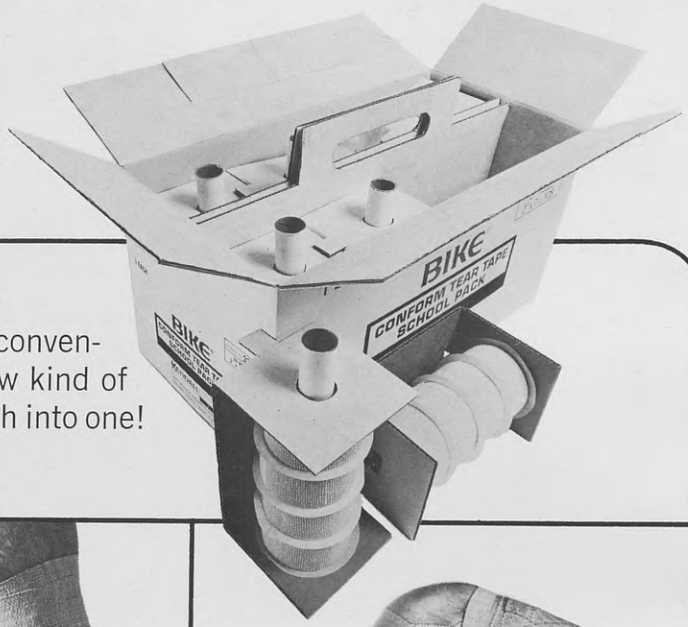
THE JOURNAL OF THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

VOLUME 4 NUMBER 4 WINTER 1969


THIRSTY?
Cramer
TAKE-5
INSTANT SALT DRINK MIX
CITRUS FLAVOR
MAKES 1 GALLON
YOU NEED WATER-SALT-DEXTROSE
DON'T FOOL AROUND...
TAKE-5
Cramer
cramer products inc
PHONE (913) 884-7511 ■ GARDNER, KANSAS 66030


New Bike® Conform Tear Tape.
We could have called it New Bike® Conform Tear Stretch Lightweight Dual Purpose Answer-to-Every-Strapping-Problem Tape.
But it seemed a little long.

# New Bike® Conform Tear Tape.




Not a conventional elastic tape. Not a conventional strapping tape. But a totally new kind of tape that rolls the best properties of both into one!

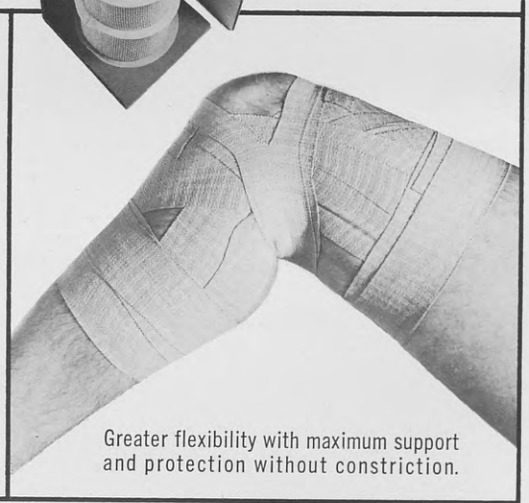
It's a trainer's tape – actually designed, developed, and tested according to the specifications and needs of professional athletic trainers.

New Bike Conform Tear Tape is the first and only dual purpose tape. It stretches like elastic tape but it's lighter weight and more flexible to conform better. Now you can strap an ankle for maximum support and protection, with flexibility and *without* constriction.

This new dual purpose tape is non-constrictive and tears like conventional tape. New Bike Conform Tear Tape rolls off exclusive plastic cores for easy and efficient strapping.

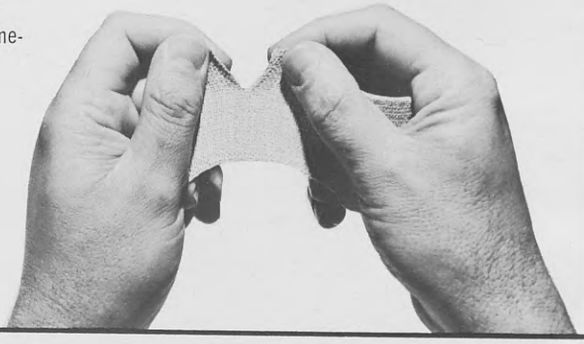
Compare the tapes you've been ordering. Then, whatever your strapping techniques, order a School Pack of new Bike Conform Tear Tape and forget you ever had to compromise.

Lightweight and thin enough for "second skin" conformability.



Greater flexibility with maximum support and protection without constriction.

Tears easily. No need for time-consuming scissors.



KENDALL

BIKE ATHLETIC PRODUCTS DIVISION

specialists in the prevention and care of athletic injuries.

**New Bike Conform Tear Tape**

| Reorder No. | Cut Size | Cuts/Case | Case Quantity | School Price |
|---|---|---|---|---|
| 2715 | 1½" x 7½ yards | 32 | 1 School Pack | $23.05 ea. |
| 3263 | 2" x 7½ yards | 24 | 1 School Pack | 23.05 ea. |
| 6422 | 3" x 7½ yards | 16 | 1 School Pack | 23.05 ea. |

# Gatorade® thirst quencher:

## the St. Louis Cardinals drink it
## the Los Angeles Rams drink it
## the Cleveland Browns drink it
## the Cincinnati Reds drink it
## the Kansas City Chiefs drink it
## the San Diego Chargers drink it

MAIL TO: GATORADE, STOKELY-VAN CAMP,
941 N. MERIDIAN ST., INDIANAPOLIS, INDIANA 46206

JNATA -I

GENTLEMEN: PLEASE SEND ME_____CASES OF GATORADE THIRST QUENCHER AT $24/CASE. (Delivered within Continental U.S.)

(24 foil-sealed instant dry mix packages per case, make 24 gallons of Gatorade.)

NAME OF SCHOOL OR INSTITUTION_____

ATTENTION OF_____

ADDRESS_____

CITY_____STATE_____ZIP_____

INVOICE TO_____

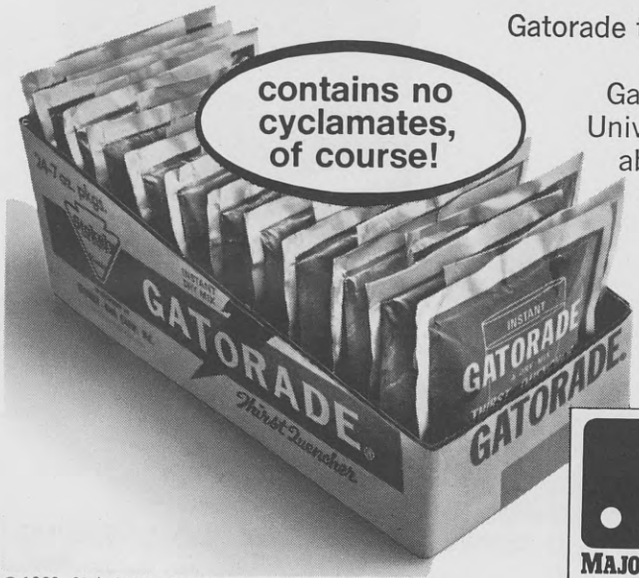
(If same as above, print "Same")

ADDRESS_____

CITY_____STATE_____ZIP_____

(This product is offered for use of recipients only. Not to be re-sold. Acceptance of order evidenced by shipment of merchandise.)

## why don't you drink it?




Gatorade thirst quencher is used by 34 major league baseball and professional football teams. 34 of them!

Gatorade, of course, is the isotonic drink developed at the University of Florida and used first by athletes. The one that's absorbed even faster than water...to quickly replace body fluids lost during physical activity. And it tastes great!

Order now. At only $24 for 24 gallons, why shouldn't your guys drink the thirst quencher of professional teams. The original, research-developed thirst quencher. Nothing else is Gatorade.

MAJOR LEAGUE BASEBALL
1969 ©MAJOR LEAGUE BASEBALL PROMOTION CORP.

NFL

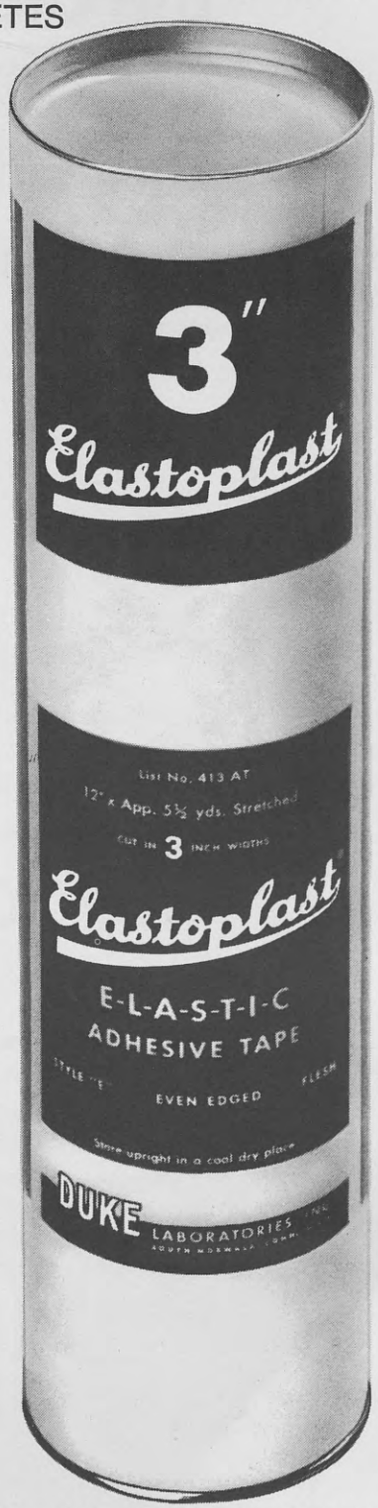
**The thirst quencher of professional teams.**

# for PROTECTION · SUPPORT · COMPRESSION

THE TRAINERS' FIRST CHOICE FOR PRE-GAME AND PRE-PRACTICE STRAPPING
TO HELP AVOID INJURIES TO ATHLETES

## Elastoplast® "A T" ATHLETIC TAPE

THE DEPENDABLE ORIGINAL E-L-A-S-T-I-C ADHESIVE




ELASTOPLAST "AT" Athletic Elastic Adhesive Tape adheres firmly...

Has Superior Stretch—from 3 yards slack to approx. 5½ yards—and unexcelled Contraction . . .

Assures players freedom of action.

**ELASTOPLAST TAPE TUBE PACKING**
12" x 5½ yards (stretched)

Order Numbers:

| | | |
|---|---|---|
| 410-AT | 12 rolls | 1" cut |
| 411-AT | 8 rolls | 1½" cut |
| 412-AT | 6 rolls | 2" cut |
| 413-AT | 4 rolls | 3" cut |
| 414-AT | 3 rolls | 4" cut |

Case lots of 12 tubes of same cut available at institutional discount.

**DUKE LABORATORIES, INC.**
SOUTH NORWALK, CONN., U. S. A.

ELASTOPLAST–MADE IN U.S.A.–THE ORIGINAL E-L-A-S-T-I-C ADHESIVE TAPE AND UNIT DRESSINGS

THE JOURNAL OF THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

VOLUME 4 NUMBER 4 WINTER 1969

## CONTENTS

A Brief Evaluation of Certain Athletic Dietary Practices—*Clint Thompson* ..... 6

The Rationale of Ice Theory—*Donald A. Chu and C. J. Lutt* ..... 8

The Knee In Sports — Book Review ..... 9

The Incidence of Knee Injuries in Relation to Ankle Taping—*John Wells* .....10

Treatment of Sprained Ankles—*Chris Patrick* .....14

Bits And Pieces—*Clyde Stretch* ..... 16

Certification Examination now in Preparation with the PES—*J. Lindsy McLean*.....18

National Notes—*Jack Rockwell* ..... 19

Recent Athletic Training Literature ..... 22

Statement of Ownership ..... 22

## DIRECTORS AND SECRETARIES



*The Journal* of the National Athletic Trainers Association is published quarterly at 3315 South St., Lafayette, Indiana 47904. Subscription charge to members: $1.00 per year.

Editor: MARVIN ROBERSON. Assistant Editor: CLYDE STRETCH, Michigan State University.

Advertising Manager: ELLIS MURPHY, 600 S. Michigan Avenue, Chicago, Illinois 60605.

Second class postage paid at Lafayette, Indiana 47904.

All communications concerning editorial matter in *The Journal* should be directed to Marvin Roberson, 165 Smith Field House, Brigham Young University, Provo, Utah 84601.



The *NATA Journal* editors welcome the submission of articles which may be of interest to persons engaged in or concerned with the progress of the athletic training profession. The following suggestions are offered to those submitting articles for consideration:

1. All manuscripts should be typewritten, double-spaced, on ordinary typing paper, 1500-2000 words.

2. When references are made to other published works the list of references should be in the following order: books; author, title, publisher with city and state of publication, year, page.—articles: family names and initials of all authors, title of article, journal title abbreviated as listed in the latest edition of List of Journals Indexed in Index Medicus, volume, inclusive pages, year.

3. Photographs must be black-and-white prints, preferably on glossy paper. Graphs, charts, or figures should be clearly drawn on white paper, in a form which will be readable when reduced for publication.

4. It is the understanding of *the Journal* editors that any manuscripts submitted will not have been published previously.

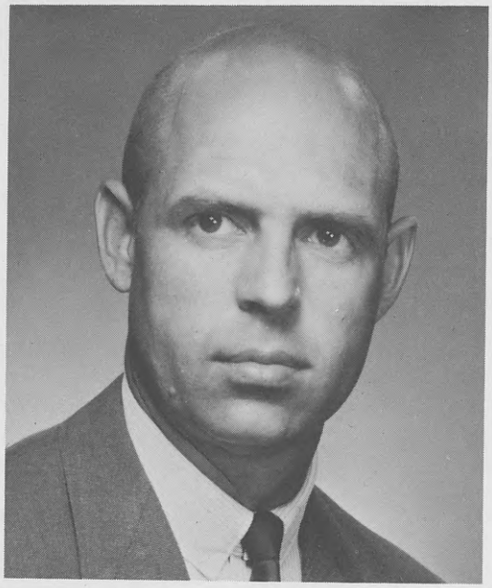
5. An author's biographical data sheet should be sent with the submission.

Unused manuscripts will be returned when accompanied by a stamped, self-addressed envelope. Please address contributions to the Editor.

# A Brief Evaluation of Certain Athletic Dietary Practices

by Clint Thompson
Assistant Athletic Trainer
Michigan State University

The standard recommendation for the athlete with regards to nutrition has been that he should "follow a balanced diet" (10). The intake of the 'proper' percentage of fats, carbohydrates, proteins, vitamins, minerals, etc., to maintain a healthy existence has been examined and established (5). Exceptions to the standard balanced diet in special situations are not out of the ordinary. Perhaps certain athletes can be categorized, according to their particular activity, as special situations. Can a controlled deviation from the balanced diet result in better athletic performance?



Just how contributory nutrition is to quality athletic performance is hard to evaluate on the one hand and more easily discernable on the other. One may readily understand certain aspects of the poor performance of an athlete who is improperly nourished and can fairly quickly rectify the problem with obvious results through proper nourishment. But, on the other hand, it seems very difficult to enhance, at least obviously, through nutrition, the performance of an athlete who makes a well balanced diet a part of his training routine. Can performance be helped through special nutritional practices? The author contends that perhaps that level of performance, which is modified by nutrition, can be maintained at a high level through special nutritional practices.

Many fads and fallacies prevail when the subject of nutrition of the athlete is discussed. Generally it can be stated that the athlete should eat what **he** knows best will agree with him and satisfy his particular energy needs for his event or events. The only problem with leaving the decision to the athlete is that few athletes know what is best to satisfy their needs in most situations.

It has been found that the meal eaten just after strenuous exertion, whether it be a hard practice session or competition, would most benefit the athlete if the meal were rich in carbohydrates (1)(3)(9). Energy depletion in those muscles mainly used during exertion is replenished through the carbohydrates while the muscles less used are virtually unaffected. "A fat-protein diet following exercise, on the other hand, produces a slow incomplete replacement of glycogen, (fuel for muscular energy), in the muscle. If carbohydrate is given without previous exercise, only a mild increase in muscle glycogen occurs" (7).

For the athlete in training, one that has daily strenuous exertion, the indication is that a predominantly carbohydrate diet is needed to quickly resynthesize the energy producing glycogen needed for maintenance of a high level of energy expenditure for repeated daily practices (2). This is particularly true when the strenuous exercise is intermittent, i.e., interval training, when energy stores can be depleted (2)(4).

## DIET COMPOSITION

A carbohydrate-rich diet, as refered to here, is composed of about 5% fats and 5% proteins, leaving approximately 90% carbohydrates (2). The normal percentage of carbohydrates in the balanced diet is 48% (5). If muscular exertion is particularly strenuous, the overload type which produces an increased muscle mass, some suggest an increase of 20% in protein intake (8).

Combining these thoughts, the diet of an athlete in rigorous training might be composed of 70% carbohydrates, 25% protein and 5% fats. An athlete training mainly for an endurance event, i.e., a distance run might stay on the high

side of 70% carbohydrates whereas a wrestler who combines strength and endurance would stay fairly close to the 70-25-5% distribution. Regardless of the decision made on dieting practices, care must be taken to insure a proper intake of vitamins and minerals. The selection of green vegetables, fruits, etc., can accommodate this need. No attempt will be made here to evaluate the dietary supplements, (wheat germ, etc.), promoted for use in strength and endurance activities.

A few rules should be adhered to with respect to the pre-event meal. The meal should be eaten at least 3 to 4 hours before activity but not more than 7 hours before competing (11). "The important pre-event period for endurance events begins about 48 hours before the event; for short term events diet at this time will modify performance little, if at all" (6). "Too often trainers and coaches concern themselves principally with the meal immediately preceding competition and do not realize that pre-event nutrition begins quite some time before that" (10).

The stomach should be comparatively empty at event time. The pre-event meal should consist of nutritious foods that leave the stomach fairly rapidly such as soups, fruit juices, cereals, bread, lean meat, puddings and candies. Do not include in the meal anything that would lead to gas forming and stomach distress in any way or foods that are unfamiliar to the athlete.

## REDUCE FLUIDS

Drinking large amounts of water or other beverages before or during a meal tends to delay digestion. Fluids dilute stomach acids and convert foods to a semi-liquid state which hastens the passage of food from the stomach (11) thereby denying the stomach the chance to totally break down the food for fastest absorption in the intestine.

As was mentioned, carbohydrate intake should be significantly increased during the pre-contest period. Breads, cereals, potatoes, and sugars should be the rule (10). When carbohydrate, fats and proteins are readily made available for metabolism, the carbohydrates are used first for supplying energy for muscular work. As the carbohydrates are used up the body turns to the fats for energy. Fat provides a slightly less efficient energy than does carbohydrate. In other words, less work energy is derived from a unit of fat than from the same amount of carbohydrate when used as fuel for muscular exertion (12).

As for meats, digestion and metabolism of protein leaves a residue of acid in muscle which can only be excreted by the kidneys. Since effective function of the kidneys ceases during exercise the athlete who eats steak, eggs, or other protein foods before a contest is more apt to be susceptible to acidosis, cramps and fatigue. Acid produced by metabolized carbohydrates and fats is primarily in the form of carbon dioxide, which is blown off by the lungs and excreted by the skin (6).

Since fats are somewhat more difficult to digest than either protein or carbohydrates and since they often prove to be quite irritating to the digestive tract, their inclusion in the pre-event meal should be sharply reduced (10). Milk, because of its high fat content, falls into this category and should be limited to perhaps one glass during the meal. Obviously falling into this category are the fried foods which should be eliminated completely from the meal. The secret to the pre-event meal is **moderation,** there is always time after the meet to satisfy the inner soul.

## BIBLIOGRAPHY


1. Ahlborg, B. and others. "Muscle glycogen and muscle electrolytes during prolonged physicial exercise." *ACTA Physiol Scand,* 70:129, 1967.
2. Ahlborg, B. and others. "Human muscle glycogen content and capacity for prolonged exercise after different diets." *FORSVARSMEDICIN,* 3:85, 1967.
3. Bergstrom, J. and Hultman, E. "Muscle glycogen synthesis after exercise: An enhansing factor localized to the muscle cells in man." *Nature,* 210:309, 1966.
4. Bergstrom, J. and Hultman, E. "A Study of the glycogen metabolism during exercise in man." *Scand. J. Clin. and Lab Invest,* 19:218, June, 1967.
5. Best, C. H. and Taylor, N. B. "The Physiological Basis of Medical Practice." *Baltimore: Williams and Wilkins Co.,* 1955.
6. Cooper, D. L. "Nutrition in Athletics." *Medicine In Sports,* Rystan Newsletter, Volume 5, Number 4, July, 1965.
7. Costill, D. L. "What Research tells the Coach about Distance Running." *American Association of Health, Physical Education and Recreation,* 1968.
8. De Vries, H. A. "Physiology of Exercise for Physical Education and Athletics." *Dubuque, Iowa: W. C. Brown Co.,* 1966.
9. Hultman, E. and Bergstrom, J. "Muscle glycogen synthesis in relation to diet studied in normal subjects." *ACTA Med Scand,* Supplement, 1967.
10. Klafs, C. E. and Arnheim, D. D. "Modern Principles of Athletic Training." St. Louis: C. V. Mosby Co., 1965.
11. Morehouse, L. E. and Rasch, P. J. "Sports Medicine for Trainers." Philadelphia: W. B. Saunders, Co., 2nd Edition, 1963.
12. Van Itallie, T. B., Sinisterra, L. and Stare, F. J. "Science and Medicine of Exercise and Sports." Warren Johnson, Editor. New York: Harper and Brothers, 1960.

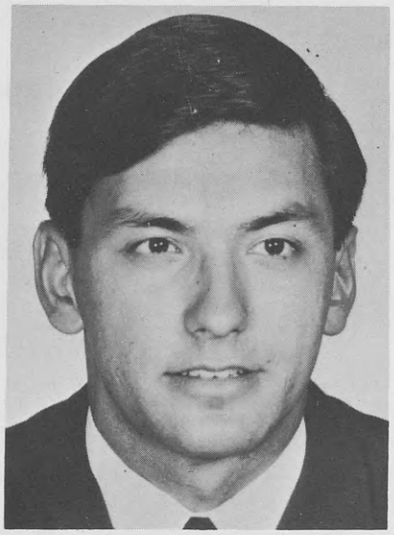
# The Rationale of Ice Therapy

by Donald A. Chu, R.P.T. Athletic Therapist and
C. J. Lutt, M.D. Team Physician, Cal-State, Hayward, Calif.

Many physicians, trainers, and coaches are turning to the use of ice in treating injuries. This use of ice is more than a cursory immersion to minimize swelling; in the case of muscle strains, ice is often used throughout the treatment cycle.

The first question that comes to mind in the heat vs. cold debate, is in regards to the physiological effects of cold. Exactly what effect ice has on the human body has been documented by several researchers.(1)(2)(3)(4)(5)

Probably the most important effect of ice is to break up the "pain reflex cycle" by reducing the spasticity of a muscle when it is injured. Damage to tissue and cells results in the release of two chemicals, **histamine** and **bradykinin,** which are known to stimulate pain receptors in the body. (3) This pain results in spasm which increases the tension of a muscle and shuts off blood flow to the part, temporarily resulting in a viscious cycle of pain—spasm—increased pain — increased spasm. This spasticity is a purely reflex action of which the conscious mind has no control. Ice breaks this cycle through a reduction of the nervous reflex activity (1)(2)(4), and its other effects on living tissue.

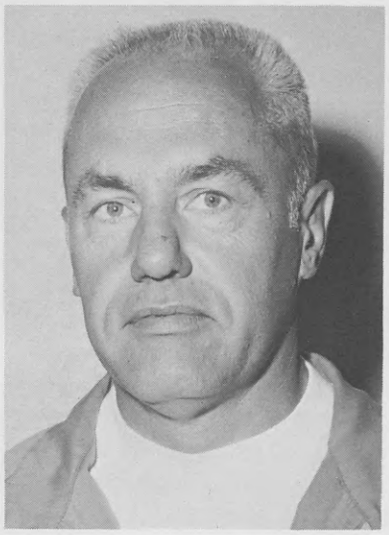


DONALD A. CHU, RPT

Contrary to popular belief, ice will **increase** circulation. This is an interesting idea but we must look closer to find out exactly what is meant. The circulatory system of the skin is that which is primarily affected. When ice is rubbed over the skin a redness appears. This redness, known as erythema, is visual evidence that blood flow has increased and is caused by local spinal cord reflexes that affect blood flow in an attempt to maintain normal body temperature. (3)

Bing (1), et. al. and Clarke (2), et. al. found an actual rise in muscle temperature (.9 - 1.8° F.) during the first three to four minutes cooling. At five minutes there was a gradual return to precooling temperatures. Several investigators (1)(2)(4) found that at ten minutes there is a decided drop off in muscle temperature. These findings might be taken as a reflection of the blood flow through the muscle. If this is so, any initial vasoconstriction from the initial shock of cold is followed by a period of vasodilitation. With longer applications of ice blood flow is again constricted.

The third asset of ice in treating injuries is a numbing of the pain sensation. Through the influence of cold, sensory nerve endings are made to respond, or transmit less. (3) Therefore, the athlete is temporarily relieved of the pain involved with his injury.



C. J. LUTT, MD

## ICE APPLICATION

The next questions that come to mind are the "hows" of applying ice and the length of time of application. This depends mainly on the status of the injury. If the injury is an initial one and the purpose of treatment is to control swelling by constricting blood and lymph flow, a longer period of treatment is obviously desired.

One example would be the sprained ankle, which can be treated by immersion in ice water to at least mid-calf depth for a period of 10-20 minutes. This may be accomplished by using a whirlpool or any container suitable for comfortably holding the foot.

Immersion techniques are quite suitable for extremities. However, ice massage is a popular form of treatment for flatter areas of the body such as the low back, shoulder, quadriceps and hamstrings areas. Ice massage is more localized

and not as uniform in its cooling so that the treatment time is usually extended to 20-30 minutes.

Water may be conveniently frozen in 8 oz. paper cups and kept in the freezer section of a refrigerator. The 8 oz. block covers a fairly large area and is easy to hold.

A note of caution should be made here. The danger of freezing tissue resulting in frostbite exists if the ice is left directly and continuously on the part. Often an ice pack is made by putting crushed or chipped ice in a towel and attaching it to the part with tape or an elastic wrap. The pack should be shifted and the extremity checked every two minutes to insure an even and safe cooling.

We treat an athlete a minimum of twice a day and prefer to have him treated three times. Since ice therapy is relatively simple many of our athletes treat themselves twice at home—after practice and before bed. This not only is beneficial but places some responsibility on the athlete to "help himself" re-acquire his health.

How long do we keep up the 20 minute treatments? Until we are sure the danger of internal bleeding is gone. This period will vary with the extent of the injury. A mild bruise might take a maximum of 24 hours as opposed to a very severe contusion which could take as long, depending on the amount of capillary oozing, as 72-86 hours.

After this period, the treatment time is reduced to 5-7 minutes. At least 3-5 minutes (4)(5) is needed to produce a relaxation of the muscles. This is also enough time for vasodilitation to occur and treatment ends before the second vasoconstriction period begins.

Again, we would like to see an athlete treated 3-5 times daily. We will ask our athletes to ice themselves for 5-7 minutes, wait an hour, repeat the treatment, wait another hour, and repeat the icing procedure once more at home. They can usually be treated twice in the training room before practice.

Injuries may be treated throughout their entire course of recovery with ice. However, when a plateau of recovery is reached and another modality is indicated we will turn to Ultrasound. The limitations of infra-red lamps, hot packs, etc., indicate they often do not penetrate deeply enough to reach the areas where heat is truly needed. When properly employed, Ultrasound can be a valuable adjunct to ice therapy.

In summary, we would reflect on the use of ice as a therapeutic modality. Ice: (1) breaks up the pain reflex cycle, (2) periods of vasodilitation do occur with ice application, and (3) pain is temporarily relieved through its numbing action.

The methods of applying ice as a modality via whirlpool or container, ice packs, and ice frozen in paper cups have been discussed, and examples of the treatment plans used by the team physician and athletic therapist of Cal-State, Hayward, have been given.

Ice can be an effective modality, but when you prescribe any treatment you must scientifically understand and be ready to defend your methods. Otherwise, you run the risk of being severely embarrassed by the simple question, "Why?".

### LIST OF REFERENCES


1. Bing, A. I., A. Carlsten, and S. Christiansen. "The effect on muscular temperature produced by cooling normal and ultraviolet radiated skin." *Acta Medica Scand.* 121: 577-591, 1945.
2. Clarke, R. S., R. F. Hellon, and A. R. Lind. "Vascular reactions of the human forearm to cold." *Clin. Sci.* 17: 165-179, 1958.
3. Guyton, Arthur C., M. D. *Textbook of Medical Physiology*. Philadelphia: W. B. Saunders Company, Third Edition, 1966.
4. Hartviksen, K. "Ice therapy in spasticity." *Acta Neurol. Scand.* 38 Suppl., 3:79-84, 1962.
5. Levine, M. G., H. Kabot, M. Knott and D. E. Voss. "Effects of cooling on the triceps surae reflex." *American J. of Phys. Med.*, 41:240-251, 1962.


# The Knee in Sports

Authors: Karl K. Klein and Fred L. Allman, Jr.

This book contains 148 pages plus a selected bibliography of books and periodicals relating to the knee. The contents deal with treatment of the problem of knee injury in sports, and the role of specific conditioning exercises for both the preventive and rehabilitation therapy. The material is directed particularly to the athletic team physician, trainer, coach, and physical education personnel, and many chapters are devoted to the anatomy of knee stability, conditioning for muscle strength, rehabilitation through progressive exercise and research related to problems of the knee.

Numerous illustrations are included for demonstration of specific exercise procedures and planned sample exercise programs are included to illustrate exercise progressions.

The preface for the book was prepared by Dr. Don O'Donoghue, outstanding orthopedist in the field of Sports Medicine.

*Published by The Pemberton Press, Austin, Texas (1969). Price is $6.50.*

# The Incidence of Knee Injuries in Relation to Ankle Taping

by
John Wells, R.P.T.
Chief Physical Therapist, Student Health
Center, Indiana University

The problem in this investigation was to study the incidence of knee injuries in relation to ankle taping, the hypothesis being that taping the ankle increases the incidence of knee injuries.

## DEFINITIONS

**Knee Injury.** Any injury occurring in the area of the knee joint which resulted in the boy missing practice or a game for 24 hours following the incident.

**Ankle Taped.** This referred to the use of adhesive tape alone and not in combination with the fiber ankle wrap.

**Class.** This refers to the taping procedure for the school and not to academic standing. Question 3 of the mail questionnaire listed five lettered answers. The class of the school is based on their answer.

## DELIMITATIONS

The data for the primary evaluations were limited to the 1968 football season for Indiana University and Butler University. Indiana University taped an average of 150 ankles per day and Butler University taped an average of 11 ankles per day. This was to determine if schools taping more ankles incurred proportionally more knee injuries. Additional data were gathered by mail questionnaire from the members of the Indiana Collegiate Conference, the Mid American Conference, and the Big Ten Conference. The total number of schools reporting was 20.

## REVIEW OF RELATED LITERATURE

The question of ankle taping in relation to knee injuries has not been mentioned frequently in the literature. Doller was the first to write on the subject in 1956. He stated:

> *The ankle joint, being very susceptible to injury, is commonly strapped: and if improperly applied, the strapping can interfere with knee action. Whenever the improperly taped ankle joint cannot synchronize with the knee in carrying out its motion, the knee joint will bear an undue strain and become highly susceptible to injury. . . . The overly tight or constricting strapping might well be the factor leading to a knee injury.*[1]

In 1959 Slocum discussed the subject along with other causes of football injuries. His findings were that the restrictions of ankle movement by the ankle being taped would throw strain on the knee, but he felt that the well trained athlete would be able to compensate for this added strain with stronger thigh musculature.[2]

The most recent writing was by Dr. Albert B. Ferguson, M.D., Chairman of the Department of Orthopedic Surgery at the University of Pittsburgh School of Medicine.

> *Actually taping is harmful because it restricts inversion-eversion of the subtalar joint, which acts as the safety valve for the knee when the shoe cleats are stuck firmly in the ground.*[3]

Whether ankle taping is a factor in knee injuries is a controversial matter. This study was undertaken to attempt to answer that question.

## ANALYSIS

The 20 participating schools were placed in rank order from the most knee injuries to the least knee injuries for Table 1.

According to the original hypothesis of this investigation the Class A schools should have clustered at the top of the ranking and the Class C schools should have been at the bottom of the ranking. Table 1 reveals that this is not the case;

**TABLE 1.**
**Rank Order of Participating Schools with the Number of Knee Injuries and Class of School**

| School | Number of Knee Injuries | Rank | Class |
|---|---|---|---|
| Ball State University | 13 | 1 | C |
| Purdue University | 11 | 2 | A |
| Depauw University | 9 | 4 | A |
| Indiana University | 9 | 4 | A |
| Miami University | 9 | 4 | A |
| University of Evansville | 7 | 6 | C |
| Indiana State University | 6 | 8 | A |
| Kent State University | 6 | 8 | A |
| Western Michigan University | 6 | 8 | C |
| Butler University | 5 | 11.5 | C |
| University of Dayton | 5 | 11.5 | B |
| University of Illinois | 5 | 11.5 | A |
| University of Michigan | 5 | 11.5 | C |
| University of Iowa | 4 | 14.5 | A |
| University of Toledo | 4 | 14.5 | A |
| Bowling Green State University | 3 | 17 | A |
| Ohio University | 3 | 17 | A |
| Valparaiso University | 3 | 17 | A |
| University of Cincinnati | 2 | 19.5 | A |
| Ohio State University | 2 | 19.5 | A |

the top school being a Class C with 13 knee injuries and the bottom school is a Class A with only two knee injuries. The class A schools do dominate the upper 10, but only on the basis of six to four, or 60 per cent. In the lower 10 the Class A schools have eight, Class B one, and Class C one. Combining Class A and B they hold 90 per cent of the lower rank as opposed to the Class C with 10 per cent. There are four Class C schools in the upper 10 while there is only one Class C school in the lower 10. The simple frequency distribution of knee injuries is presented in Table 2.

**TABLE 2.**
**Simple Frequency Distribution of Knee Injuries by Number of Injuries Reported per School**

| *X* | *f* | *cf* | *cfm* | *Pr* |
|---|---|---|---|---|
| 13 | 1 | 20 | 19 | 95 |
| 11 | 1 | 19 | 18.5 | 92.5 |
| 9 | 3 | 18 | 16 | 80 |
| 7 | 1 | 15 | 14.5 | 72.5 |
| 6 | 3 | 14 | 12.5 | 62.5 |
| 5 | 4 | 11 | 9 | 45 |
| 4 | 2 | 7 | 6 | 30 |
| 3 | 3 | 5 | 3.5 | 16.5 |
| 2 | 2 | 2 | 1 | 5 |

From Table 2 the mean was computed to be 5.85 and the standard deviation was 2.49.

A comparison of Class A and B schools against Class C schools for the number of knee injuries per school is presented in Table 3.

From Table 3 the 15 Class A and B schools had 81 knee injuries or an average of 5.4 knee injuries per school. The five Class C schools had 36 knee injuries or an average of 7.2 knee injuries per school. This again contradicts the original hypothesis of this investigation that there would be more knee injuries per school when every player was required to have his ankles taped.

**TABLE 3.**
**Comparison of the Number of Knee Injuries for Class A and B Schools versus Class C Schools**

| Number of Knee Injuries | Number of Class A and B Schools | Number of Class C Schools | Total Number of Knee Injuries |
|---|---|---|---|
| 13 | | 1 | 13 |
| 11 | 1 | | 11 |
| 9 | 3 | | 27 |
| 7 | | 1 | 7 |
| 6 | 2 | 1 | 18 |
| 5 | 2 | 2 | 20 |
| 4 | 2 | | 8 |
| 3 | 3 | | 9 |
| 2 | 2 | | 4 |
| Total | 81 | 36 | 117 |

Table 4 was constructed to show the number of knee injuries with the ankle taped as opposed to those knee injuries without the ankle taped. The 20 participating schools reported a total of 75 knee injuries with the ankle taped. That was an average of 3.75 knee injuries per school. Of the 20 schools only 13 reported a total of 42 knee injuries without the ankle being taped for an average of 3.25 knee injuries per school. The difference of .50 knee injuries per school was large, but appeared to have no practical significance.

**TABLE 4.**
**Knee Injuries with the Ankle taped versus Knee Injuries without the Ankle taped**

| School | Knee Injuries With Ankle Taped Wrapped | Knee Injuries Without Ankle Taped or Wrapped |
|---|---|---|
| Ball State University | 4 | 9 |
| Bowling Green State U. | 2 | 1 |
| Butler University | 2 | 3 |
| University of Cincinnati | 1 | 1 |
| University of Dayton | 3 | 2 |
| Depauw University | 4 | 5 |
| University of Evansville | 2 | 5 |
| University of Illinois | 5 | 0 |
| Indiana State University | 6 | 0 |
| Indiana University | 6 | 3 |
| University of Iowa | 3 | 1 |
| Kent State University | 5 | 1 |
| Miami University | 9 | 0 |
| University of Michigan | 2 | 3 |
| Ohio State University | 2 | 0 |
| Ohio University | 3 | 0 |
| Purdue University | 11 | 0 |
| University of Toledo | 1 | 3 |
| Valparaiso University | 3 | 0 |
| Western Michigan U. | 1 | 5 |
| Total | 75 | 42 |

By calculation Indiana University had a total of 11,098 ankles taped for the 1968 football season with nine knee injuries reported. This gave an average of one knee injury per 1,233.1 ankles taped. Butler University had 962 ankles taped and reported five knee injuries for an average of one knee injury per 192.4 ankles taped.

Table 5 was constructed to show any significant factor by conference.

**TABLE 5.**
**Comparison of Knee Injuries by Conferences**

| Conference | No. of Schools Reporting | No. of Knee Injuries With Ankle Taped | Average | No. of Schools Reporting | No. of Knee Injuries Without Ankle Taped | Average |
|---|---|---|---|---|---|---|
| Big Ten | 6 | 29 | 4.83 | 3 | 7 | 2.3 |
| Mid American | 8 | 25 | 3.125 | 6 | 13 | 2.16 |
| Independent | 2 | 10 | 5 | 1 | 9 | 9 |
| Indiana Collegiate | 4 | 16 | 4 | 2 | 8 | 4 |

The Big Ten Conference showed a marked difference with 2.53 more knee injuries per school when the ankle was taped than when the ankle was not taped. The Mid American Conference had a difference of .965 more knee injuries per school when the ankle was taped than when the ankle was not taped. The Indiana Collegiate Conference had no difference between the ankle being taped and the ankle not being taped.

## CASE STUDIES

The medical records and x-rays of the injured players at Indiana University and Butler University were reviewed by this author to determine any pre-existing conditions which might have been responsible for, or contribute to, the knee injury the boy suffered. Of the 14 cases studied only four proved to have a significant history.

**Case I.** In 1966 this boy showed x-ray evidence of Osgood Schlatters Disease with a loose right tibial tubercle. On September 22, 1966, he experienced a right ankle sprain. During the spring practice on April 22, 1967 he suffered an injury to the left knee involving the medial ligament and the medial semilunar cartilage. He was hospitalized, splinted, and casted, but no surgery was performed. On September 21, 1968, he experienced the knee injury involved in this study. This injury was to the right medial ligament. Surgery was performed this time. Here is the case of a boy with a history of right lower extremity injuries and disease. The injured left leg may have caused the boy to shift to the right throwing an added strain on the right leg. The boy did have his ankle taped at the time of injury.

**Case II.** This boy had a history of a broken left leg and a left ankle sprain before coming to college. On September 11, 1968, he suffered a contusion of the left quadriceps. X-rays on September 20, 1968, revealed soft tissue injury, and while no ossification occurred in the anterior aspect, there was a suspicious density in the posterior compartment. The boy was not able to return to practice until September 28, 1968. The leg was padded, but the leg was not completely insensitive to pain on contact. On November 9, 1968, this boy suffered an injury to the left medial ligament. Here was a case where there was early evidence of injury before his college career. The thigh contusion may also have alienated the quadriceps muscles and the hamstring muscles, consequently reducing their ability to stabilize the knee. His ankle was taped at the time of injury.

**Case III.** On his x-rays from 1967 which were stress films, the frontal view showed the left knee with a lucency within the joint space which was thought to be the result of a vacuum created within the joint. This vacuum could be created because of the instability of the knee. X-rays on February 14, 1968, showed Traumatic Arthritis in the left ankle from previous injuries. He sustained an injury to the left medial ligament and the left semilunar meniscus. Was the instability of the knee as demonstrated on stress x-rays still present at the time of the knee injury? His ankle was taped at the time of the injury.

**Case IV.** This boy underwent surgery on December 11, 1965, for repair of the right medial ligament. On May 5, 1967, he sustained a ligament tear in the right ankle that required a cast. His physical examination of August 28, 1968, carried the recommendation from the examining physician for quadriceps and ankle exercises bilaterally. The boy was placed on an exercise program, but was not entirely faithful in carrying it out. He sustained a left knee injury on November 2, 1968. The left leg may have been weak enough to fail to give support to the knee. The strain thrown on the left leg because of the injuries on the right side may have increased chances of injury. His ankle was taped at the time of the injury. This game was being played on Astro-turf which is supposed to reduce serious injuries.

## SUMMARY

If the original hypothesis of this investigation had been demonstrated, the Class A and B schools would have dominated the upper half of the rank order and the Class C schools would have dominated the lower half of the rank order. This was not the case as the number one school was a Class C school and the last seven schools were Class A. Therefore, it must be concluded that the rank order does not support the original hypothesis.

The most common score of five was shared by two Class A schools and two Class C schools. Actually, this should have been one Class A and one Class B school, but since the University of Dayton was the only Class B school of the 20 it was considered with the Class A in this discussion. If the original hypothesis had held true the most common score should have been dominated by Class A schools. The mode does not support the hypothesis.

There were two Class C schools below the mean of 5.85 and three Class C schools above the mean. This would have to be reversed to support the original hypothesis.

The difference of .50 more knee injuries per school with the ankle taped than without the ankle taped is not markedly significant when considered by itself. However, if a coach could look back over the season and select one of his knee injuries that he would have liked to have prevented, this could make a difference in the season record.

When the conference comparison is first considered, the higher the caliber of competition seems to indicate more knee injuries with the ankle taped. The results do show that these schools do experience 2.55 more knee injuries per school with the ankle taped than without the ankle taped, but there are other factors to consider here. Five out of the six Big Ten schools reporting indicated Class A. Therefore, they would naturally have more ankles taped and consequently more knee injuries with the ankle taped than without the ankle taped.

The four case histories presented show how other factors may enter into the possible knee injury. The well trained athlete with strong thigh musculature can normally compensate for the added strain thrown on the knee when the ankle is taped. When there is a history of a predisposing cause, the ankle taping may just be the added strain to permit the knee injury to occur.

## CONCLUSION

The general conclusion that must be reached from the evidence presented in this study is that there is no general indication of a marked increase in knee injuries due to ankle taping. However, under certain predisposing factors, the taped ankle may be one of the causes of the knee injury.

## RECOMMENDATIONS

**1.** There is no need to discontinue the practice of preventive ankle taping because of the fear of possible knee injuries. However, further investigation is recommended into the question of whether ankle taping is really necessary in the prevention of ankle injuries.

**2.** In the event any possible predisposing cause for a knee injury is detected during the annual physical examination, the examining physician, the Trainer, and the coach should agree that the ankle not be taped.

## BIBLIOGRAPHY


Doller, Joseph, "Reducing Knee Injuries by Proper Ankle Strapping," *Scholastic Coach* 25:40-41, May, 1956.

Ferguson, Albert B., "Taping of Ankles in Football Generally Useless, MD Says," *Hospital Tribune,* Hospital Tribune Inc. New York, New York, p. 21, January 27, 1969.

Slocum, Donald B., "The Mechanics of Common Football Injuries," *Journal of the American Medical Association* 170:88-94, August 1, 1959.



# Jay Colville Retires

*The Journal wants to congratulate Jay Colville upon his retirement from Miami University (Ohio), and 45 years as an athletic trainer. We hope he will be able to tear himself away from his hunting and fishing long enough to be with us each June at our annual meeting.*

# Treatment of Sprained Ankles

by Chris Patrick, Football Trainer
University of Kentucky

Ankle injuries have created problems for athletic personnel since athletics began. One of the most common injuries to confront these people is the sprained ankle.

Here at the University of Kentucky, we have added a new wrinkle to our method of treating ankle sprains and our results have been surprisingly good!

We wrap the players who have no ankle injury history while we tape only those athletes with a history of injured ankles. The same procedure is used for both game and practice. Our reasons for so doing are:

**1.** We feel that taping the ankle puts stress on the knee and makes the knee more susceptible to injury.

**2.** The wraps give some support to the ankle but more than anything else they aid in giving compression in the event an ankle injury does occur.

**3.** We do not change our procedure at game time because we spend more time in practice sessions than in games and the percentages tell us the player is more apt to injure the ankle at practice. Also, there are enough mental and physical changes for the participant on game day without changing him from wraps to tape.

Ankle sprains can be placed in three categories:

**1.** Mild—Little or no swelling with some tenderness in the area of the malleolus; we must assume the ligaments are stretched rather than torn.

**2.** Moderate—There will be stretching of ligaments and possibly torn ligaments. A collection of blood and synonial fluid will be present in the joint. Also, we must assume we have damage to the joint capsule. Some people further break down this group to read as mild-moderate, moderate-moderate, or moderate-severe.

**3.** Severe—We must assume that a ligament or ligaments are torn and that we have damage to the capsule and other soft tissues in the area. There will be much swelling and complete loss of function. Usually a fracture is not as painful as a severe sprain. Surgery is often necessary with the severe sprain.

There will be a variance among individuals and among the ways the ankle sprain is treated as to how long the athlete will be unable to participate. However, generally speaking, the medical books tell us we should normally expect the participant to miss from one to three days as a result of the mild sprain, four to ten days with a moderate sprain, and ten to twenty-one days when the sprain is severe.

Regardless of the type sprain after thorough examination on the field, the immediate treatment is the same: 1. Compression, 2. Ice, 3. Exercise, and 4. Elevation. However, if you feel there is **any** question about the ankle, X-ray as soon as possible.

These four steps are the procedures followed to control the swelling and pain. With injury, bleeding occurs in the area and causes pain by creating internal pressure. Thus, we have found that by the use of compression, ice, exercise, and elevation the return to participation comes at a more rapid rate.

## TREATMENT OF SPRAINS

**Compression** to some degree is already present because as I stated earlier, all our football players are either wrapped or taped. For further compression, we remove the shoe and place a sheet of pre-cut sponge rubber on each side of the ankle. A hole is cut in each sponge sheet in order that the lateral and medial malleolus bones are allowed to protrude, thus giving us a better fit for more compression. We then secure the sponge in place by wrapping with an elastic wrap.

**Ice** submersion is our next step. On our prac-

tice field with our training supplies, we keep a large plastic container, of about eighteen inches depth, filled with ice and water (mostly ice). The purpose of this container is for submersion of the injured ankle. The compression wrap has been secured, now the ankle is submerged in the ice container until the ankle reaches the point of numbness.

At this point, we go to our next stage—**exercise.** The athlete is asked to begin full weight bearing on the injured ankle and walk. In the beginning, the injured player takes short steps making certain the foot is pointed forward and flexion and extension are properly done. As soon as the player experiences pain we again submerge the foot and ankle in ice almost up to his knee and allow it to remain there until numbness reappears. We continue this cycle of cold and exercise for several hours. In most instances of mild or moderate-moderate sprains, the athlete has been able to run at a jogging pace at the end of the day the injury occurred.

After practice the youngster takes his shower with the compression wrap still in place. Before he goes home, we replace the compression wrap with a clean wrap still using the pre-cut sponge in the same manner we discussed earlier. We also instruct the player as to what we expect of him that night in the dormitory and a student trainer is assigned to see that the instructions are followed. Also, I will drop in the dorm and check for myself on any further complications.

Upon completion of treatment in the training room, we send the player to his room and elevate the ankle and lower leg with pillows. The player's evening meal is brought to his room so he can continue to keep the ankle elevated and packed in ice for overnight. He is to attend **no** functions of any sort until the trainer so designates!

The day after the injury occurred the athlete returns to the training room immediately after breakfast for our first of two full day sessions. At this time we use ice submersion baths. These baths are done exactly as we did with our initial treatment the day of injury. The ice baths continue for the entire day with the exception of the short time he attends the physician's office for X-ray (if this hasn't already been done) and possible aspiration and/or cortisone injection.

All ankles are X-rayed as soon as possible whether there is a question of fracture or not. We feel X-ray gives the boy assurance and also it can be beneficial to us in the future if we have a complete record of the ankle injury.

The second night after injury we apply what we call the "Wildcat Pack," which is made by:

**1.** Wrapping the ankle with absorbent cotton.

**2.** Saturating the cotton with a commercial product which contains picric acid, tannic acid, benzyl alcohol, and isopropyl alcohol.

**3.** Placing the pre-cut sponge sheets in place.

**4.** Securing with an elastic wrap as we described earlier.

**5.** The foot and ankle are then placed in a plastic bag so the fluid will not leak onto the bedsheets as he sleeps.

**6.** We place him on crutches in order not to puncture the plastic bag.

**7.** The player is asked to sleep with his lower leg **elevated.**

The following day (approximately 48 hours after injury), we begin contrast baths with five minutes of cold treatment, five minutes of heat and massage, and five minutes of Wildcat soaks (we pour the commercial product in a large container and have the player soak his foot). Eventually, we progressively work up to the point where the player can take twenty minutes of cold, twenty minutes of heat, and twenty minutes of Wildcat soaks.

That night we again apply the Wildcat soak for what is usually the final time. The following day we return to the contrast baths and continue them for as many days as seems necessary.

By now you are probably wondering what the pack and soaks have to do with healing a sprained ankle. We can not be certain ourselves but apparently, the picric and/or tannic acid is absorbed through the tissues and seals off hemorrhage, thus reducing the pain and thereby allowing full range of motion at a more rapid rate.

Do not get upset with the appearance of the ankle the first time you remove the Wildcat Pack! The ankle will be yellow-green in color, the skin will feel like leather and will be very "wrinkled". This color change will be present in the ankle for several days or possibly weeks.

The results from this form of treatment have been almost unbelievable. We have had players with our interpretation of moderate-severe sprains return to action with no apparent ill effects of ankle injury within five to seven days from the time of injury.

In conclusion, I would like only to say this method of treatment sounds far fetched to me also. However, we have tried treating some ankles in the past with the Wildcat Pack and we have tried others without the use of the Wildcat Pack—more often than not we have gotten better results and at a more rapid rate with the use of the pack.

# BITS AND PIECES

by Clyde Stretch

As of October 1, 1969 the names of ten libraries were added to the subscription list for the Journal. If you have not yet contacted your library concerning the placement of the Journal in the library stacks, please do so. For most libraries this request can be made by telephone.

This encouragement about library subscriptions is being done for some very important reasons. The first ten years of publication of the *Journal of the National Athletic Trainers Association* were included in volume one. There were many enlightening and informative articles written during that ten year period. And yet, if you were not a member of the organization during that time, your chances of benefiting from those articles are severely limited. In consideration of the athletic trainers of the future, the Journal belongs in libraries today.

Almost every four year college and university in the country today that offers a physical education curriculum includes a course in the care and prevention of athletic injuries. Of that number (around 500) there are twenty-one libraries which offer what would seem to be a primary source of reference for such a course.

In order to make available the information that we now have through our membership in the NATA to our counterparts of the future and to provide a key reference source to the students of today, the Journal must be placed in the places where they will be available, the libraries.

● ● ●

The use of passive stretching and manipulation in athletics is rarely, if ever, discussed in print. Although the excerpts presented from "Passive Stretching—Manipulation," are not aimed specifically at the athletic trainer, it is an interesting and seemingly appropriate discussion (Rudd, R.L., M.D. *American Corrective Therapy Journal* 23:14-9; Jan-Feb, 1969).

"In both medical and non medical spheres, different groups call the maneuvers of manipulation by different names. Many conservative medical men think it is akin to quackery; however, others, especially non-medical practitioners consider manipulation a cure-all. Clearly, it is neither quackery nor a panacea.

The need for an explanation, the need to know the exact cause of the back or neck pain (before passive stretching is attempted) seems to be almost compulsive with some physicians. When the medical questioner asks "What is the osteopathic lesion?" he implies that if this question cannot be answered to his satisfaction, manipulation cannot produce successful results. Although one may be able to present a few of the existing, more-or-less accepted causes of the back or neck conditions requiring manipulation: articular facet subluxation, ligament stretch, muscle strain, sprain or spasm, or some minor degree of displacement of the sacroiliac joint; these viewpoints presented by competent authorities may still not be accepted.

Certainly there are gaps in medical knowledge of the causes of a myriad of disease. It is unknown how aspirin functions, though it is used universally for the relief of headaches, arthritic pains or muscular aches. In the *Archives of Physical Medicine and Rehabilitation,* January, 1966, Howard A. Rusk, in his John Stanley Coulter Memorial Lecture said: "I am sure that today aspirin is considered to be the number one drug in the management of arthritides and yet we do not know the specific action of aspirin pharmacologically or biochemically. However, we do not withhold it for lack of this basic scientific knowledge." There are numerous examples of this paradox in medicine; yet one of the most common criticisms of manipulative therapy is that if you don't know what the pathology is, or exactly what manipulation does, how can you justify this treatment? Many diseases are treated without exact scientific knowledge of the pathology of the condition or of exactly what the treatment does, but since benefit is not infrequently derived by patients from certain types of therapy, the disease gets treated. The manipulative techniques, like almost all procedures in medicine, need researching. It is our purpose to try to obtain more

information by examining and recording the results of those who do vertebro-therapy, so that those of us in the medical or paramedical field may be able to evaluate its effectiveness more intelligently.

Passive stretching as a therapeutic technique could be taught to the third or fourth-year student in medicine or in physical or corrective therapy through classroom demonstrations given by qualified physicians. A few weeks of practical instruction, with continuing practice, may convince many interested individuals that a specific form of manipulation is a worthwhile addition to the usual methods of treatment for patients with certain back or neck complaints.

Most of the individuals we have treated had disability or discomfort, or both, in the lumbar, lumbosacral or sacroiliac areas of the spine; a few had involvement of the cervical area. Many patients had experienced little or no relief from routine conservative measures. Nearly all of them had had previous consultations with orthopedists, rheumatologists, or roentgenologists; the recorded diagnoses of these specialists were available to us and revealed no contraindication to stretching.

Osteoporosis or other metabolic disease, osteomyelitis or other infections, tumors of the cord or spine, the arthritides, spondylolisthesis, disc abnormalities, laminectomies, cervical spondylosis, fractures, Paget's disease, congenital anomalies, referred pain originated from a visceral site, or psychosomatic backache were among the conditions most frequently considered as contraindications to even gentle stretching or manipulation.

Sore throats, influenza, pneumonia, sinus or migraine headaches have been and will perhaps continue to be treated by some osteopaths, chiropractors and naturopaths or even by athletic trainers or masseurs. However, through skillful use of a simple, safe type of mobilization technique, we anticipate relief only for the patient who suffers from the common, painful but uncomplicated, acute, subacute or chronic back or neck strain or sprain of fairly recent onset.

## SUMMARY

1. Manipulation can be done by therapists under direct medical supervision. 2. A safe and effective method for simple passive stretching can be taught medical and paramedical personnel in addition to their routine studies. 3. Good clinical research by physicians and therapists will help determine whether manipulation is of benefit to the patient with a disability or discomfort due to a certain type of back or neck pathology."

Dr. Rudd's references provide excellent sources for further study of manipulation therapy.

## REFERENCES

1. Cyriax, J.: "The Pros and Cons of Manipulation," *Lancet* 1:57-573, 1964.
2. Mennell, J. M.: *Back Pain, Diagnosis and Treatment Using Manipulative Techniques.* (First Edition) Boston, Mass.: Little Brown and Co., 1960 pp. 109-128.
3. Wright, J.: "Mechanics in Relation to Derangement of the Facet Joints of the Spine," *Archives of Physical Therapy* 25:201-6; 1944.
4. Travell, J. and W. Travell: "Therapy of Low Back Pain by Manipulation and of referred Pain in the Lower Extremity by Procain Infiltration," *Archives of Physical Therapy* 21:537-47; 1946.
5. Rudd, R. L. and R. J. Margolin: *Rapid Rehabilitation of Back Cases* 1950 Yearbook of Physical Medicine and Rehabilitation. Krusen, F. M., E. D. Elkins, G. G. Deaver, Chicago, Ill.; The Year Book Publishers, Inc. 1950, pp. 237-8.
6. Rudd, R. L.: "Medical Aspects of Manipulation Therapy," *Military Medicine* 132:737; 1967.
7. Rudd, J. L.: "Manipulative Therapy (Passive Stretching) for Neck or Back Strain in Aged Patients," *Journal of the American Geriatric Society* 11:1113-21; 1963.

● ● ●

## CALENDAR

1. The Seattle Rangers and Washington State Osteopathic Association will hold their Third Annual Sports Medicine Clinic on March 21, 1970, at the Sherwood Inn, Seattle, Washington. Contact Dr. Keith Peterson.

2. The First Cleveland Clinic Conference on the Medical Aspects of Sports will be held April 6-7, 1970, at the Cleveland Clinic in Cleveland, 2020 East 93rd Street. Dr. H. Royer Collins can supply details.

# Certification Examination Now in Preparation With the P.E.S.

by
J. Lindsy McLean, Jr.
Chairman
Certification Sub-Committee
Professional Advancement Committee

In December 7, 1968, William E. Newell, Chairman, NATA Committee on Professional Advancement, appointed a sub-committee to develop a program of certification by examination for the National Athletic Trainer's Association. The purpose of this project was to evaluate competency for the safe practice of athletic training, ultimately raising the professional level of our field. This exam, while initially designed for certification of candidates from a wide variety of educational backgrounds, should eventually closely reflect the desirable academic preparation of students in approved NATA athletic training curriculums at colleges and universities throughout the nation. I would like to bring you up to date on the work of this sub-committee and how it might affect new applicants for NATA certification after December 31, 1969. As of that date all presently active members of the Association will be eligible for automatic certification under the "grandfather clause".

The committee, with the aid of medical advisors, initially prepared a tentative examination outline and submitted it to the active membership in early 1969 for weighting of the various subject areas and for approval or rejection of topics to be included. Concurrently the sub-committee on curricular development was contacted to determine the availability of academic opportunities in each possible subject area throughout the country. The result of both inquiries led to several revisions in the original subject matter outline.

A second active membership questionnaire in May, 1969, revealed that a majority of the membership preferred to be called: "athletic trainer, certified" or "certified athletic trainer" rather than some other title designation.

As the examinaiton content became more certain, it immediately became evident that such an instrument would have little value or could command respect from other professions if it failed to have the true discriminating ability of test items with subsequent validity and reliability in the test results. Several other professional organizations were contacted with similar certification programs and a variety of educational testing services were consulted for advice and proposals.

On recommendation of our committee, the NATA Board of Directors unanimously agreed to enter into a contractural agreement with the Pro-

*The NATA Certification Examination Committee meeting with the Professional Examination Committee in New York City, August 12 and 13, 1969, to initiate the development of a certification examination for athletic trainers. Top Row, left to right: George Sullivan, U. of Nebraska; Dr. James Feurig, M.D., Michigan State U.; Sayers "Bud" Miller, U. of Washington, and Joe Altott, Columbia U. Bottom Row, left to right: Chris Patrick, U. of Kentucky; Lindsy McLean, U. of Michigan, chairman; Mrs. Ruth Shaper, PES, Assoc. Director, American Public Health Assoc.*

fessional Examination Service (PES) of the American Public Health Association to help develop and score our examination. For the past 28 years the PES has been preparing examinations for use in the evaluation of professional competency in health and related fields. These examinations are administered by governmental agencies, professional organizations, certification and licensing boards, and educational institutions. Among prominent organizations utilizing the PES as their examination consultants are the American Board of Preventive Medicine, the American Physical Therapy Association, and the American College of Hospital Administrators.

### PREPARE EXAM

In August 1969, an ad-hoc NATA committee met with the PES in New York City to begin preparation of the examination. A major effort of our committee has been to develop an examination to establish minimal professional competence in our field despite variations in educational preparation and regional differences in athletic training philosophy. The composition of the ad-hoc committee reflects this philosophy. Each section of the country was represented as well as several different education approaches to the profession. A team physician was included on the committee to insure proper emphasis of subject matter and ethical standards acceptable to the medical profession.

At the initial meeting a number of test questions were selected from existing PES files but many new questions are now being developed by selected question writers now active in the athletic training field throughout the country. The completed examination will then be thoroughly reviewed by the Committee on Professional Advancement before being presented for adoption by the NATA.

It is expected that the examination will be completed by mid-summer, 1970. It should have some 150 multiple choice questions on such topics as anatomy, physiology, prevention of injury, first aid, recognition of injury, and treatment techniques. It will be given on both a regional and national basis and also will contain an oral and practical section. Although details are not yet completed, the membership will be notified when qualifications, examination dates, and application procedures are clarified and approved by the Board of Directors. A list of study references will also soon be made available from the National Office.

The exam should be completed within the next year, and would mean a great deal to our Association and contribute markedly to our professional advancement. Your continued patience, advice and assistance concerning this project is solicited and appreciated.

---

# NATIONAL NOTES

Jack Rockwell, Executive Secretary

As this issue of the Journal reaches each of you, football will be pretty well finished at most schools. As I write the article though, we are still in the midst of the pigskin hysteria. It is always interesting to note that as the football season starts, my correspondence from around the country falls off by about 80%; indicative that we all keep busy at this time of the year.

The past months have been busy and extremely gratifying here in the National Office. The response to the Resolution passed by the Board pertaining to not publicizing or supporting social events by commercial sources was quite surprising. Every letter received from the Exhibitors praised the NATA for this action, pointing out that it made it a more equitable situation for all concerned. This particular piece of Board action caused a great deal of controversy at the time it was discussed. It is good to have it settled and know that people are willing and able to live with the final decision.

The ratification vote on the Procedures for Certification has been coming along very well, with the vote being 238 for ratification and 7 negative votes. The most common question asked is, "Do active trainers in the Association have to take the examination for Certification?" The answer is No, they do not. The printing of the Procedures for Certification was based on the establishment of these procedures as of January 1, 1970. So all athletic trainers who are Active Members prior to December 31, 1969, will be automatically Certified as of January 1, 1970. All athletic trainers who become Active Members after December 31, 1969, will have to fulfill all the requirements established to become Certified. I hope this clarifies a point that has caused some confusion.

Two other questions that have been asked are as follows: (1) With

the heavy load of required subjects will the student have any latitude in selecting elective courses? As the curriculum stands at present there will be very little opportunity for the student to take elective courses. In attempting to give the prospective trainer adequate preparation in his field, plus preparing him as a teacher, the work load will reach the maximum. (2) Is there a procedure for non-degree servicemen to be Certified? This is an area that must be worked out, and I'm sure we will find other areas that must be changed, added, and possibly deleted as time goes along. I have attempted to write to all those who commented on the procedures—both negatively and affirmatively. If you have any further questions, please feel free to write at any time.

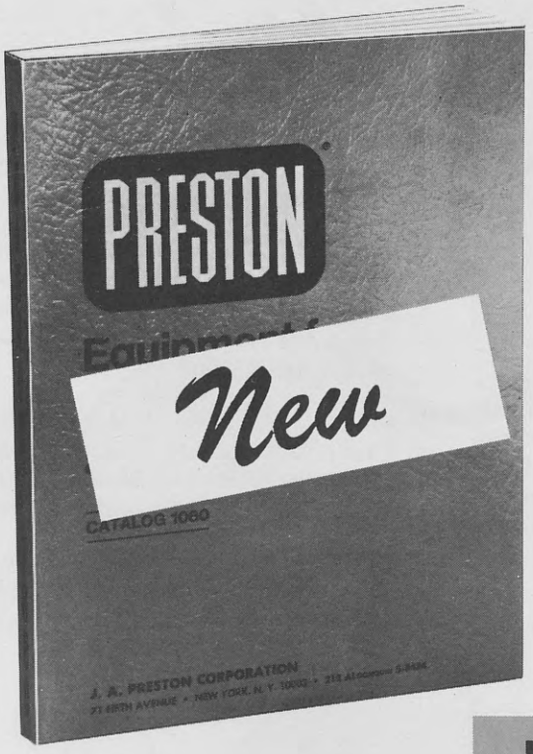
The contractural agreement with Professional Examination Service has been signed, and P.E.S. is in the process of developing a testing apparatus for the NATA. The test will be partially written, partially oral, and partially practical. The administration of the test will be handled by the NATA but the final procedure has not yet been established.

## DELINQUENT MEMBERS

After accepting the good will of the Exhibitors and receiving praise on the lost issue of the Journal, I must admit that not everything has been on the up-side. After much deliberation it was decided that some drastic action should be taken on delinquent members—whose number has become quite sizable. There were some loud cries of anguish and some quite upset people. The reasons for delinquency ran from the sublime to the ridiculous. The need for annual billing from the National Office and collection of dues by the National Office is, I believe, very apparent. A proposal will be made at the next Board of Directors meeting asking that this be done.

May you all have a very Happy and Joyous Holiday Season.

# EQUIPMENT FOR ATHLETIC TRAINING PROGRAMS




## PRESTON CATALOG 1080

. . . contains the largest line of specialized equipment suitable for Athletic Training Programs.

The Preston Catalog 1080 includes the equipment and brands you know and use. Among them are:

Ille Whirlpools
Whitehall Whirlpools
Elgin Exercise Equipment
Nissen Gym Apparatus
Hydrocollator
ColPaCs
Medcolator
Birtcher Ultrasound
N-K Quadriceps Exercise Tables

Also, a wide variety of infrared lamps and bakers, and many other items for your training program.

Ordering from Preston is convenient and time-saving because Preston supplies all your equipment needs from a single source. And Preston sells only direct-to-you. We have no dealers or agents.

The complete Preston Catalog is available free of charge. Please address your requests to J. A. Preston Corporation, Department N, 71 Fifth Avenue, New York, N. Y. 10003.

**J. A. PRESTON CORPORATION**

71 Fifth Avenue, New York, N. Y. 10003 212 AL 5-8484

# Get *Hustle*®

## The really delicious energy boost that's there when you need it!


***1 can of HUSTLE provides as much***

**PROTEIN**
as ¼ lb. of beef

**VITAMIN C**
as a whole grapefruit

**CALCIUM**
as a pint of milk

**QUICK ENERGY**
as 2 chocolate bars

**PLUS**
all the vitamins and minerals known to be needed in a well-balanced meal

Hustle is the energy packed-high protein drink that gives your team something really extra. Hustle in the InstaCan is a balanced meal in itself. Hustle tastes great and is perfect for any type of weight control. Hustle is so easy to digest—even for athlete's with a jumpy stomach! Perfect before, during or after any contest. **Sold by your local sporting goods dealer.**

***For:***
***stamina***
***strength***
***energy***

# Recent Athletic Training Literature

This list is generally restricted to those areas of specific interest to the athletic trainer. Topics belonging to the broad areas of athletics, physical education and physical therapy will usually be omitted.

Beckett, A. H., et al: "Routine Detection and Identification in Urine of Stimulants, Analgesics, Antihistimines, Local Anesthetics and other Drugs, Some of Which May Be Used to Modify Performance in Sport," *Journal of Pharmacy and Pharmacology* 20:Supplement:485+; December, 1968.

Best, E. J.: "Athletic Injuries," *Dental Digest* 75:118; March, 1969.

Bottom, J. E.: "Athletic Head and Spinal Injuries," *Virginia Medical Monthly* 96:79-84+; February,

Cameron, B. G.: "The Innocuous Menisectomy," *American Journal of Orthopedic Surgery* 10:233; October, 1968.

Corbin, C. B.: "Are Your Athletes Fat?" *Scholastic Coach* 38:54+; May, 1969.

Gibbens, M. E.: "Diagnosis and Treatment of Low Back Pain, II," *American Journal of Orthopedic Surgery* 10:244-5; October, 1968.

Gisolfi, C., et al: "Relations Between Physical Training, Acclimitization and Heat Tolerance," *Journal of Neurophysiology* 26:530-4; May, 1969.

Hoffman, M. S.: "Jogging and Foot Problems," *Journal of the American Medical Association* 207:2283-4; March 24, 1969.

Knott, L. W.: "Modalities of Physical Medicine, Their Uses and Abuses," *Modern Treatment* 5:909-17; September, 1968.

Lehmann, J. F., et al: "Selective Muscle Heating by Shortwave Diathermy with a Helical Coil," *Archives of Physical Medicine and Rehabilitation* 50:117-23; March, 1969.

Michaeli, D.: "Heatstroke," *British Medical Journal* 1:844-5; March 29, 1969.

O'Toole, M. L.: "The Therapeutic Uses of Cross Education in Reconditioning Injured Knees," *American Corrective Therapy Journal* 23:56-8; March-April, 1969.

Redfearn, J. A., et al: "History of Heat Stroke in a Football Trainee," *Journal of the American Medical Association* 208:699-700; April 28, 1969.

Rudd, R. L.: "Passive Stretching—Manipulation," *American Corrective Therapy Journal* 23:14-9; January-February, 1969.

---

## STATEMENT OF OWNERSHIP

### Management and Circulation

The Journal of the National Athletic Trainer's Association is published four times a year, March, June, September, and December, by the National Athletic Trainer's Association, located at 3315 South Street, Lafayette, Ind. 47905. Marvin Roberson, Brigham Young University, Provo, Utah, is editor. Ellis Murphy, 600 South Michigan Avenue, Chicago, is managing editor. Ownership is maintained by the National Athletic Trainers Association, at 3315 South Street, Lafayette, Ind. 47905. The Journal is printed by The Interstate Printers and Publishers, Inc., Danville, Ill., 61832. There are no bondholders, mortgagees, or other security holders. Two thousand copies are printed; total paid circulation is 1247, 487 are distributed free, and 266 are used as samples, overstock, and for promotion. Certified by Jack Rockwell, Executive Secretary of the NATA.

Rusty Cleats' official order form

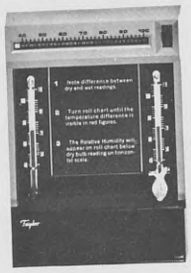
# BRAKE TIME BONUS PREMIUMS


5-gal. IGLOO
Insulated Cooler Dispenser.
$16.90 retail

**FREE with 4 BONUS CERTIFICATES**

48-qt. IGLOO
Insulated Chest Dispenser.
$26.98 retail

**FREE with 7 BONUS CERTIFICATES**



Taylor Comfortguide Hygrometer with instruction panel, thermometers, range 40° to 110°F. Self-contained water cistern. Revolving humidity table and spare wicks. Size 7"x5". $12.50 retail

**FREE with 4 BONUS CERTIFICATES**

Sony TR-1839
Touch'n Play AM Desk Radio.
$21.95 retail

**FREE with 9 BONUS CERTIFICATES**


Sony TFM-1849W
Deluxe Touch'n Play AM-FM Desk Radio.
$29.95 retail

**FREE with 12 BONUS CERTIFICATES**

Sony ICR-120 2-cubic-inch Micro Radio.
Weighs only 2½ oz.
$39.95 retail

**FREE with 15 BONUS CERTIFICATES**



Sony 8FC-59WA
Digital Clock AM-FM Radio.
$49.95 retail

**FREE with 18 BONUS CERTIFICATES**

Minolta 16mm Miniature Camera with built-in light meter, flashgun, colorfilm and case. Takes crisp wallet-size color and black & white pictures. $90.95 retail

**FREE with 28 BONUS CERTIFICATES**

OK, Rusty Cleats, send me the FREE PREMIUM shown below:

Premium desired _____

Ship to _____

Address _____

City & State _____ Zip _____

SCHOOL (Name) _____ (City) _____

My Sporting Goods Dealer is _____

This order form must be completed and accompany the correct number of BONUS CERTIFICATES before your premium can be shipped at no additional cost. Send this form and certificates to:

**TRUETT LABORATORIES, P. O. BOX 34029, DALLAS, TEXAS 75234**

# The Germkiller


Now you can disinfect the water in your whirlpool baths and tanks with a powerful, new microbicide—BETADINE WHIRLPOOL CONCENTRATE.

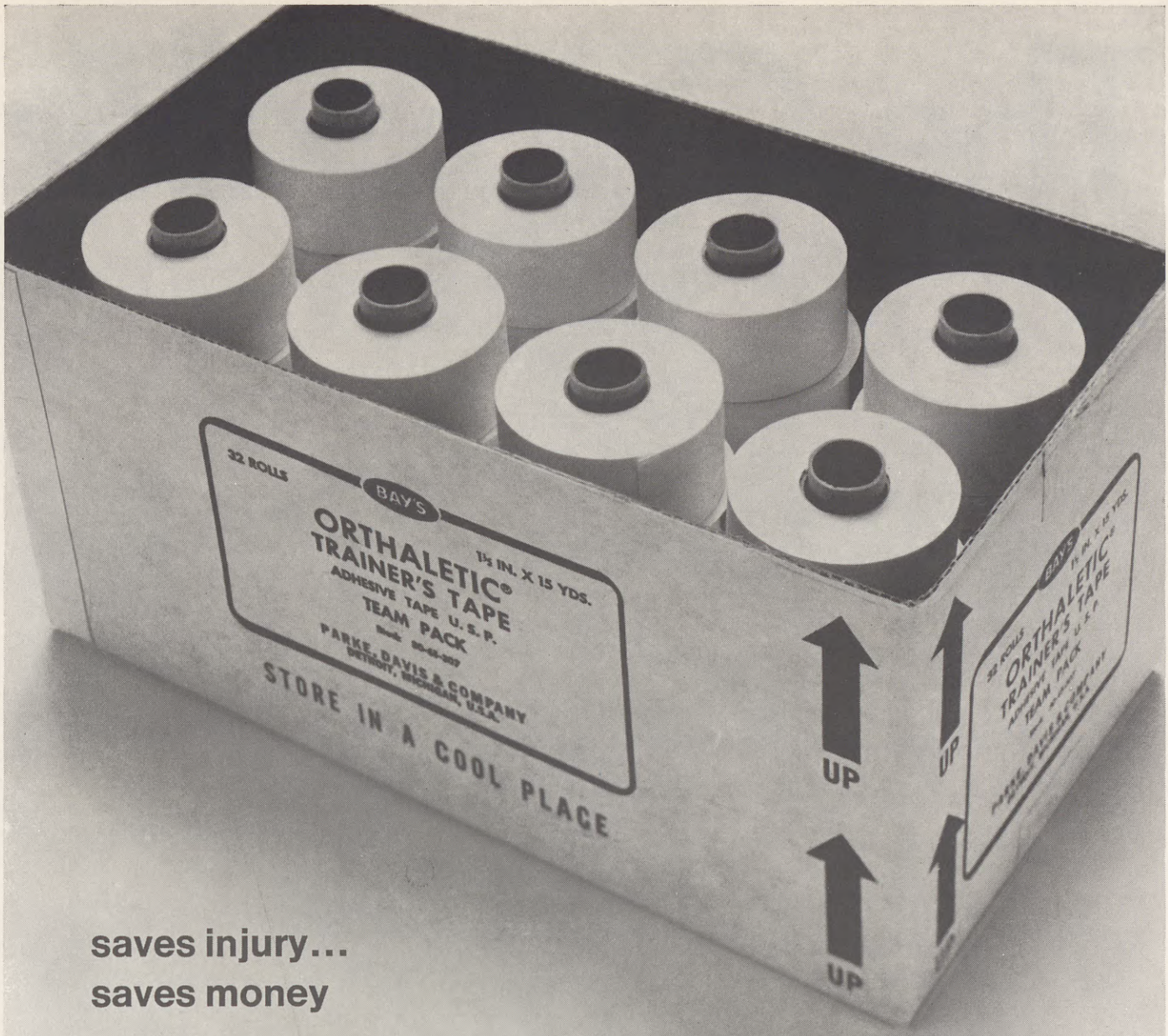
Used as directed...BETADINE WHIRLPOOL CONCENTRATE promptly reduces bacterial contamination of water and kills iodine-susceptible microorganisms in the bath...including Pseudomonas strains, *E. coli* and staphylococci.

It is a unique germicidal iodine-complex—nonionic, nonstaining to skin, mucous membranes, and to natural fabrics...virtually nonstinging and nonirritating. BETADINE WHIRLPOOL CONCENTRATE disinfects water, whether bacteria are present at the time of filling the tank or during use. What's more, it is economical. As a rule, one fluid ounce of BETADINE WHIRLPOOL CONCENTRATE disinfects about 20 gallons of water. *Supplied:* One (1) gallon. *Also available:* Dilution chart giving specific amounts for various tank sizes.

**Purdue Frederick**
The Purdue Frederick Company, Yonkers, New York 10701

# Betadine Whirlpool Concentrate
(povidone-iodine)

## for effective disinfection of bath water prior to and during physical therapy procedures




**saves injury...**
**saves money**

**new**
# Orthaletic®
# Trainer's Tape
**in the new, economical**
# Team Pack


Specifically designed for prevention and care of athletic injuries, ORTHALETIC Trainer's Tape features strong backing cloth, water-resistant finish, high-quality adhesive, uniformly applied and bonded, and special "easy-tension" winding. One TEAM PACK contains 32 rolls of 15 yards—enough to strap the ankles of 32 men. And the compact case is easy to handle at home and on the road.

Other special-purpose tapes include: **BayHesive**® for high tensile strength and **BayConomy,**® a lighter weight adhesive tape.

**PARKE-DAVIS**

018R67