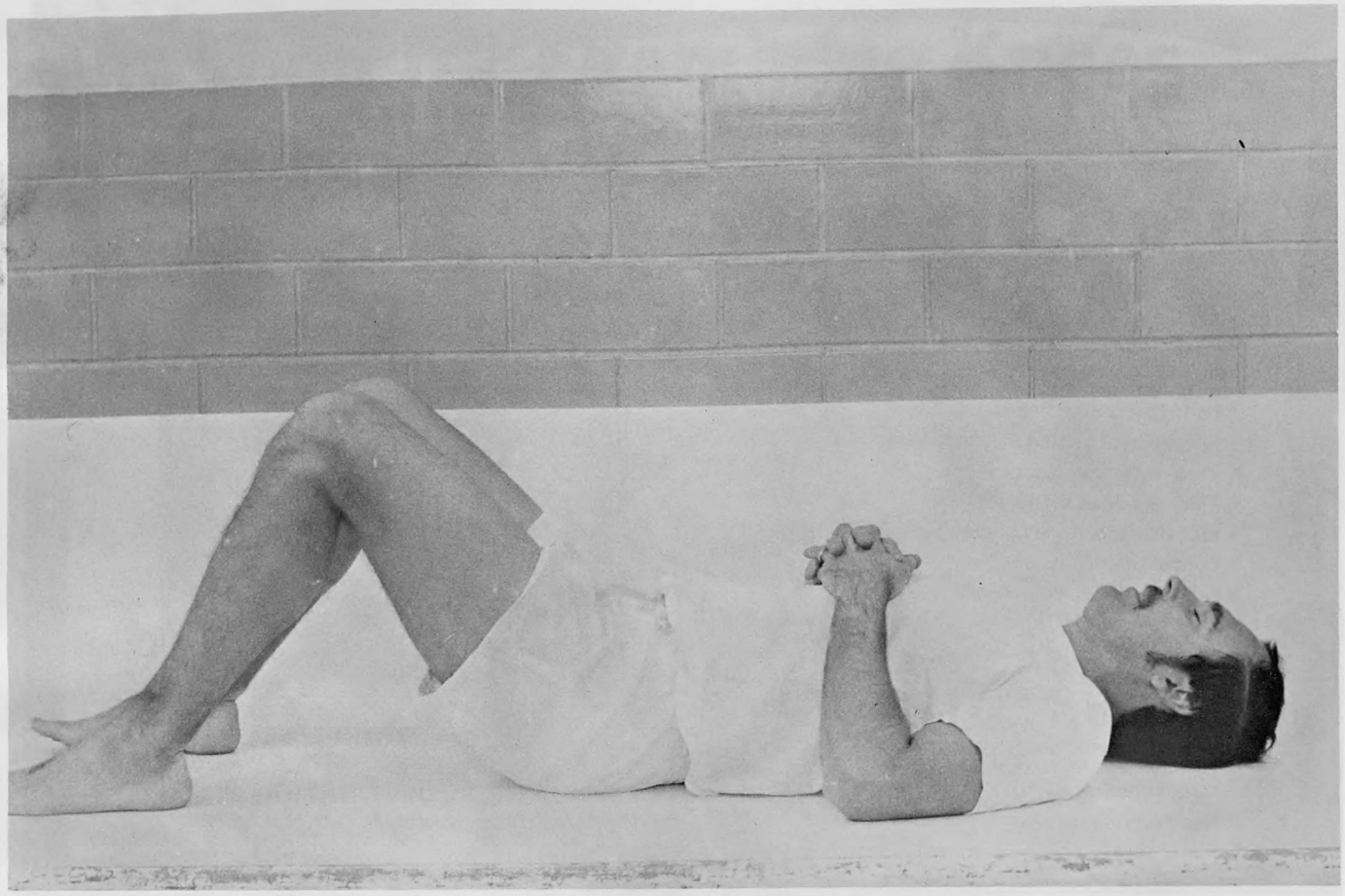


Fig. 1 Subject Supine 60° Flex.

FUNCTION: Stabilizes the knee in extension. This occurs even if the medial structures are damaged.

E. OBLIQUE POPLITEAL LIGAMENT (5)

ANATOMY: From the semimembranosus attachment on the posteromedial portion of the tibia, obliquely and laterally to the origin of the lateral head of the gastrocnemius. (See Plate 2).
FUNCTION: Stabilizes the posterior aspect of the knee during extension.

F. POPLITEUS MUSCLE AND ARCUATE LIGAMENT

ANATOMY: The popliteus muscle has three insertions: (1) lateral femoral condyle; (2) Posterior fibular head; (3) posterior horn of lateral meniscus. These linkages by capsular and meniscal tissues are collectively called the arcuate ligament. The popliteus originates on the posterior aspect of tibia. (See Plate 2).
FUNCTION: The popliteus muscle is a medial rotator of tibia on femur and also pulls posterior horn of lateral meniscus posteriorly during knee flexion. Most importantly the politeus muscle

and arcuate ligament complex provides stability by preventing forward displacement of tibia on femur during knee flexion.

G. POSTERIOR CRUCIATE LIGAMENT

ANATOMY: Attaches from mid-portion of the posterior aspect of the tibial spine and extending to the medial border of the medial femoral condyle. (See Plate 3).

FUNCTION: Mainly responsible for limiting posterior displacement of tibia on femur. This is the prime stabilizer of the knee. (7).

With this basic understanding of the structures and functions involved, the examination will now be described.

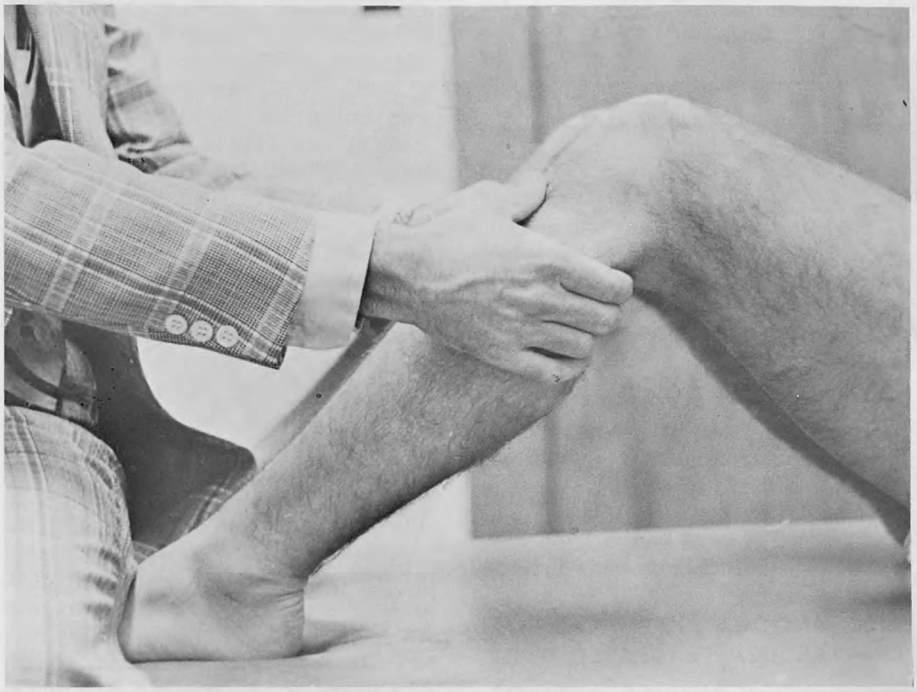


Fig. 2 Standard Drawer Test, Thigh over Feet.

STEP ONE

The position of the player is of utmost importance. The subject should be supine, with both legs relaxed, the knees flexed to approximately 60 degrees, and the feet parallel (See fig. 1). This position allows the cruciates to be in uniform tension and the posterior components of the capsule to become relaxed. (4) The examiner sits with his thigh over the feet of the player and performs the standard drawer test (See fig. 2). The amount of displacement of the uninjured knee should be noted and compared to the injured knee. It is important to examine the uninjured knee first so as not to aggravate the injured knee by unnecessary repeated examinations. This position allows one to test the anterior cruciate ligament without any interference from the posterior capsule. (4)

STEP TWO

The second drawer test is performed by the examiner after internally rotating the feet 30 degrees (See fig. 3) and stabilizing them with his thigh. This position tightens the anterior cruciate ligament since it is now wrapped around the posterior cruciate ligament. However, it should be noted that according to Slocum (1), this position also stresses the

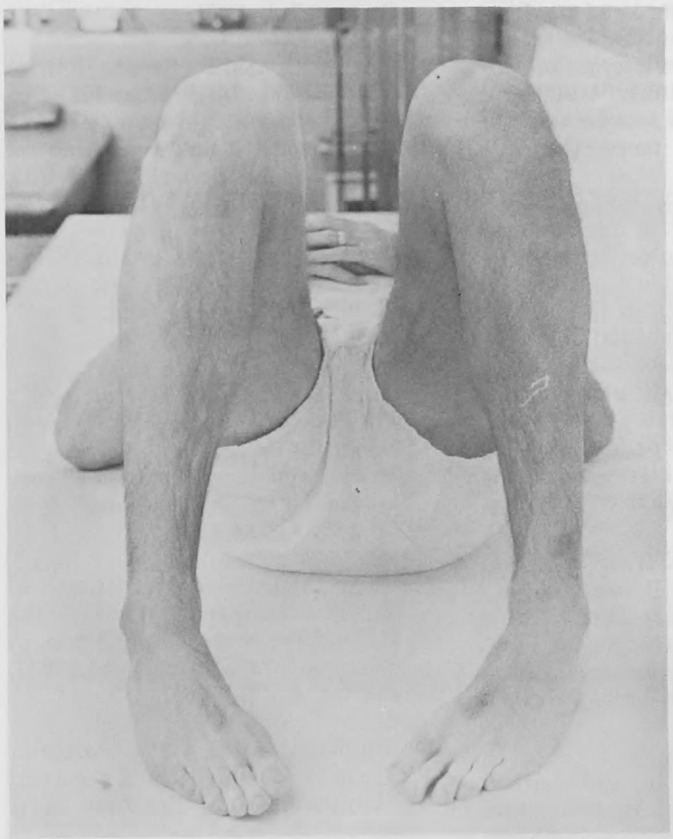


Fig. 3 Feet Internally Rotated 30°.

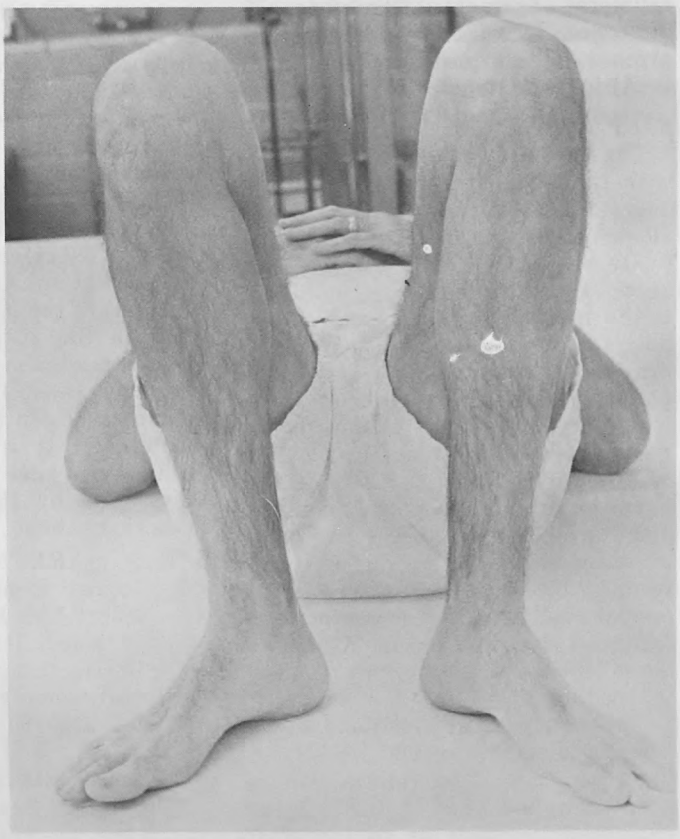


Fig. 4 15° External Rotation.

posterolateral capsule, posterior cruciate, popliteus tendon and lateral collateral ligament. Therefore, if increased forward displacement is present in this position, there is a laxity in these structures.

STEP THREE

The third drawer test is performed with the feet externally rotated 15 degrees (See fig. 4). This position allows stress to be placed on the posteromedial capsule and anterolateral corner of the joint. This is the most important aspect of the entire examination, since a positive drawer test with the feet externally rotated yields the diagnosis of rotary instability, which is caused by a posteromedial capsular tear. This tear is often related to a tear in the posterior horn of the medial meniscus and is overlooked, expecially if there is laxity in the anterior cruciate in conjunction with a strain of the medial collateral. The injury is typically classified as an "Unhappy Triad" (6) and the posterior capsule is ignored.(3)

The laxity in all position should always be compared with the opposite knee. The information is then compiled, and an intelligent evaluation is made as to the total stability of the joint. Remember that this examination is always used in conjunction with the usual procedures for testing knee stability. It is not a replacement for the medial collateral, lateral collateral, or any other ligament stability test. It is simply an additional test to help the examiner make a more thorough examination.

SUMMARY

Rotary instability is an abnormal anteroposterior motion combined with internal and ¾ or external rotation of the tibia. It is caused by a tear in the posteromedial ligament complex of the knee. This is the primary cause of an unacceptable performance in sports as related to instability. It is recognized by the athlete as a knee that 'goes out' and is diagnosed by the physical findings described above.

REFERENCES

1. Slocum, Donald B. and Larson, Robert L.: Rotary Instability of the Knee. Its pathogensis and a clinical test to demonstrate its presence. *J. Bone and Joint Surg.* 50A: 211, 1968.

2. James, Stanley L. and Larson, Robert L: Surgical Anatomy of the Knee. The Injured Knee in Sports. Postgraduate course of the American Academy of Orthopaedic Surgeons. Eugene, Oregon, July 1973.

3. Slocum, Donald B., Larson, Robert L. and James, Stanley L. Pes Anseriuns Transplant: Impressions after a Decade of Experience. *J. Sports Med. 2: 123,* 1974.

4. Detenbeck, Lee C.; Function of the Cruciate Ligaments in Knee Stability. *J. Sports Med. 2: 217.* 1974.

5. Hughston, J., and Eilers, A. F.: The Role of the Posterior Oblique Ligament in Repairs of Actute Medial (collateral) Ligament Tears of the Knee. *J. Bone and Joint Surg.* 55A: 923, 1973.

6. O'Donoghue, D. H.: Surgical Treatment of Fresh injuries to tne Major Ligaments of the Knee. *J. Bone and Joint Surg.* 55A 941, 1973.

7. Hughston, J. C.: The Posterior Cruciate Ligament in Knee-Joint Stability. *J. Bone and Joint Surg.* 51A: 1045, 1969. •

CALENDAR OF COMING EVENTS

by
JEFF FAIR, A.T.,C.

September 13- 1975 — The American Academy of Orthopedic Surgeons will sponsor an Academic Day with the topic, "Perplexing Fracture Problems" it will be held in Portland, Maine. For information contact, Lawrence Crane, M.D., 157 Pine Street, Portland, ME 04102

September 22-24, 1975 — The Physician and Sports Medicine and The Hahnemann Medical College will sponsor the meeting, "Sports Medicine and Private Practice", in Philadelphia, Pennsylvania. For information contact, Robert Schaefer, Department of Continuing Education, Hahnemann Medical College, 230 North Broad Street, Philadelphia, PA 19102.

October 13-17, 1975 — A Clinical Congress of The American College of Surgeons will be held in San Francisco, California. Contact, The American College of Surgeons, 55 East Erie, Chicago, IL 60611 for more information.

October 30-November 1, 1975 — The American Academy of Orthopedic Surgeons will hold a meeting with the topic "The Pine" in Durham, North Carolina. For further information contact James Urbaniak, M.D., Duke University Medical Center, Durham, NC 27706

November 3-5 1975 — The American Academy of Orthopedic Surgeons will hold a course "Newer Concepts in Fracture Healing and Treatment" in Philadelphia, PA. For further information contact Victor Frankel, M.D., 2065 Adelbert Road, Cleveland, OH 44106.

November 6-8, 1975 — The American Academy of Orthopedic Surgeons will sponsor "The Foot; Child and Adult" in Dallas, Texas. Further information may be obtained from F. Leon Ware, M.D. 3600 Gaston Avenue, Suite 303, Dallas, TX 75246

November 10-12, 1975 — The American Academy of Orthopedic Surgeons will sponsor the course "Orthopedics — Engineering — Rehabilitation; — A New Area", in Chicago, Illinois. For further information contact Paul R. Meyer, M.D., 233 East Erie Street, Chicago, IL 60611

November 21 - 23, 1975 — The Southern Regional Athletic Trainers Conference at the Pinehurst Hotel, Pinehurst, N.C. If interested in attending write to Al Proctor, Director of Sports Medicine, Department of Public Instruction, State of North Carolina, Raleigh, North Carolina 27611.

December 12-14, 1975 — The American Academy of Orthopedic Surgeons will hold a course in "Recent Developments In Total Joint Replacement" in Miami Beach, Florida. For information contact Augusto Sarmiento, M.D., P.O. Box 520875, Biscayne, Annex, Miami Beach, FL 33152

ATHLETIC TRAINING will be happy to list events of interest to persons involved in sports medicine, providing we receive the information at least two months in advance of publication. Please include all pertinent information and the name and address of the person to contact for further information. This information should be sent to Jeff Fair, Athletic Department, Oklahoma State University, Stillwater, OK 74074. •

LETTERS TO THE EDITOR

Dear Editor:

Congratulations to you and your staff in producing such a fine June issue of "The Journal". I'm sure that I am not alone in saying that all the articles, and especially the Schering Symposium articles on foot and ankle injuries, were extremely pertinent to us all.

Keep up the good work.

Respectfully yours,

David H. Shon, A.T.C.
Athletic Trainer

Dear Editor:

I would like to take this opportunity to thank the National Athletic Trainers Association for choosing me as one of the recipients of the William E. Newell Scholarship Awards. To win an award in honor of a man of such high standards as Mr. Newell is truly a great honor.

Many people were instrumental in aiding me to receive this award. They are Mr. Rod Compton, Sports Medicine Director and Dr. James Bowman, team physician at East Carolina University and also my fellow student trainers at ECU.

Again thank you for the honor of receiving the William E. Newell Scholarship Award.

Respectfully yours,

Kirby E. Patterson
Student Trainer
East Carolina University

Dear Editor:

I am setting up a student training course in my high school and need some expert assistance.

If anyone has any *manuals*, handouts, charts or any other material that could be used in a high school training class could you send me information on how I can obtain these materials?

Please send to the following address:

James Frye
518 Illinois St.
Park Forest, Ill. 60466

Thank You!!!!!!!

A Good Save!

In fact, the ATHLETIC TRAINING Library Cases, are the best way to save and protect your copies of ATHLETIC TRAINING. They're custom-designed for the magazine. Rugged. Handsome. A perfect way to conserve space. Color: Navy blue and beautiful gold. Prices: $4.25 each; 3 for $12; 6 for $22. To order, just fill in and mail the coupon below.

Allow three weeks for delivery.

To: **ATHLETIC TRAINING**, P.O. Box 5120, Philadelphia, Pa. 19141

Please send me_____ **ATHLETIC TRAINING** Library Cases. Prices: $4.25 each; 3 for $12; 6 for $22. My check (or money order) is enclosed.

Name

Address

City State Zip

ONE SOURCE

for all training room needs

School Health Supply has long been THE leader in training room furniture and train-aid supplies. Name brands and top quality furnishings at special school prices are as close as your mailbox.

WRITE TODAY FOR FREE COACH AND TRAINER CATALOG

SCHOOL HEALTH SUPPLY CO.
300 Lombard • Addison, Illinois 60101

Please rush a copy of your Coach & Trainer Catalog.

NAME

SCHOOL

ADDRESS

CITY STATE ZIP

DOES YOUR DEPARTMENT AND LIBRARY SUBSCRIBE TO ATHLETIC TRAINING?

Libraries Subscribing to *ATHLETIC TRAINING*

Adelaide College of Advanced Education
University of Alabama
University of Alberta
American University
Amphitheater Schools
Appalachian State University
University of Arizona
Arizona State University
Ashland College
Stephen F. Austin State University
Ball State University
Community College of Baltimore
Baylor University
Boise State University
British Columbia Institute of Technology
State University College at Brockport
California State Polytechnic University
California State University
California State University, Fresno
California State College at Long Beach
California State University, L.A.
California State University, Northridge
California State University, Sacramento
California State University, San Diego
California State University, San Jose
Calvin College
Carthage College
Central Michigan University
Central Connecticut State College
Central State University
Central Washington State College
Baptist College at Charleston
Clear Lake High School
Cleveland State University
Coe College
University of Colorado
University of Dayton
University of Delaware
Denison University
Dumont High School
DuPont Institute
East Carolina University
East Central State College
East Duplin High School
Eastern Illinois University
Eastern Kentucky University
East Tennessee State University
Eastern Washington State College
Florida Int' University
Florida Tech University
Fort Hays Kansas State College
Furman University
Georgia College
Georgia Institute of Technology
Georgia Southern College
University of Georgia
Gloucester County College
Great Falls High School
Humboldt State University
University of Illinois
Illinois State University
Indiana State University
The University of Iowa
Iowa State University
Ithaca College
Kansas State Teachers College
Kearney State College
Kent State University
Kenyatta University College
Lees-McRae College
University of Lethbridge
Lincoln University
Lock Haven State College
University of Maine
McNeese State University
Metro State College
Miami Carol City Senior High School
Michigan State University
Midland High School
University of Minnesota
Montclair State College
Mt. Gravatt Teachers College
Mt. Carmel High School
Mt. San Antonio College
University of Nebraska
University of Nebraska at Omaha
University of Nevada
University of Nevada, Las Vegas
University of New Brunswick
Norfolk State College
University of North Carolina at Wilmington
North Dakota State University
University of North Dakota
Northeast Louisiana University
Northern Arizona University
University of Northern Colorado
University of Northern Iowa
Northern Michigan University
Northern State College
Norwich University
University of Notre Dame
Occidental College
Odessa College
Ohio University
Old Dominion University
Oregon State University
State University College at Oswego
Otterbein College
Pan American University
Panjab University
Porterville College
Portland State University
University of Puget Sound
Purdue University
University of Queensland
University of Richmond
Salisbury State College
University of San Francisco
Slippery Rock State College
University of South Dakota
South Dakota State University
Southeast Missourri State College
Southeastern State College
Southern Illinois University
Southwest Minnesota State College
Southwest Missourri State College
Southwest Texas State University
Springfield College
Sul Ross State University
University of Tennessee
Tennessee Technological University
Texas City High School
Texas College of Arts and Industries
Texas Womens University
Trenton State College
DF SLBS
Valparaiso University
University of Vermont
University of Victoria
University of Virginia
Library VPI & SU
University of Washington
Washington University
Washington State University
Waupun Senior High School
Wayne State University
West Virginia University
West Chester State College
West Texas State University
Western Illinois University
Western Kentucky University
Western Michigan University
Western State College
Western Texas College
Wichita State University
University of Windsor
University of Wisconsin
University of Wisconsin at LaCrosse
University of Winconsin at Whitewater
Wayne State University

NATA JOURNAL MEMBERSHIP SURVEY

Survey closing date is November 30, 1975. Please do not send in after this date.

Subject: Journal Interest

Circle appropriate response in left-hand column.

A B C D E — 1. Membership classification: A. Certified B. Active C. Associate D. Student E. Other (Specify)

A B C D — 2. Position level: A. High School B. College C. Pro (what sport)_____ D. Private

Please indicate your feelings on the departments of the NATA Journal below and make additional comments in the space provided.

	Remain	Expand	Drop	Comments
Abstracts				
Announcements				
Calendar of Coming Events				
Current Literature				
Letters to the Editor				
Letter from the President				
Not For Men Only				
Potpourri				
The Student Trainer's Corner				
Articles				
Minutes of Board Meetings				
Additions				

place staple here

fold here

FIRST CLASS
PERMIT NO. 265
GREENVILLE, N.C.

BUSINESS REPLY MAIL

No Postage Stamp Necessary If Mailed In The United States

POSTAGE WILL BE PAID BY

ATHLETIC TRAINING

THE JOURNAL OF THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

P. O. Box 2928
E.C.U. Branch
Greenville, N. C. 27834

fold here

A Comment On Tennis Elbow

by
PROFESSOR KARL K. KLEIN

"Tennis Elbow", one of the knotty injury problems of the racquet enthusiast has had numerous approaches to its solution. An attempt to define the problem is similar to that of "shin splints". Both injuries have had numerous definitions with some variation. The athlete plagued with this problem has observed and possibly experienced numerous approaches to treatment. One procedure may be effective for one while other forms of treatment are successful for others. But what about the racquet "buff" that has run the gamut of traditional treatment with no success i.e. rest, stretching, exercise balms, whirlpool, ultrasound, etc. and still has the problem when he gets back on the court?

It may be possible that in the application of traditional treatment the athlete is too anxious to get back on the court and doesn't honestly take the full amount of treatment necessary to overcome the existing problem. Of course for these we can only extend our sympathy and recommend continued treatment in seeking the solution to the problem. My concern is with those who have followed all of the directions and still are faced with the dilemma. The following procedure has proven to be successful in such "knotty cases".

Take two *wool* sweat socks and cut off the toe part of the foot. Slide the two socks together into a tube and sew the two socks together to form one unit. The tube can then be pulled up on the arm, across the elbow, with the elbow fitting into the "heel". A ring of tape, not too tight, can be placed around the sock above the elbow to keep it from slipping down. When this single "wrap" is worn during play it keeps the elbow joint warm and eliminates the painful symptoms of tennis elbow. After playing the tube can be slipped off and be ready for the next encounter. It should be part of the players outfit.

This simple procedure has been used on a number of squash and tennis players who have tried all of the other treatment procedures without success. They find that they are able to participate "pain-free". Some have even applied a balm on the arm beneath the sock application to enhance the procedure while others found just the sock was sufficient. Apparently the extra production of heat to the area is the working solution. "Try it, you'll like it!" •

POTPOURRI

by
DENNIS ATEN, A.T.,C.

Warm-up Is Important for the Heart

James Barnard has recently discovered some interesting aspects regarding warm-up. Sudden death in adults is not at all uncommon and usually occurs in individuals with coronary artery disease. Although a majority of the deaths occur while the individuals are relatively sedentary, some occur during or immediately after strenuous exercise. In contrast with adults, children have little cardiovascular disease and fewer incidents of sudden death. During the past few years several individuals have experienced sudden death from myocardial infarction following participation in sprint races. A young girl from Florida died after running a relay race during recess. A teenage boy from California died after running a wind sprint in football practice. Autopsy reports on both of these young people showed no vascular obstruction which would limit oxygen delivery to the heart. Three men participating in Senior Swim Meets died after racing in the 50 yd. dash. Most athletes feel that stretching and warm-up exercises are important to prevent muscle and tendon injuries but what effect does warm-up or the lack of it have on the heart?

The results of two studies suggest that the adaptation of coronary blood flow to a rapid increase in cardiac work is not instantaneous and periods of ischemia (inadequate oxygen supply) may occur in hearts without apparent vascular obstruction. Adequate warm-up (more than two minutes of easy jogging) can be effective in reducing the ischemia. These findings provide a physiological basis for performing warm-up prior to sudden, strenuous activity. Although warm-up is suggested for everyone, it is most important for individuals who have a reduced oxygen supply to the heart due to vascular obstruction or anemia. Similarly, individuals who have excessive demands on their hearts due to hypertension, aortic stenosis, etc. should not perform sudden exercise without adequate warm-up.

Football and Football Equipment

The U.S. Consumer Product Safety Commission estimates that each year over 230,000 people receive hospital emergency room treatment for injuries associated with football and football equipment. Most injuries occur in high school and college sports activities. Here are some typical accident patterns:

1. *Knee and head injuries,* and other cuts and bruises, often caused by sharp edges on the outside of opponents' protective equipment.
2. *"Spearing" an opponent with a helmet* - - This is a violation of the rules but is a frequent cause of injuries.
3. *Long cleat shoes causing injuries to opponents.*

In terms of frequency and severity of injuries, football is more hazardous than any other sport. Because of its hard body contact, football is inherently hazardous. However, there are some measures which you can take to play football more safely. The U.S. Consumer Product Safety Commission makes the following suggestions:

1. *Protective Equipment*
   - - Use soccer shoes which have short, flat heel cleats to reduce injuries to other players.
   - - Use helmets which provide as much protection as possible for your face, without having protusions which could injure your opponents.
2. *The Player*
   - - Repeat injuries can be a particular hazard. After an injury, check with your physician before you resume playing.
   - - Play with others in your own size and weight group.
   - - Learn the rules of the game and follow them. Many injuries are caused by violations of existing rules. Game officials should enforce the rules stringently.
3. *The Environment: Coaches, Playing Field, and Practice Sessions*

   Look for a coach who promotes safer play.

   If the field has holes in it or is littered, you run a greater risk of injury. Survey the field and keep it clear and in good condition.

   Limit tackling and blocking when you practice. Some experts believe these hazardous activities should be performed as infrequently as possible, perhaps only in actual games. Be aware that half of all football related injuries occur in practice.

The Injured Ankle

According to Dr. James Garrick, there are few sports that spare the ankle. The ankle ranks among the three most commonly injured anatomic regions (with the knee and shoulder) in athletes at vitually every level of participation.

In a recent study of 1,650 high school students participating in 17 sports in four schools, there were 618 time-loss athletic injuries, 99 of which involved the ankle. Participants in two sports - swimming and tennis - sustained a total of ten injuries, none of which involved the ankle. Ankle injuries, however, occurred in every other activity. Wrestling resulted in the lowest portion of ankle injuries (6%), while men's basketball resulted in the highest (53%). In the remaining sports, from 10-20% of all injuries involved the ankle. Thus, regardless of whether the sport, running, throwing, tackling, or jumping, the ankle is frequently injured with a most unique characteristic that the vast majority of the injuries fall into a single type/location category. Shoulder

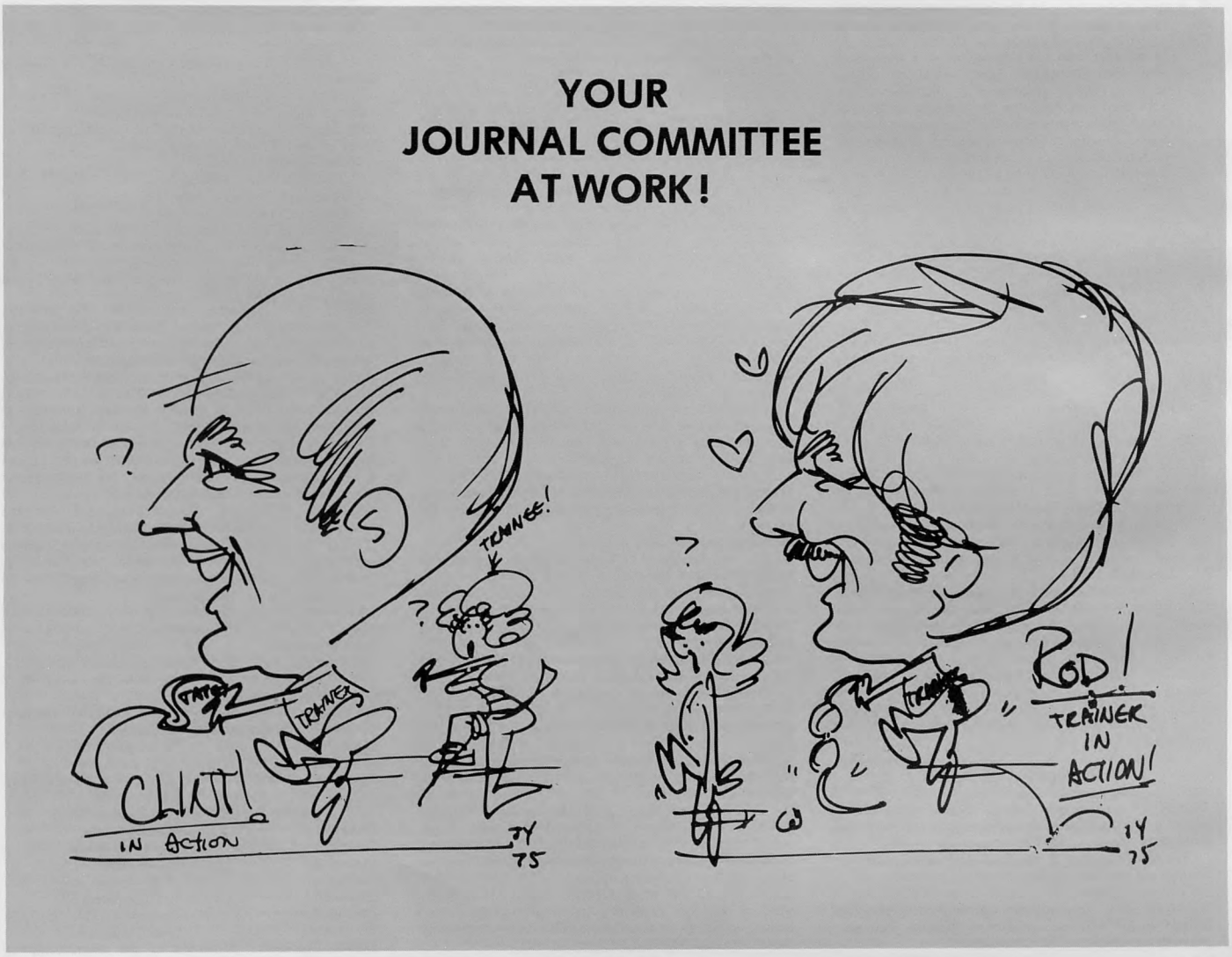
injuries involve many structures (rotator cuff, acromioclavicular ligaments, the menisci, the patella, etc.). On the other hand, in our experience at the high school and college level, ankle injuries are sprains in over 75% of the cases and the vast majority of these sprains (75-85%) involve primarily the lateral collateral ligaments. Thus, one can cover about two-thirds of the ankle injuries occurring in sports by merely discussing the inversion sprain.

No Significant Difference In Isometric and Isotonic Groups

Freshman and varsity college football players were studied by Meadows (19) to determine the effects of isometric and isotonic strength training on the speed and force of the offensive football charge. The charge was for a 6-foot distance from a 3-point stance; force was measured as the impact against a blocking pad on the Crowther blocking sled. Three groups of 28 men each were employed: isotonic, isometric and control. The strength training sessions were held three times a week for 10 weeks, as follows: isotonic group, six progressive weightlifting exercises based on 10-RM; isometric group, two maximum 6-seconds contractions of hip, knee, shoulder and elbow movements. Most of the control group participated in regular physical education. Both experimental groups improved significantly on both the speed and the force of the offensive football charge, while the control group did not change significantly on either test. The differences between the isotonic and isometric groups on the tests were not significant.

Weight Training and Motor Fitness

Campbell (7) studied the effects of weight training on the motor fitness of college football, basketball, and track and field squads during their competitive seasons. To measure motor fitness, the composite T score for the following seven tests was used: right grip, jump and reach, squat thrusts, pullups, situps, 300-yard shuttle run and 50 yard dash. Each of the three sports squads was divided into two groups, matched by motor fitness composites, at the beginning of the respective seasons, known as A and B groups for each sport. From the opening day of the season until midseason, each A group took regular training for its sport and also followed, twice a week, a progressive weight training program designed for the respective sports; the B groups added weight training. In all instances, motor fitness improved significantly, beyond the regular sports training, as a result of strength conditioning with weights. When weight training was dropped, motor fitness declined. The investigator concluded that weight training should be started well before the competitive season and *continued throughout the season.* The study did not investigate improvements in playing the various sports as a consequence of strength development through supplemental weight training activity. •



John Sciera
William Flentje
Gary Delforje
Mel Blickenstaff
Bob Beeten
Wilfred Budell
Robert Sinkler
Joan Surdez
(Vernon Eschenfelder - added following convention)

XXI. The Board of Directors held a lengthy general discussion in reference to a full-time executive director, computer services, problems with the professional education committee certification committee and future planning.

XXII. The Board of Directors recessed at 11:45 o'clock p.m. with instructions to reconvene at nine o'clock the following morning, June 6, 1975.

XXIII. Fred Hoover, National Convention Chairman appeared before the Board for discussion on convention sites. Further discussion was tabled until Wednesday, after each director could meet with his members.

XXIV. Lindsy McLean, Chairman of the Certification Committee appeared before the Board for his committee request.

A. A motion was made by Mr. Flentje and seconded by Mr. Lee to budget the Certification Committee with $3,500.00 for secretarial expenses and relocate all certification business in Ann Arbor, Michigan.
ACTION: Approved

B. A motion was made by Mr. White and seconded by Mr. Flentje to appropriate $1,410.00 for the certification committee to cover the anticipated expense of examination revision in 1975.
ACTION: Approved

C. A motion was made by Mr. White and seconded by Mr. Flentje that $1,000.00 be appropriated for item processing during the 1976-1977 year.
ACTION: Approved

D. A motion was made by Mr. Jordan and seconded by Mr. Malacrea to appropriate $500.00 for printing and mailing cost of the certification brochure for the 1975-1976 fiscal year.
ACTION: Approved

E. A motion was made by Mr. Bunch and seconded by Mr. Crowl to amend Section V of the Procedures for Certification to read as follows:

> Any member who has a minimum of a Bachelor's Degree, has passed an athletic training course presents evidence of successful completion of an NATA approved workshop for credit or is showing satisfactory progress in an NATA approved faculty-trainer educational program and has satisfied the requirements for a state teaching license may be ENDORSED as a secondary school athletic trainer. In addition, proof of current certification in Basic First Aid and CPR is also required under this section.

ACTION: Approved 9-1 (No - District 5)

XXV. A motion was made by Mr. Flentje and seconded by Mr. Lane to reappoint Otho Davis as Executive Director.
ACTION: Approved

XXVI. There was discussion on moving the NATA National Office from Lafayette, Indiana to the Philadelphia area and utilizing the Fimaco, Inc., computer service.

XXVII. Dick Malacrea resigned as chairman of Public Relations since becoming a member of The Board of Directors. A motion was made by Mr. Lane and seconded by Mr. Flentje to accept the resignation of Mr. Malacrea
ACTION: Approved

XXVIII. President George recommended to the Board the name of Mr. Fritz Massman to the position of Chairman of the Public Relations Committee.

A motion was made by Mr. Jordan and seconded by Mr. Malacrea to accept the appointment of Mr. Massman.
ACTION: Approved

XXIX. The Recruitment Committee requested a $2400.00 budget for 1975 - 1976 fiscal year. A motion was made by Mr. Flentje and seconded by Mr. Melhart to accept the above request.
ACTION: Approved

XXX. The Research and Injury Committee did not submit a report.

XXXI. The Allied Association for Health, Physical Education and Recreation report by Bud Miller was presented to The Board.

A motion was made by Mr. Lee and seconded by Mr. Crowl to Accept the report.
ACTION: Approved

XXXII. The American College Health Association report by James Dodson was presented to the Board for discussion.

A motion was made by Mr. Lane and seconded by Mr. Flentje to accept the report.
ACTION: Approved

XXXVII. The National Operating Committee on Standards for Athletic Equipment by Tom Wall was presented to the Board for discussion.

A motion was made by Mr. Flentje and seconded by Mr. Melhart to accept the report.
ACTION: Approved

XXXVIII. Following a brief discussion on the office of Vice President, Mr. Flentje nominated Eddie Lane which was seconded by Mr. Smith and moved by Mr. White to close the nominations.

Eddie Lane, Dallas Independent School District (District 6) was elected the Vice President of NATA for 1975 - 1976 by his Board peers.

XXXIX. There was discussion on the transfer of Marshall University from District 4 to District 3.

A motion was made by Mr. White and seconded by Mr. Bunch to transfer Marshall University (Huntington, West Virginia) from District 4 to District 3.
ACTION: Approved

XXIII. Discussion was held on The American Medical Association report of the Committee on Medical Aspects of Sports.

XXXIV. The American Physical Therapy Association report by Frank George was presented to The Board for discussion.

A motion was made by Mr. Jordan and seconded by Mr. Flentje to accept the report.
ACTION: Approved

XXXV. The Division for Girls and Women's Sports report by Holly Wilson was presented to the Board for discussion.

A motion was made by Mr. Flentje and seconded by Mr. Melhart to accept the report.
ACTION: Approved

XL. There was discussion on the 1976 convention in Boston and on the 1977 convention in Dearborn, Michigan.

XLI. There was lengthy discussion on the resolution of head tackling and spearing. After many revisions, a motion was made by Mr. Flentje and seconded by Mr. Lane to accept the following resolution:

The National Athletic Trainers' Association is dedicated to the prevention of injuries in athletics.

Head and neck injuries have been documented as injuries of severe magnitude and the leading cause of fatalities in football.

Be resolved that the NATA is on record opposing the use of tackling and blocking techniques with the helmet and/or face mask as the initial point of contact.

Be it further resolved that the NATA is opposed to the teaching of these techniques in football.

Anaheim, California
June 11, 1975
ACTION: Approved 8 - 0 - 2 (District 3 - 9 abstained from voting)

XLII. Discussion was held on the selection of Olympic trainers.

XLIII. There was discussion on the National Health Institute

XLIV. The Board discussed the problems of Athletic Trainers who suture, aspirate and inject in the course of their duties. The NATA recommends that the members become familiar with the individual state laws on this subject.

XLV. The Illinois Athletic Trainers Act was briefly discussed by the Board.

XLVI. The Larry Schmeidler, Schering Corporation appeared before the Board to discuss the Schering Symposium and future plans, involving a joint-venture, co-sponsorship of the symposium.

A motion was made by Mr. Lee and seconded by Mr. Flentje for the NATA and the Schering Corporation to co-sponsor the Schering symposium at the NATA conventions.
ACTION: Approved

XLVII. The letters "ATC" are the official meaning for Certified Athletic Trainers.

XLVVI. There was discussion on a resolution by District 4 on the matter of all expenses incurred by a District Director to attend an NATA Board of Directors Meeting being paid by NATA.

Following discussion, a motion was made by Mr. White and seconded by Mr. Flentje to accept the above.
ACTION: Not Approved (1-9) (1 Yes - District 4)

XLIX. There was discussion on a change of the convention date one week later in June. No action was taken.

L. The Board adjourned at 5:45 o'clock p.m. on Saturday with instructions to reconvene at eight o'clock on Tuesday.

IL. The Business Meeting of the National Athletic Trainers Association was convened at eleven fifteen o'clock, June 9, 1975, at the Disneyland Hotel, Anaheim, California, Mr. Frank George, President, presiding, who opened the meeting with a prayer.

LII. A request was made President George to dispense with the roll call. A motion was made by Mr. Elmer Brown, seconded by Mr. Robert Hand and unanimously carried that the roll call be dispensed with.

LIII. The minutes of the 1974 business meeting and the minutes of the 1975 mid-year board meeting were published in *Athletic Training, Journal of The National Athletic Trainers Association.* A request was made to approve the minutes without their being read. A motion was made by Mr. L.F. "Tow" Diehm, seconded by Mr. Joe Richardson and unanimously carried that the minutes be approved without being read.

LIV. The Treasures' Report was presented by Otho Davis, Executive Director. President George requested for acceptance of the report, whereupon a motion was made by Dr. Gary Delforge, severally seconded and unaminously carried that the Treasures' Report be approved as presented.

LV. The Executive Director presented the report covering the June 5 and 6, 1975 Board of Directors meeting as reviewed in sections I. to L. of the above minutes, whereupon a motion was made by Mr. Jeff Fair, seconded by Mr. Lawrence "Porky" Morgan and unamiously carried that the report be accepted.

LVI. Memorial resolutions were presented and the Delegates passed honored in a moment of silent prayer.

LVII. Mr. Lawrence "Porky" Morgan presented the Twenty-Five Year Award recipients. The 1975 recipients who will receive their certificate and diamond insert pins awarded by the BIKE Division of the Kendall Company at the Awards Banquet are as follows:

Joseph R. Altott
William Black
Prosper F. Cima, Jr.
Kurt Grimm
Robert Hand
John E. Lacey
Bruce Melin
Edward Pillings
John D. "Jack" Rockwell
Paul J. Schneider
Frank Semanick
George F. Sullivan
Raymond B. Ulinski
William A. Wild

LVIII. Mr. George Finley Sullivan presented the Honorary Award Recipients. They are as follows:

Mr. Frank Howard, former football coach and athletic director at Clemson Univeristy

Dr. David George Moyer, M.D. team physician, Lafayette College

Mr. W.R. "Bill" Schroeder, President of The Citizens Savings Hall of Fame

Dr. Robert J. Kerlan, orthopedic surgeon in California and team physician for the Los Angeles Rams

LIX. Mr. Sullivan presented the Citizens Savings Hall of Fame recipients. They are as follows:

Robert H. Gunn - District 6
C. Rodney Kimball - District 7
Edward A. Sulkowski - District 2
Charles W. Turner - District 2

LX. President George announced that Kirby Elwood Patterson, East Carolina University is the recipient of the William E. Newell Scholarship presented to the NATA by Cramer Products Incorporated. This award will be presented at The Awards Banquet.

LXI. President George received for NATA The President's Challenge Award from Mr. Jim Cody of Protective Products. The recipients of this award will not be announced until the Awards Banquet.

LXII. Mr. Lindsy McLean announced that the recipients of the 1975 Eddie Wojecki Certification Achievement Awards are Dennis G. Sealey of the Univeristy of Nebraska and Linda Weber Daniel of Ohio State University. The award will be presented at the Awards Banquet and is presented to the NATA by the Larson Laboratories, Erie, Pennsylvania for certification excellence during the preceeding year.

LXIII. Mr. William E. Newell announced that the winner of the postgraduate scholarship is Charles R. Hawley, Northwest Missouri State University. For the undergraduate scholarship the winner is Jeffrey J. Ciolex, Miami (Ohio) University. The awards will be presented at the Awards Banquet.

LXIV. Mr. Newell announced that John Faulstick, Ball State University is the recipient of the first Robert H. Gunn scholarship.

LXV. Executive Director Davis presented the NATA Award of Appreciation to Mr. Bill Chambers, 1975 Convention Program Chairman.

LXVI. President George presented the 1975-76 Board of Directors to the membership as follows:

District 1	Wesley D. Jordan
District 2	Dick Malacrea
District 3	Craig Lewellyn, represented by Herman Bunch
District 4	Robert White
District 5	William Flentje
District 6	Eddie Lane
District 7	Warren Lee
District 8	Bill Chambers
District 9	Eugene Smith
District 10	Dick Melhart

LXVII. Comments presented to the membership by

President George are as follows:

I would like to thank Otho Davis, Executive Director of the NATA, the Board of Directors, the Committee Chairmen and Committee Members and District Secretaries for the great deal of work they have done for NATA during the past year. We are truly as Association which depends upon its volunteer workers.

There are few associations whose members are dedicated as NATA members are. I think we can be proud of ourselves for that.

Many times, in talking with you and through the Journal letters, I have asked for suggestions from each of you. There are a number of very important matters on which the Board of Directors must make decisions and so the more opinions we have on any issue, the more democratic the decision of the board will be.

I hope every member of this Association will feel that they have something to contribute. Also, please be assured that your suggestions will be considered by the Board of Directors before any decision is made.

Now, let me indicate, first of all, that the Continuing Education Program has not developed as we hoped it would because of administrative problems. It will probably be at least another year or longer before the pilot study is begun.

Now, we, the Board of Directors, Executive Directors and the Education Committee, have heard a number of complaints with regard to this one particular subject of continuing education and yet, in this respect, there was likewise a question inserted in the Journal for your reply and only 7.5 percent of the membership responded to that particular questionnaire.

Of those that responded, some 76 percent responded in the affirmative. They thought we should have a Continuing Education Program.

Now, ladies and gentlemen, let me emphasize that we don't hear from you, if you do not answer these questionnaires, then we just are not made aware of your feelings with regard to this matter.

Now, there is probably no subject that has caused more problems for me than the selection of Olympic Trainers. NATA has, in the past, been asked by the USOC to send a recommended list of trainers to them.

Now, let me emphasize — the NATA does not select the trainers who go. The United States Olympic Committee does this.

The names which the NATA sends to the USOC are selected from names submitted by the NATA Districts

If an NATA member submits or solicits his name directly to the USOC, that is a violation of the National Code of Ethics.

If the USOC selects a trainer not on that list and the trainer has not submitted his or her name directly to USOC, then that trainer has not violated the code of Ethics.

Now, we are going to have a speaker on our program tomorrow, an attorney from Iowa City, and he will be speaking of the legal implications with regard to, for example, the Athletic Trainer who, among other things, decides to aspirate, suture or inject. At the present time, NATA does not have an official policy statement regarding the matter of suturing, aspirating and injecting in the course of an Athletic Trainer's duties. This is a most difficult subject to approach because of the many variables that are involved.

When the term "aspirate" is used, there is a great difference between aspirating, for example, a blister and aspirating a swollen joint. There is a difference between aspirating a blister when there is only evidence of clear fluid or aspirating a blister when there is evidence of blood, also, when considering injections, routine immunizations are quite different from nerve blocks to anesthetize a particular area.

Basically, an Athletic Trainer should not perform any procedure which would violate his particular state law or the NATA Code of Ethics. For example, in some states only doctors and licensed nurses are allowed to inject.

The Athletic Trainer should always first have the permission of an supervision of a team physician for any procedure he or she administers.

Now, I am sure that many of these duties are included as standing operating procedure. However, every trainer-team physician relationship is somewhat different and, therefore, making each situation different.

In Article I, Section 3 of the NATA Code of Ethics it states — "The trainer must carry out the details of the doctor's orders but not go beyond the scope of the trainer's duties or the doctor's instructions."

In the same Code, in Section 8, it states — "The NATA takes a strong stand against the unauthorized use and non-therapeutic use of drugs. Any trainer who violates this stand of unauthorized and non-therapeutic use of drugs is guilty of a breach of ethics."

Personally, I don't feel athletic trainers have any business aspirating joints, injecting for nerve blocks or suturing incisions. NATA has asked a lawyer to look into this problem and to advise us as to what should be done.

As I said, we will have a speaker concerning this matter on tomorrow's program.

Now, there are currently three pieces of federal legislation which involve, directly or indirectly, the athletic trainer. Hopefully I can clear some of the confusion which has developed concerning this legislation.

There was an article which was published in BIKES Sports Trail. This article, for example, states that all three pieces of federal legislation had been passed by Congress and had been signed by President Ford.

Now, this, in reality, not a true statement and so all I can say to you is that you should not believe everything you read. We will try to keep you informed. What was printed there was, in reality, a mistake. Now, because it is in print, this does not necessarily make it true.

The three pieces that were alluded to in this article were, the Athletic Trainer Act — the Athletic Safety Act of 1972. That was the first and that is an amendment to the Occupational Safety and Health Act. It deals with the safety of equipment and facilities we use. It concerns the number, for example of fire extinguishers in the field house, the type of valves in the shower room and the matter of workmen's compensation for athletic injuries.

This Act was reintroduced in Congress this year and if Congress decides to amend OSHA, then Congressman Dellums will push for this amendment. However, this has not been passed by Congress nor signed by the President

The next is the amendment to the Elementary and Secondary School Act of 1975 and the Higher Education Act of 1965.

This is known to us as the Dellums Bill.

This, for example, would require institutions engaged in interscholastic athletic competition to employ Certified Athletic Trainers. This has been reintroduced in Congress. It was explained to me that it had been reintroduced so that Congress will have something to refer to when the results of the Forsythe Amendment are tabulated.

The Dellums Bill is not passed by the Congress and has not been signed by President Ford.

The Forsythe Amendment is the third piece of legislation. This is Title XI, House of Representatives Bill No. 69.

Congress has passed this — President Ford has signed it and it provides $75,000 for a special survey of athletic injuries and deaths in secondary schools and institutions of higher education. This includes 650 colleges — 650 junior colleges and 2400 high schools. This is not the NAIRS study. It is coming out of Pennsylvania State University but it is not NAIRS.

This is a special Health, Education and Welfare Study and it is the one which probably many of you in this room have received a letter on either from your high school principal, your school president or someone else. It will probably begin next September.

Now, getting on to another subject, as you know, one of the major problems which faces this Association is meeting the medical needs of the high school athlete. We feel their needs can be met through the concept of a faculty trainer — someone who would teach during the day and be a trainer after school hours. Ideally, we would like to see every high school hire a graduate of the NATA approved curriculum. That is the ideal. However, many school systems are not hiring new staff members.

NATA has tried to solve this problem with development of a high school faculty athletic training program. We would try to train someone who already has a job in a high school and over three summers we hope we could educate them to such an extent that they would be eligible to take and pass our Certification Examination.

This program, let me add, is in its infancy. There are no programs developed and 100 percent now are turning out trainers. However, we are in the process developing this.

Massachusetts if fairly close, Indiana and California are likewise working on it.

Now, some members of NATA and some committee chairmen have indicated to me as President that the time has come for NATA to have a full-time Executive Director. Some of the committee chairmen have indicated that the workload has become too heavy for them and this is certainly understandable. Others have indicated we need a full time Director if we are to continue to grow.

Now, I think everybody in the Association would like for us to have a full time Executive Director and a permanent office. However, I don't see how we can support a salary for an Executive Director and an office without a dues increase — a dues increase of at least $10 or probably $15 for the Certified and Associate Memberships.

Otho Davis, who is our present Executive Director, has been doing a tremendous job and an immense amount of work. He has been reappointed by the Board for another year.

Now, Otho does not feel that a dues increase is justifiable at this time. We, the Board of Directors, want to know your thoughts on this matter. Please let me know and also let your Directors know how you want them to vote in relation to this matter.

Another subject that we would like to talk to you about has to do with convention sites.

Some of the Association membership from the East Coast were unable to attend this convention because of the expensive travel.

Next year, by the same token, some members from the West Coast will be unable to come to Boston because of the expensive air travel.

Now, there is presently before the Board a request to be considered that convention sites be located in the central portion of the country — probably no further West than Denver and no further East than Pittsburgh.

Please let your Director know your feelings on this matter — what you want done with relation to it. In other words, should we stay central or should we continue going from the Coast to central, back to the Coast and then back to Central?

I have been to some of your district meetings. I intend to attend the District 6 meeting to be held this summer. I will also try to stop in at some of your other meetings this afternoon. Please, if you have a question or suggestion, make it.

LXVIII. President George invited Mr. Bill Podell, Central Michigan University to make comments to the membership in reference to the Special Olympics. They are as follows;

I guess, first of all, I want to thank you for giving me these few moments here because I would like to make you aware of what is going on and what people in your Association are doing.

Now, my main purpose is to share with you a few things about the special Olympics and then about the people in our Association.

I expect that most of you already know about the International Olympics. Here I have reference to the Olympics for the Mentally Retarded. This is the year of the International Olympics which will be held in Michigan this year. We are hosting them at Mt. Pleasant, Michigan, Central Michigan University. I am sure most of you saw the advertisements regarding this.

Anyway, this will be held from August 7th through 11th. This will include representatives from every state in our country and approximately five to nine foreign countries likewise being involved. It will involve live coverage by CBS. We are going to get a lot of additional coverage.

This is also one of the reasons why I want NATA involved. We are going to have a lot of sports figures there and before long you will be seeing a lot of information about it — publicity, television sports and everything of that nature.

Now, my main purpose in being here today is to tell you a little bit about what the Cramer First-Aider did here a few months ago. They ran something in there for the student trainers and the response to that was jmust phenomenal, just unbelievable. As a matter of fact, I cannot even express in words how I felt when I started receiving those letters. As a matter of fact, I received letters from all parts of the country — from males, females, doctors, certified trainers, student trainers — all of them, for example, writing letters that they wanted to come to this meeting, volunteering their services, even paying their own expenses. We had trainers indicate that if they could not come, then they would send money for other student trainers to go. Also, they wanted to know how they could help out in other ways.

Now, after receiving so many of these fine letters, it really became difficult on how to pick people to attend. Now, I am sure some of you will receive letters accepting your offer of volunteering for this and others of you have been turned down and, in those cases, I am sorry about that.

As I said, in connection with these hundreds and hundreds of replies, we can only really handle about 15 trainers, 15 student trainers, etc. Therefore, we just put the names in a hat and picked them and that is the way it was.

I am sorry if some of you did not get picked.

Now, my real purpose in being here is to express thanks to you and, really, it is beyond my capability to express in words how I feel and how the International Association feels about the responses from you people. I can assure you that the NATA will be duly recognized by their part in this international event and that the NATA office will receive a written message ensuring appreciation for the help of the people of this Association.

All I can really say is this — thank you for being the people that you are and God bless all of you.

LXIX. Executive Director Davis presented the NATA Award of Appreciation to Mr. Fred Hoover, National Convention Chairman for the 1975 convention.

LXX. There being no new business — whereupon, in accordance with regular motion, The Annual Business Meeting was, at 12:15 o'clock p.m. adjourned.

Minutes of the second Business Meeting will appear in the December issue of *Athletic Training*. ●

GUIDE TO CONTRIBUTORS

Athletic Training, the Journal of the National Athletic Association, welcomes the submission of manuscripts which may be of interest to persons engaged in or concerned with the progress of the athletic training profession. The following recommendations are offered to those submitting manuscripts:

1. Eight Copies of the manuscript should be forwarded to the editor and each page typewritten on one side of 8 ½ x 11 inch plain paper, triple spaced with one inch margins.

2. Good quality color photography is acceptable for accompanying graphics as well as glossy black and white prints. Graphs, charts, or figures should be of good quality and clearly presented on white paper with black ink, in a form which will be legible if reduced for publication.

3. The list of references and citations should be in the following form: a) books: author, title, publisher with city and state of publication, year; b) articles: family names, initials and titles of all authors, title of article, journal title, with abbreviations accepted as per Index Medicus, volume, page year. Citations in the text of the manuscript will take the form of a number in parenthesis, (7), directly after the reference or name of author being cited, indicating the number assigned to the citation in the bibliography.

4. It is the understanding of the editor of *Athletic Training* that manuscripts submitted will not have been either previously published nor simultaneously submitted to another journal. The author accepts responsibility for any major corrections of the manuscript as suggested by the editor.

5. It is requested that each submitting author include a brief biographical sketch and acceptable photograph of themselves. Please refrain from putting paper clips on any photograph.

6. For reprints, authors are authorized to reproduce their material for their own use or reprints can be reproduced at time of initial printing if the desired number of reprints is known.

7. Unused manuscripts will be returned, when accompanied by a stamped, self-addressed envelope.

Address all manuscripts to:

Clint Thompson
Department of Athletics
Michigan State University
East Lansing, Michigan 48824

EDITOR'S COMMENTS

by
ROD COMPTON, A.T.,C.

1975 Schering Symposium Papers

The NATA must again tip its hat to the Schering Corporation for the very fine 1975 Schering Symposium during the Convention in June. Beginning with this issue, each of the next four Journals will have a paper from the presentations given in the Symposium, dealing with "Musculotendinous Injuries". I am sure all members of the NATA will benefit from the information.

Journal Evaluation

Please take note and participate in the Journal Survey (see page 170) in this issue. We are trying to feel the pulse of the membership concerning what you want to see in, and out of, the Journal. It will only take a few minutes to check the appropriate answers, make comments, fold, staple and mail the survey. It will greatly help the Journal Committee do a better job of giving you what you want.

"Case Study" Added

A new section appears in this issue. "Case Study" will give trainers and team physicians the opportunity to show how an unusual or interesting athletic affliction was cared for by first hand experience.

Should you have such a case and want it considered for publication, send it to Clint Thompson at Michigan State University. Case Study type of papers usually will not have to go through the entire Editorial Board. Please use illustrations and/or photos whenever possible.

Don't Use Your Head

At the 1975 Convention the NATA came out with its official stand concerning spearing, butt blocking, etc. in football. It reads as follows:

"The National Athletic Trainers Association is dedicated to the prevention of injuries in athletics.

Head and neck injuries have been documented as injuries of severe magnitude and the leading cause of fatalities in football.

Be it resolved that the NATA is on record opposing the use of tackling and blocking techniques with the helmet and or face mask as the initial point of contact.

Be it further resolved that the NATA is opposed to the teaching of these techniques in football."

End of resolution.

This was approved by the Board of Directors on June 11, 1975 — in Anaheim, California.

Each member should do his best to help see that such techniques are reduced, if not eliminated. Talk with your coaches and players and discuss the serious hazards of such techniques. Should you notice spearing going on during a game bring it to the attention of the officials. The player's life you save may be one of your own!! •

ANNOUNCEMENTS

SCHOLARSHIP INFORMATION

The Association has inaugurated an undergraduate and professional study program honoring outstanding students from the N.A.T.A. membership who have excelled academically as student athletic trainers. This is in the amount of $500.00 and is being awarded annually to a high ranking student in college or a university who has participated with distinction in an athletic training program.

There is also one Grant of $500.00 being awarded annually to a high ranking senior in college or a university who has participated with distinction in a student athletic training program. This award is intended to encourage the continuing education of the individual beyond that of a baccalaureate degree.

The Committee has helped establish, with Board of Directors approval, two annual Scholarship awards. The award is based upon superior performance on the National Certification Examination during the preceding calendar year. The award has been named in honor of the late Eddie Wojecki, head athletic trainer and Helms Hall of Fame recipient from Rice University. The sponsoring firm, Larson Laboratories, Inc., has agreed to include a cash Grant of $250.00 in addition to the award itself to even further assist the winners in achieving their education objectives in Athletic Training.

Protective Products, Division of Becton Dickinson and Company, through the Association has established an annual award, The Presidents Challenge Award, to be given for outstanding contributions in Sports Medicine by a doctor of Medicine or Osteopathy. The single award includes an extremely nice trophy, custom made for the doctor, so that he may display and always remember this award. Another aspect of the recognition to the honored individual is the privilege of selecting a worthy individual or institution as the recipient of a $500.00 grant for either research or education in Athletic Health Care.

In June, 1974, The Board of Directors approved a new award of $500.00 to be given in the name of Robert E. Gunn. This award will be given to an outstanding student in one of the N.A.T.A. approved curriculum programs. The student must have been a student member of the National Athletic Trainers Association for two years and must have completed his junior year and must have no other financial aid. This will be an annual commitment by the Association.

The Cramer Products, Inc., have also become involved with an annual commitment toward the William E. Newell Scholarship.

Nominations for awards will be restricted to students who are N.A.T.A. members and must be nominated by a certified athletic trainer supervisor.

At the present time there are no scholarship awards available to secondary or high school students. Applications may be received by writing to the Committee on Grants and Scholarships: National Athletic Trainers Association, 3315 South Street, Lafayette, Indiana 47904. Deadline for the above scholarships and awards in April 15, 1976.

DISTRICT 4 MEETING

District No. 4 Meeting: The 1976 Great Lakes Athletic Trainers Association (District No. 4) Winter Meeting will be March, 19, 20, 1976. The site is the Admiral's Convention Center and Holiday Inn in Merrillville, Indiana. Mr. Rod Moore II, Valparaiso University, is the General Chairman and Mr. Robert Behnke, Indiana State Univ., is the Program Chairman.

CERTIFICATION INFORMATION

Persons wishing to be certified as an Athletic Trainer by the N.A.T.A. must fully qualify under the Procedures for Certification prior to taking the Certification Examination.

The examination is given four times yearly. It is administered one day prior to the annual convention in June at the convention site, the third Sunday of January (on a regional basis), the second Sunday of March (on a regional basis), and in early August, (applications are processed at the same time as for the annual convention).

Persons desiring to take the examination may obtain application materials from N.A.T.A. Board of Certification, Post Office Box X18, Ann Arbor, Mich. 48107 provided the individual meets the membership requirement. The application must be requested in writing ninety (90) days prior to the date of the examination. No applications will be furnished to the applicants less than sixty (60) days prior to the examination date in order to assure that the application deadline of six weeks prior to the examination may be met. All August applications must be processed with the same deadlines as for the June annual convention site.

If further information is required, contact Lindsy McLean, Chairman, NATA Board of Certification, 1000 S. State Street, Ann Arbor, Michigan, 48104.

H.E.W. STUDY INFORMATION

The HEW Study of Athletic Injuries and Deaths, mandated by Pl 93-380, Sect 826, (The "Forsythe Amendment") is underway. HEW has contracted with Penn State University to collect the survey data and assist in its preparation for analysis and interpretation. This will be done by the staff of the National Athletic Injury-Illness Reporting System (NAIRS) which is housed at Penn State. Nearly 4,000 schools and colleges are in the sample. This survey, however, should not be confused with the NAIRS system.

The law requires HEW to follow injuries occurring in intramurals and physical education as well as varsity and club sports for one academic

year. The forms were designed to make it as easy as possible to provide the required information. Nonetheless, difficulties often exist.

Anyone who wishes help in interpreting the survey forms may either telephone (814/865-7619) or write to "HEW Athletic Injury Survey, Sports Research Building, Penn State University, University Park, PA 16802," indicating what time of day would be most favorable for a return telephone call.

THANKS

The NATA would like to thank Otho Davis and Karl Klein for the initial contributions to the Association Endowment Fund.

NATA ENDORSED PROFESSIONAL ATHLETIC TRAINING PROGRAMS

Dates: December 5, 6 and 7, 1975

Location: Sheraton Boston, 39 Dalton Street, Prudential Center, Boston, Massachusetts (Northeastern University - Host)

Sponsor: John G. Baynes, A.T.C., Head Athletic Trainer, Northeastern University, Boston, Massachusetts 02115

NATIONAL ATHLETIC TRAINERS ASSOCIATION

EDUCATIONAL PROGRAMS LEADING TO PROFESSIONAL CERTIFICATION IN ATHLETIC TRAINING

Programs listed here are approved by the National Athletic Trainers Association. With the exception of one undergraduate program, all are coeducational. For detailed information, write to the program director whose name is given in parenthesis in the listing. Two basic plans of education for athletic training are listed in the following key:
(1) Bachelor's degree level curriculum
(2) Master's degree level curriculum
(3) Accepts male students only

ARIZONA

UNIVERSITY OF ARIZONA (2)
Department of Physical Education
Tucson, Arizona 85721 (Gary Delforge)
ARIZONA STATE UNIVERSITY (1)
Department of Health, Phycial Education & Recreation, Tempe, Arizona 85281 (Troy Young)

CALIFORNIA

CALIFORNIA STATE UNIVERSITY, FULLERTON (1)
Department of Health, Physical Education & Recreation, Fullerton, California 92634 (Jerry Lloyd)
CALIFORNIA STATE UNIVERSITY, LONG BEACH (1)
Department of Physical Education, Long Beach, California 90840 (Dr. Daniel Arnheim)
CALIFORNIA STATE UNIVERSITY, NORTHRIDGE (1)
Department of Physical Education & Athletics, Northridge, California 91324 (Chuck Wolcott)

DELAWARE

UNIVERSITY OF DELAWARE (1)
Department of Physical Education, Newark, Delaware 19711 (Dr. C. Roy Rylander)

ILLINOIS

EASTERN ILLINOIS UNIVERSITY (1)
School of Health, Physical Education &Recreation, Charleston, Illinois 61920 (Dennis Aten)
WESTERN ILLINOIS UNIVERSITY (1)
College of Health, Physical Education & Recreation, Macomb, Illinois 61455 (Roland E. LaRue)

INDIANA

BALL STATE UNIVERSITY (1)
Department of Men's Physical Education, Muncie, Indiana 47306 (Ronald Sendre)
INDIANA UNIVERSITY (1)
School of Health, Physical Education & Recreation, Terre Haute, Indiana 47809 (Robert Young or Sam Newberg)
INDIANA STATE UNIVERSITY (1,2)
School of Health, Physical Education & Recreation, Terre Haute, Indiana 47809 (Mel Blickenstaff)
PURDUE UNIVERSITY (1)
Athletic Department, Mackey Arena, West Lafayette, Indiana 47907 (William E. Newell)

IOWA

UNIVERSITY OF IOWA (1)
Department of Physical Education for Men, Iowa City, Iowa 52240 (Ed Crowley or Dan Foster)

KENTUCKY

EASTERN KENTUCKY UNIVERSITY (1)
School of Health, Physical Education & Recreation, Richmond, Kentucky 40475 (Ken Murray)

LOUISIANA

LOUSIANA STATE UNIVERSITY (1)
Department of Health, Physical Education & Recreation, Baton Rouge, Louisiana 70803 (Marty Broussard)

MASSACHUSETTS

NORTHEASTERN UNIVERSITY (1)
Department of Physical Education, Boston-Bouve College, Boston, Massachusetts 02115 (Kerkor Kassabian)
SPRINGFIELD COLLEGE (1)
Division of Health, Physical Education & Recreation, Springfield, Massachusetts 01109 (Sherrod W. Shaw)

MICHIGAN

CENTRAL MICHIGAN UNIVERSITY (1)
School of Health, Physical Education & Recreation, Mount Pleasant, Michigan 48859 (Kenneth Kopke)

MINNESOTA
MANKATO STATE UNIVERSITY (1)
Physical Education Department, Mankato, Minnesota 56001 (Gordon Graham)

MISSISSIPPI

UNIVERSITY OF SOUTHERN MISSISSIPPI (1)
Department of Athletic Administration &Coaching, Hattiesburg, Mississippi 39401 (Dr. E. L. Harrington)

MONTANA

UNIVERSITY OF MONTANA (1)
Department of Health, Phyical Education & Recreation, Missoula, Montana 59801 (Dr. Walter C. Schwank, Chairman or Naseby Rinehart)

NEW MEXICO

UNIVERSITY OF NEW MEXICO (1)
Department of Health, Physical Education & Recreation, Albuquerque, New Mexico 87131 (L. R. Diehm)

NEW YORK

STATE UNIVERSITY COLLEGE AT CORTLAND (1)
Division of Health, Physical Education & Recreation, Cortland, New York 13045 (John Sciera)

NORTH CAROLINA

APPALACHIAN STATE UNIVERSITY (1)
Department of Health, Physical Education & Recreation, Boone, North Carolina 28607 (Ron Kanoy)
EAST CAROLINA UNIVERSITY (1)
Department of Health, Physical Education, Recreation & Safety, Sports Medicine Division, P.O. Box 3247, Greenville, North Carolina 27834 (Dr. Edgar Hooks, Chairman or Rod Compton)
UNIVERSITY OF NORTH CAROLINA(2)
Department of Physical Education, Chapel Hill, North Carolina 27514 (Dan Hooker)

NORTH DAKOTA

UNIVERSITY OF NORTH DAKOTA (1)
Department of Health, Physical Education & Recreation, Grand Forks, North Dakota 58201 (A. G. Edwards)

OHIO

OHIO UNIVERSITY (1)
Athletic Department, Convocation Center, Athens, Ohio 45701 (Charles Vosler)
TOLEDO UNIVERSITY (1)
Department of Physical Education, Toledo, Ohio 43606 (James D. Nice)

OREGON

OREGON STATE UNIVERSITY (1)
Physical Education Department, Corvallis, Oregon 97331 (Richard F. Irvin)
UNIVERSITY OF OREGON (1,2)
College of Health, Physical Education & Recreation, Eugene, Oregon 97403 (Lou Osternig)
PORTLAND STATE UNIVERSITY (1)
Department of Health & Physical Education, Portland, Oregon 97207 (Leo Marty)

PENNSYLVANIA

EAST STROUDSBURG STATE COLLEGE (1)
Koehler Fieldhouse, East Stroudsburg, Pennsylvania 18301 (Lois E. Wagner or John R. Thatcher)
LOCK HAVEN STATE COLLEGE (1)
School of Health, Physical Education & Recreation, Lock Haven, Pennsylvania 17745 (David Tomasi)
SLIPPERY ROCK STATE COLLEGE (1)
Health Science Department, Slippery Rock, Pennsylvania 16057 (Dr. James R. Pennell)
THE PENNSYLVANIA STATE UNIVERSITY (1)
102 Sports Research Bldg., University Park, Pennsylvania 16802 (Sayers J. Miller)
WEST CHESTER STATE COLLEGE (1)
Physical Education Department, School of Health & Physical Education, West Chester, Pennsylvania 19380 (Phillip Donley)

TEXAS

LAMAR UNIVERSITY (1)
Department of Intercollegiate Athletics, P.O. Box 10066 Lamar Station, Beaumont, Texas 77710 (Paul Zeek)
SOUTHWEST TEXAS STATE UNIVERSITY (1)
Department of Health & Physical Education, San Marcos, Texas 78666 (Dr. Bobby Patton)
STEPHEN F AUSTIN STATE UNIVERSITY (1)
Department of Health and Physical Education for Men, Nacogdoches, Texas 75961 (Joe E. Richardson)
TEXAS CHRISTIAN UNIVERSITY (1,3)
Department of Athletics, Fort Worth, Texas 76129 (Elmer Brown)

UTAH

BRIGHAM YOUNG UNIVERSITY (1)
Department of Physical Education
Provo, Utah 84602 (Marvin Roberson)

WASHINGTON

WASHINGTON STATE UNIVERSITY (1)
Department of Physical Education for Men and Women, Pullman, Washington 99163 (Dr. Roger Wiley, Chairman or Richard Melhart)

WEST VIRGINIA

WEST VIRGINIA UNIVERSITY (1)
Department of Professional Physical Education, Morgantown, West Virginia 26506 (John Spiker) ●

New!

NATA Patch - Emblem

for CERTIFIED ATHLETIC TRAINERS Only!

In Beautiful Full Color!
Red, White, Yellow and Blue!

$ 2.00 Each

Use Handy Order Form Below!

Send Check or
Money Order to:

N.A.T.A.
3315 South Street
Lafayette, Indiana 47904

ORDER FORM

Please send me ____ N.A.T.A. Certified Athletic Trainer patch-emblems at $ 2.00 each. I enclose

$ _____.

Name _____ Certification No. _____

Address _____

City _____ State _____ Zip _____

3 Tools of the Profession from CRAMER

HERE ARE THREE OF NEARLY 100 POPULAR ATHLETIC TRAINING AIDS THAT ARE FORMULATED AND DESIGNED TO KEEP YOUR ATHLETIC TEAMS HEALTHIER.

1

TUF-SKIN®... Protects the skin and supports adhesive tape. Either the original TUF-SKIN or the more recent colorless TUF-SKIN in liquid or spray are most effective training aids. Each of the products contains tannic acid and gums that provide a protective skin coating. Makes your good tape job even better.

2

FLEXIBLE-REUSABLE COLD PACKS... No nonsense cold — ready when you need it. These cold packs are kept chilled in the freezer and transferred to an insulated carrier for court or field emergency treatment. They conform to body contour even at cold temperatures, and can be used over and over. CRAMER FLEXIBLE-REUSABLE COLD PACKS provide real economy and no mess.

3

CRAMERGESIC®... One of the most popular counter-irritant analgesics. It provides warm relaxing rehabilitation for a variety of minor muscular strains and sprains. Used in conjunction with hydrotherapy, it is a standard in injury care. You save time — your training room treatment continues with a CRAMER-GESIC "portable heat pack."

Cramer Products, Inc.

P. O. Box 1001 PH. (913) 884-7511

GARDNER, KANSAS U.S.A. 66030