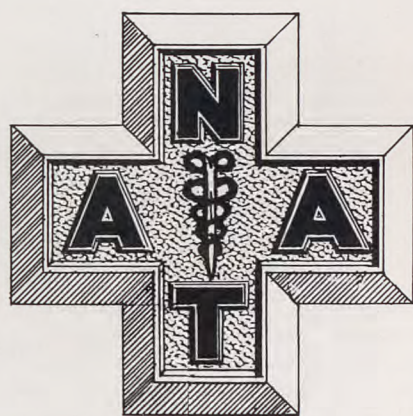


The

NOVEMBER 1963

**J
O
U
R
N
A
L**

OF THE
**NATIONAL
ATHLETIC TRAINERS
ASSOCIATION**



15th ANNUAL MEETING

PALO ALTO, CALIFORNIA, JUNE 7, 8, 9, 10, 1964

CRAMER'S DINE-A-PAK

A Complete Meal For Highly Active People

Cramer's Dine-A-Pak Is a Special Dietary Food Combining a Delicious Chocolate Drink with Four Especially Formulated Oatmeal Cookies for a Complete Nutritional Meal.



- Pre-Game Meals — football, basketball, baseball and track.
- Golf, tennis, bowling and skiing.
- Vacation Trips — camping, hunting, and fishing.
- Maintenance of vigor and restoration of depleted energy reserves.
- Providing a quick and convenient source of sound nutrition.
- Supplying measured nutrients for controlled diets or as a supplement to the normal diet.

Each meal supplies more than 20 grams of high quality milk protein and sufficient fat and carbohydrates to provide 650 calories.

The product is vitamin fortified and each meal contains at least one-third of the daily adult needs of all nutrients for which requirements have been established.

Special School Price—\$9.85 case of 12 meals

Dine-A-Pak can be consumed as little as one hour prior to the game. The combination of highly nutritious cookies and drink:

- ★ Digests easily and empties quickly from the stomach.
- ★ Satisfies the appetite and maintains a well-fed feeling for hours.
- ★ Provides sound nutrition in a convenient, ready to use form.

ORDER A FEW CASES AT A TIME . . . FROM YOUR FAVORITE SPORTING GOODS SALESMAN

THE JOURNAL OF THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

The official organ of the National Athletic Trainers Association is published four times yearly. Communications regarding articles should be addressed to:

JACKIE COPELAND, Editor
Junior Service League Orthopedic Center
1219 Dunn Ave.
Daytona Beach, Florida

LEWIS CROWL, Circulation Manager
Sacramento State College
Sacramento, California

Associate Editors: Bob Grant, University of Vermont; Con Jarvis, University of Stanford; Art Dickinson, Jr., Arizona State; Birger Johnson, Fresno State College; Allan J. Ryan, M.D., Meridian, Connecticut; Phillip J. Rasch, Ph.D., Los Angeles, California.

Communications regarding advertising space should be addressed to:

THOMAS HEALION, Advertising Manager
Northwestern University, Evanston, Illinois

Material appearing in this publication may be reproduced in abstract providing credit is given The Journal. Original writings or works cited in this publication do not necessarily represent the position of the Association or its Board of Directors.

Publication offices: 616-620 Columbia Street, Lafayette, Indiana.

WILLIAM E. NEWELL, Executive Secretary
Purdue University, Lafayette, Indiana

N.A.T.A. DIRECTORS

DISTRICT 1:

Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.

MIKE LINKOVICH Bowdoin College
Brunswick, Maine

DISTRICT 2:

Delaware, New Jersey, New York, Pennsylvania.

JOE ABRAHAM Hobart College
Geneva, New York

DISTRICT 3:

Maryland, North Carolina, South Carolina, Virginia, West Virginia, District of Columbia.

ROBERT L. MARTIN, JR. Wake Forest College
Winston-Salem, North Carolina

DISTRICT 4:

Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin, University of Iowa, Marshall College.

TOM HEALION Northwestern University
Evanston, Illinois

DISTRICT 5:

Iowa, Kansas, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, University of Colorado.

LLOYD WILLIAMS University of Colorado
Boulder, Colorado

DISTRICT 6:

Arkansas, Texas.

THOMAS WILSON University of Houston
Houston, Texas

DISTRICT 7:

Colorado, Montana, Utah, Wyoming, Arizona, New Mexico, Idaho.

ART DICKINSON, JR. Arizona State University
Tempe, Arizona

DISTRICT 8:

California, Nevada, Oregon, Washington, Hawaii, Alaska.

JIM VAN DUESSEN University of California
Berkeley, California

DISTRICT 9:

Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, Tennessee.

SAM RICHWINE University of Georgia
Athens, Georgia

N.A.T.A. DISTRICT SECRETARIES

DISTRICTS 1 and 2:

WILLIAM F. X. LINSKY 163 Magazine Street
Cambridge 39, Massachusetts

DISTRICT 3:

FRED HOOVER Clemson College
Clemson, South Carolina

DISTRICT 4:

MILLARD KELLEY Detroit Lions
Detroit, Michigan

DISTRICT 5:

TED BALLARD Tulsa University
Tulsa 4, Oklahoma

DISTRICT 6:

DON BENNETT 9607 Vogue Lane
Houston 24, Texas

DISTRICT 7:

ARTHUR DICKINSON, JR. Arizona State University
Tempe, Arizona

DISTRICT 8:

LINCOLN KIMURA San Jose State College
San Jose, California

DISTRICT 9:

JAMES GOOSTREE University of Alabama
Tuscaloosa, Alabama

1964 ANNUAL MEETING

Program Chairman
MARVIN ROBERSON

Foothill College
Los Altos, California

Host Trainer
JIM VAN DUESSEN

Exhibits Chairman
WARREN ARIAIL

Indiana University
Bloomington, Indiana

THE LIQUID PRE-GAME MEAL, THREE YEARS LATER*

Kenneth D. Rose, M.D., F.A.C.S.M., Paul J. Schneider,
George F. Sullivan, R.P.T. and S. I. Fuenning, M.D.**

The concept of preparticipation emotional tension and its effect on the gastrointestinal tract is certainly not new, the problem having been with mankind since the beginning of time. In spite of recent idealistic comments¹ in regard to a game being only a game, wishing tension away will not dispose of it. In fact, tension is the stuff from which good competitors are made. It is part of man's make up, but some of its less desirable side effects can be ameliorated in the same preventive spirit that an ankle is taped to prevent its being resprained.

In recent years occasional reference has been made to this subject in relationship to sports. Billick, in 1948 for instance, mentions the need to consider pre-game emotional strain in planning what to feed an athlete prior to the game.² Bogert, in 1949, called specific attention to the suppressive action of strong emotions on gastrointestinal motility in athletes.³ In 1951 Bensley stated specifically in regard to the pre-game meal, "The chief consideration to be borne in mind in planning the meal is the emotional stress which the athlete may experience on the day of the event. This may lead to loss of appetite, abdominal discomfort, and even nausea, vomiting and diarrhea."⁴

Various authors have recommended certain pre-game diet schedules, apparently based on the knowledge that digestion and absorption, *under normal conditions*, are complete by four hours. Thus we find Morehouse and Rasch recommending bouillon, broiled steak, peas, toast, tea and fruit as a 10 a.m. pre-game meal in preparation for a 2 p.m. contest.⁵ Dayton, in his book "Athletic Training and Conditioning," makes similar recommendations, the meal to be eaten between 8:30 and 10 a.m. with supplemental bouillon and melba toast at about 11:30 a.m.⁶ Upjohn, et al lists essentially the same diet and time of eating (viz. 10 a.m.) but does admit that game tension might delay gastric emptying as long as six hours.⁷ These recommendations, however, are made on the basis of the expected normal gastrointestinal motility, but there are several factors which modify this normal pattern. One is the physical consistency of the food, another is the emotional state of the individual in whom this meal has been placed.

Our University of Nebraska football team was in the habit of eating this recommended pre-game meal between 8 and 10 a.m., but had experienced a considerable amount of pre-game nausea and vomiting, a not uncommon phenomenon across the country. Our experience with this digestive malfunction had extended also to fall camp practice sessions. At the fall camp of 1959 a record was kept of the incidence of gastric upsets. The practice day began at 7 a.m. with a regular balanced breakfast; noon lunch was served at twelve and dinner at 6:30 p.m. The mean ambient morning temperature was 73°F and the average humidity was 62%, in other words ideal practice weather. Practice was held for 2 hours in the morning and 2 hours in the afternoon. On the four recorded days of observation an average of 19 men a day became nauseated and lost their breakfast during morning practice. Very few of the

team ate lunch, consuming mostly liquids.

As a result of these and similar experiences on game days during the regular playing session our then Director of Athletics requested that consideration be given to a solution to this problem, since it appeared to be compromising the well-being of the team. As newcomers to the field of athletic nutrition and blissfully ignorant of the esoteric studies which had been published in this area of athletic medicine, it seemed perfectly obvious to us that our players were vomiting because of gastric retention secondary to emotional tension and a too heavy meal. We set about to prove this.

At spring practice in 1960, at the Annual Varsity-Alumni football game, four men were selected as candidates for a gastrointestinal motility study. Simultaneous with the traditional pre-game meal between 9:30 and 10:00 a.m., they were given 1 ounce of a thick barium sulfate suspension. Between 2½ and 2 hours 45 minutes later, just before suiting up, a prone film of the abdomen was taken. After the game, or from 6½ to 7½ hours after eating, and after they had showered, changed into their street clothes and walked the four blocks to the Health Center, they were again x-rayed. All of them had a decided gastric retention at 2½ hours. After the game there was still a considerable portion of the meal in the terminal jejunum and ileum. In other words, this meal was being digested and absorbed during the football game. It is a well accepted theory that digestion or muscular activity or both are compromised under such conditions.

The results of this study were made available to the general public at the National Athletic Trainers meeting in Kansas City in June, 1960 and published in the Nebraska State Medical Journal.⁸ Based on the knowledge that solid food must be rendered liquid or semi-liquid before it is evacuated from the stomach,⁹ it was suggested that a high calorie liquid meal, such as that used in post-surgical cases, might be the answer to this problem. These liquid diets are highly nutritious, well-balanced, and are readily digested and absorbed.

At the fall camp of 1960, following a schedule similar to that of 1959, sixteen ounces of a liquid surgical meal* was fed each player at 6:45 a.m. and at noon for those who requested it. The morning ambient temperature averaged 84°F and the humidity was 69%, almost unbearable for practice, yet not a single case of nausea or vomiting occurred during fall camp. The results were so spectacular the coaches and players were convinced immediately, and it became a part of our regular football routine.

The question was asked whether the liquid meal did in fact leave the stomach and small bowel in the accepted length of time. This question was resolved by testing four freshmen players similarly at one of their inter-school games. In all instances the results confirmed our expectation, the meal had passed through the small bowel by 2 to 2½ hours, and digestion and absorption were essentially complete by game time. The results of our experiences during the Varsity season 1961 have been published along with further discussion of the physiological basis of this feeding technique.¹⁰

As a result of these studies, the University of Nebraska has since offered the liquid pre-game meal routinely to all its athletes. To say it has met with unqualified success would be an erroneous statement, much depending on what is expected of it, but it has met with an unusual reception both on our campus and elsewhere in all

* An address presented before the Marin County Sports Injury Conference, San Rafael, California, March 9, 1963.

** University of Nebraska Health Service, Division of Athletic Medicine, Lincoln, Nebraska.

* Sustagen, Mead Johnson Laboratories, Evansville, Indiana.

continued on page 3

LIQUID PRE-GAME MEAL, (continued)

sports.¹¹⁻¹³ Most of the criticism has come from those who misunderstand its purpose, which is to circumvent the problem of pre-game nausea and vomiting. The secondary gain, namely the improved sense of well being, is taken as the primary goal. An example is a high school in California who had their boys drink the liquid the night before a game as well as on the day of the game but found they played no better. Clearly they misunderstood the purpose and were seeking some mysterious source of super muscular power not inherent in any extra-corporeal substance. Having been closely associated with this subject for three years we feel we are qualified to render an educated opinion on its value, and we would like to pass some of it on to you.

In the words of Dr. Warren Guild of Harvard University,¹⁴ who I think has made the best analysis to date of pre-event nutrition, "Loose bowel movements with abdominal cramps and weakness, metabolic acidosis, dehydration, impaired emptying of gastric contents, low salt syndrome and inadequate energy supplies can be expected to impair the athlete's performance. If these can be avoided or minimized, the athlete can exert himself closer to his full potential." He further states that the meal should not be high in protein to prevent enhancing the metabolic acidosis of muscular activity by the addition of exogenous acid from a high protein diet. (He is speaking now only of a pre-game meal.) Thus meat, eggs and fish should be eliminated. The pre-event meal "should be easily digestible since the implications of competing 'on a full stomach' are well known." Since fat slows gastric emptying already compromised by tension, he recommends that fat be severely restricted, "Carbohydrate, the most readily available and quantitatively significant source of calories in athletics . . . is pre-eminent."

The pre-game meal we have been using consists of 1590 calories of which only 104 are in the form of fat, 254 in the form of protein and 1,232 in the form of carbohydrate, largely dextro-maltose and sugar. Toast, honey and peaches in heavy syrup are fed early, 7 hours before the event. The liquid meal is fed four hours before game time. It is easily digestible and assimilable, passes readily into the small intestine and does not remain in the stomach. It thus appears ideally suited for the pre-event meal, and far superior to the present solid-type meal, if we can accept the suggestions and interpretations of Dr. Guild.

Athletic hydrophobia is a word popularized, if not actually coined, by Dr. J. Jay Keegan of the University of Nebraska College of Medicine. It refers to rigid liquid abstinence by players during an athletic contest for fear of suffering stomach cramps. This erroneous philosophy is still perpetuated by many coaches and trainers, but international publicity on heat exhaustion deaths on the fields of athletic contest is beginning to erode this bad training practice. Before a national TV audience watching the Orange Bowl game of 1961 the cameras showed a close up of players as they came off the field to receive a transient spray of water in their mouth, only to spit it dutifully out on the ground after a brief mouth wash. This need not be so. At every contest our athletes have available a palatable, cool 0.2% sodium chloride solution, and they may have as much of it as they desire within reason. It is not expected that all fluids lost during contest will be replaced, but by drinking water which is essentially isotonic with perspiration, body stores of salt are conserved and the dangers of heat exhaustion minimized. Undoubtedly

this fact also contributes to the freedom from painful abdominal and leg cramps we have experienced since the inception of this regimen.

Does the liquid meal win games? After reviewing our football won and lost record for '60 and '61 the answer is obvious, it doesn't. Yet we have been accused of implying that this regimen will furnish a mysterious source of energy, and we have been cast with the lot of proponents of Royal Jelly, Vitamin E, protein pills and gelatin, to name only a few. It is not and has never been intended as a gimmick to supplant good coaching, and motivation. Our present coach carved out a 9 to 2 record this past season, the best since 1904, and he did it with essentially the same team that the year before had suffered one of our most disastrous seasons. But again to paraphrase Dr. Guild, if gastrointestinal symptoms can be avoided or minimized, the athlete can exert himself closer to his full potential. We think the liquid pre-game regimen has helped in this regard.

Do all athletes like it? The answer here is definitely not, nor do all require it. Some can play just as well on an empty stomach. Certain ethnic groups reject it almost entirely, preferring to have a full stomach before going into battle. But after three years trial, 29 of the 36 members of the varsity football squad still use the liquid meal voluntarily.

The most enthusiastic supporters are the members of the wrestling team, who found early that by going on a controlled Sustagen or Nutrament diet they could achieve weight levels easily and without the detrimental effects attending starvation diets or steam bath dehydration. Our wrestling team has had its best seasons, the past three years, since 1929. Mike Nissen, who wrestles at 137 lbs. and has not lost a match in two years, including national matches, says it is "the best thing since the wheel was invented." Ray Knaub, one of our outstanding dash men, had trouble maintaining weight and stamina before supplementing his regular diet with the liquid diet before track meets. Mike Flemming, who doubles in the mile and 2 mile run, is a slightly built lad who had trouble running out of steam in the second event because he could hold no food on his stomach on meet days. Now he not only doubles but occasionally triples in the 880.

One must bear in mind that we are dealing with young men not yet accustomed to handling the tension of competition. In the pro ranks the story is different. Dr. Nellen, team physician for the Green Bay Packers, has spoken to us on his experiences with the World Champions. When asked about the liquid diet he reported that they tried it in 1961. The team ate their usual pre-game meal and then the liquid meal, too, apparently just to please the "Doc." In 1962 it was not offered and no one asked for it. The obvious conclusion was that they could take it or leave it alone and still play championship ball. Yet there are athletes in the professional ranks who are bothered by pre-event vomiting. It seems reasonable that they could be helped by some friendly advice, antispasmodics and the liquid meal.

There are a few boys who state that the liquid meal makes them sick, largely due to the taste, which is not to their liking. But these are boys who have never held anything easily. On a questionnaire completed at the end of this last season some stated they ran out of energy, *but twice as many who were eating the regular diet had the same complaint.* One out of every three on the liquid regimen stated they felt hungry sometime during the game or immediately after, *but one out of every two on*

continued on page 4

LIQUID PRE-GAME MEAL, (continued)

the regular meal had the same complaint. It appears, therefore, that the liquid meal has not enhanced the normal subjective complaints referable to hunger and energy.

In summary, after three seasons' use of the liquid pre-game feeding regimen,* we at the University of Nebraska remain convinced that it is a useful adjunct to the field of athletic nutrition. It unquestionably eliminates pre-game nausea and vomiting in the susceptible individual. Strength and endurance are not compromised, but in most instances seem to be improved; abdominal cramps and "charley horses" have been essentially eliminated. This is not all dietary and fluid balance but probably reflects good training, too. Although I have not mentioned "cotton mouth," this symptom has also been essentially eliminated, probably as a result of freely offered 0.2% salt solution.

* Sustagen furnished by Mead Johnson Laboratories of Evansville, Indiana. Nutrament furnished by Edward Dalton Co. of Evansville, Indiana.

The liquid pre-event meal has become established as a form of adjunctive nutritional therapy, applicable primarily to those athletes whose digestion is compromised by pre-game emotional tension, but useful for all. It is widely used, the degree of success experienced depending upon a thorough understanding of the rationale behind it and its expressed purpose. Although the technique of its use must be modified to meet the needs of the event, some form of the recommended regimen is applicable in all sports. An example is its use in the Pan-Am Games in Sao Paulo, Brazil, where one form of it was used in a variety of sports.* In this instance its easy portability (12 cases or 576 cans were carried as part of the standard equipment) and stability (no refrigeration needed) helped solve a knotty problem in feeding in an area where refrigeration was not available. In this situation it was fed warm instead of cold as has been previously recommended¹⁰ without significant problems.

* Furnished by Cramer's Chemical Co. of Gardner, Kansas.

It appears that the liquid meal is here to stay. We admonish those who use it to do so wisely and where indicated, and it will add to their armamentarium in preparing for peak physical fitness.

The cooperation of the University of Nebraska Department of Athletics in making this study possible is greatly appreciated.

BIBLIOGRAPHY

1. Quigley, T. B., *Medicine in Sports Newsletter*, Vol. 3, No. 1, Febr. 1963.
2. Billick, S. E., "The Trainer's Bible," 8th Ed., T. J. Reed & Co., New York, 1948, p. 106.
3. Bogert, L. J., *Nutrition and Physical Fitness*, 5th Ed., W. B. Saunders Co., Philadelphia, 1949, p. 323.
4. Bensley, E. H., *The Feeding of Athletes*, *Canad. Med. Assn. Jour.*, 64, 503 (1951).
5. Morehouse, L. E. & Rasch, P. J., *Scientific Basis of Athletic Training*, W. B. Saunders Co., Philadelphia, 1958, pp. 79-83.
6. Dayton, O. W., *Athletic Training and Conditioning*, The Roland Press Co., New York, 1960, p. 37.
7. Upjohn, H. L., Shea, J. A., Stare, F. J. & Little, L., *Nutrition of Athletes*, *Jour. Amer. Med. Assn.*, 151, 818 (1953).
8. Rose, K. D. and Fuenning, S. I., *Pre-Game Emotional Tension, Gastrointestinal Motility and the Feeding of Athletes*, *Nebr. State Medical Jour.*, 45, 575 (1960).
9. Best, C. H. and Taylor, N. B., *Physiological Basis of Medical Practice*, 6th Ed., Williams & Wilkins Co., Baltimore, 1955, p. 567.
10. Rose, K. D., Schneider, P. J. and Sullivan, G. F., *A Liquid Pre-Game Meal for Athletes. Report on a Field Trial*, *Jour. Amer. Med. Assn.*, 178, 30, (1961).

11. Cooper, D. L., Bird, B. and Blair, J., *Use of a Liquid Meal in a Football Training Program*, *Jour. Okla. State Med. Assn.*, Dec. 1962, pp. 484-486.
12. Thomas D., *A Report on Liquid Meal Diet for Weight Control*, *Amateur Wrestling News*, Jan. 1963, p. 9.
13. Samka, Wm., *Athletic Conditioning and The Liquid Meal*, Address Presented at the All-American Clinic, Bemidji, Minn., Aug. 1963.
14. Guild, W., *Pre-Event Nutrition, with some Implications for Endurance of Athletes*, in "Exercise and Fitness," a Colloquium, The Univ. of Illinois College of Phys. Ed. and the Athletic Institute, 1960, pp. 135-137.

New Books

A review of Physiology of Strength by Teodor Hettinger, M.D., price \$4.50, pp. 84 with illustrations. C. C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1962, follows.

This book presents conclusions and results obtained on exercise physiology by the author after ten years of testing over two hundred subjects at the Max-Planck-Institut, Dortmund, Germany.

Of particular interest to trainers are his findings dealing with isometric exercise. There he deals not basically with positions for isometrics, but with the building and maintenance of strength through a brief isometric contraction. As almost everyone concerned with isometrics has a somewhat different idea as to how best to implement an adequate stimulus for these exercises, few have actual statistical proof to back up their views. Hettinger, through his research, contends that the stronger the contraction, the shorter the contraction time, and that only one maximal isometric contraction per day for two seconds will provide adequate stimulation for optimal muscle growth. This exercise is performed in only one position and he makes no comparison to an isometric contraction at different joint angles. He also states that the stimulus time necessary to maintain or build maximum muscle strength increases with a less than maximum contraction.

Also presented in this book are such subjects as factors of muscle trainability, strength in relation to sex, training with dynamometers by which you can measure an isometric contraction and some specific isometric exercises.

The book attempts to answer the question of how one can best train a muscle to its optimum efficiency with a minimum of time, effort, and apparatus; also the effects of rest on training—how to maintain strength with infrequent training periods.

While this book certainly does not answer all questions on isometrics, it does provide a solid basis that has been proven by Hettinger's research and has been verified by other researchers. I feel that this book will be a useful addition to a trainer's library.

Joe Gieck, R. P. T.
Head Trainer
University of Virginia

The Burdick Corporation has a new Syllabus called the Burdick Syllabus, a Compendium of Electromedical Therapy which is prepared by the Educational Department of the Burdick Corporation, Milton, Wisconsin. In the opinion of the Editor this Syllabus would be very fine reading material for any training room which engages in electrotherapy of any sort. It can answer many of the mysterious questions that the beginners have in regard to what actually happens in the process of electrotherapy. This book can be secured probably through your local Burdick dealer.

The Editor



KEEP YOUR TEAM AHEAD

with

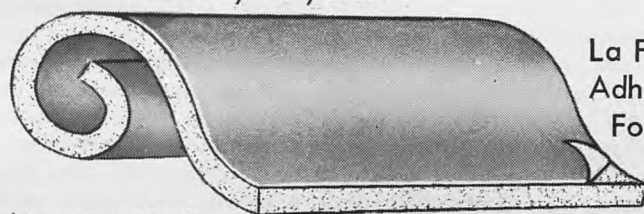
E-Z Walk's *Complete Line* of

FOOT REMEDIES

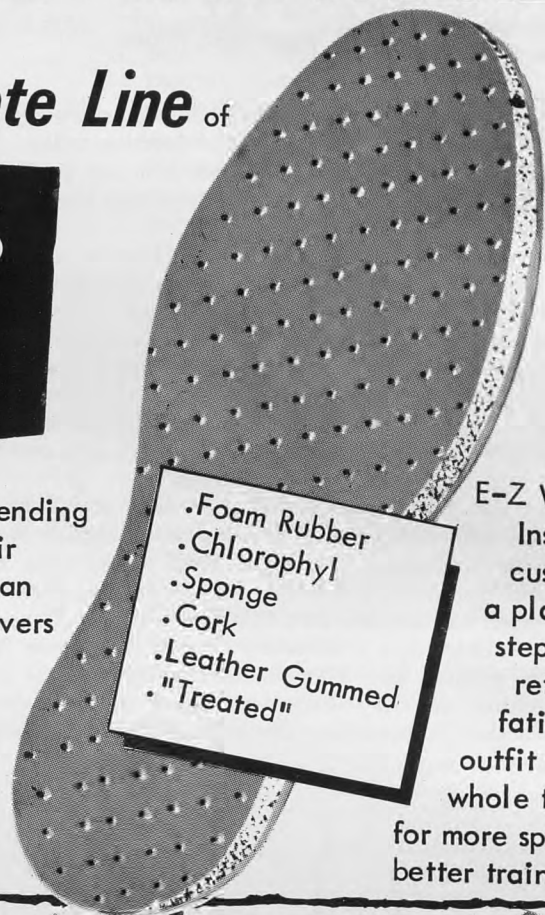
for the

ATHLETE

More and more coaches and trainers are depending on the E-Z Walk line of Foot Reliefs for their athletes. Wherever footwork counts---you can count on E-Z Walk---Specialists in Foot Savers for nearly 40 years.

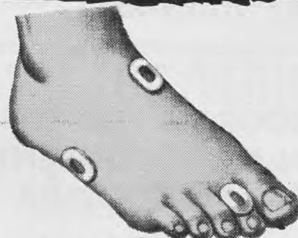


La Fome
Adhesive
Foam



.Foam Rubber
.Chlorophyl
.Sponge
.Cork
.Leather Gummed
."Treated"

E-Z Walk
Insoles
cushion
a players
steps---
retards
fatigue!
outfit your
whole team
for more speed,
better training!



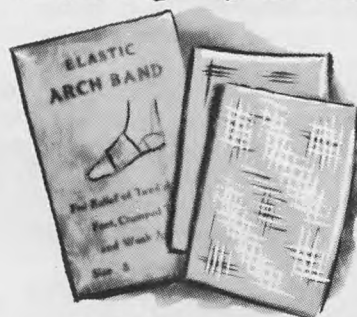
Propody Pads and Felt



E-Z Walk Pinch and Bite Pads



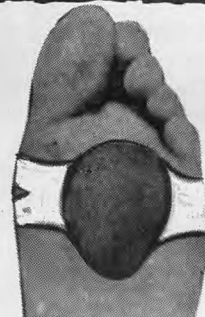
E-Z Walk Tongue Pads



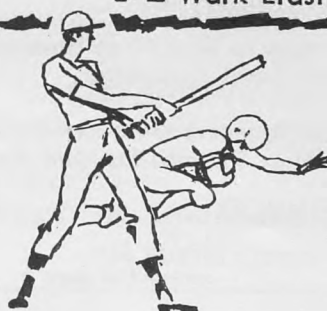
E-Z Walk Elastic Arch Band



E-Z Walk Heel Cushions



Elastic Met-Band



Write for Brochure and prices on complete line of E-Z Walk foot reliefs for athletes.

E-Z WALK CORP.

104 WEST 17th ST. NEW YORK 11, N. Y.

"An E-Z Walk for walking comfort"

Shin Splints: Another Strapping Procedure

Carl Nelson, P.R.T.
Colby College, Waterville, Maine

The everlasting shin split problem has been discussed as much as any minor problem in athletic training today.

Shin plints are found in all sports, but are probably more prevalent in track men who pound the hard track daily.

There are probably as many different theories concerning the cause, effect and treatment of shin splints as there are strapping procedures. Some authorities believe that the cause of shin splints is due to excessive strain on the tibialis posterior muscle; others believe that a branch of the tibial nerve is involved or that periosteal irritation of the tibia is the cause of pain along the medial aspect of the distal third of the tibia. It could very well be a combination of any or all of these possibilities.

Most of the therapeutic modalities such as whirlpool, ultra sound and diathermy offer some relief and are indicated in the treatment procedure. Rest is probably the most sound treatment procedure whenever it is possible.

It has been our observation that the chronic offenders with shin splints have a tendency to run with their feet everted or pointed out. This places excessive strain and overstretching on the tibialis posterior tendon whose primary action is inversion of the foot from a plantar flexed position.

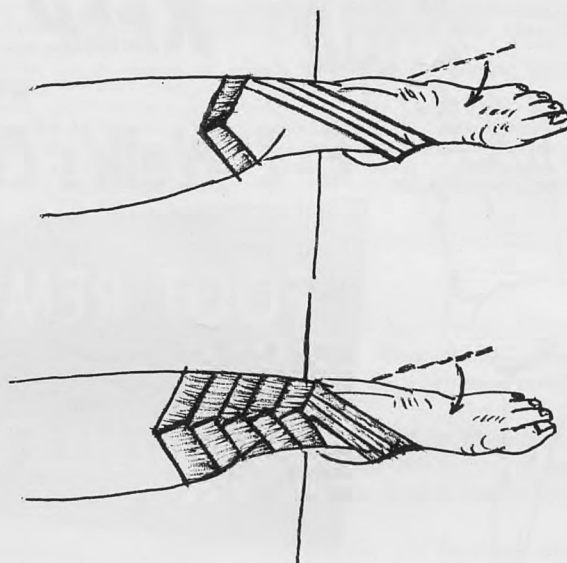
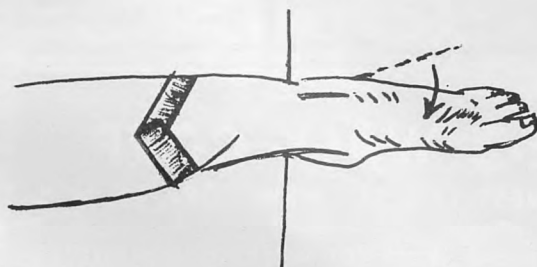


Action of Tibialis Posterior Muscle

A simple deviation from the conventional strapping has been employed at Colby with better than average success.

1. The foot is placed in a plantar flexed position and inverted about half way through its complete range of motion. An anchor is placed well up on the lower leg, applied from the lateral to the medial side to pull up on the gastrocnemius muscle.

2. Three stirrup straps are next applied. The first is applied from the lateral aspect of the anchor, crosses under the posterior arch and up over the anterior aspect



of the ankle to finish at the starting point. The second and third stirrups are applied in the same manner, but are each moved anterior one half inch.

3. The area is then anchored at the top and closed in applying straps laterally to medially down to the anterior ankle joint.

In order to help offer added relief a sponge innersole is inserted in the shoe and in some cases a half inch heel pad helps. The strapping procedure should continue during workouts until all soreness and pain subsides.

Daily workouts which continue during the past treatment period should include adequate time spent on the correction of the faulty running pattern.

TENTATIVE PROGRAM FOR THE 1964 NATIONAL N.A.T.A. CONVENTION STANFORD, CALIFORNIA

Sunday, June 7th

- 3:00 P.M. Registration — Rickey's Hyatt House. (It is requested that all exhibitors be completely set up by this time.)
- 6:30 P.M. Dinner and refreshments (in the relaxed California manner) at poolside — Rickey's Hyatt House. Courtesy of the Kendall (Bike Web) Company and Mr. Dave Thomas.

Monday, June 8th

- 7:30 A.M. Registration continues . . . Rickey's Hyatt House.
- 8:00 A.M. Board the bus at Rickey's for the Convention Opening Exercises to be held at Stanford University Dinkelspiel Auditorium.
- 8:30 A.M. Invocation —
- 8:35 A.M. Welcome address—Speakers to be introduced by District 8 Host Trainer—Mr. Jim Van Duesen.
- 8:55 A.M. Introduction of Exhibitors — Mr. Warren Atrial.

continued on page 7

TENTATIVE PROGRAM

(continued)

- 9:10 A.M. "A Football Injury Case History" (Film and Lecture) Dr. Frederick Behling, M.D., Team Physician—Stanford University, Stanford, California.
- 10:30 A.M. Break (Refreshments to be served.)
- 11:00 A.M. The National Business Meeting.
- 12:30 P.M. Board the bus for return trip to Rickey's. (Exhibits will be open.)
- 1:00 P.M. Snack-lunch and cocktails to be served at Exhibits area. (Sponsors to be named later.)
- 2:30 P.M. Student-Trainer-Clinic—Three nationally prominent athletic trainers will demonstrate their own techniques for *taping*, *strapping* and taking care of different parts of the body. (This section is especially geared for student-trainers, student-managers and team physicians.)
- 7:30 P.M. The Second Annual Honorary Membership Banquet—Rickey's Hyatt House. (Arrangements to be made by Mr. Tom Healion.)
- 8:45 P.M. Banquet Speaker—To be introduced by the National Director of the N.A.T.A., Mr. Tom Healion.

Tuesday, June 9th

- 8:00 A.M. Exhibits open.
- 8:30 A.M. Two sections with either section left to personal choice. Section I. "Skin Disorders

Commonly Seen in Athletics." Section II. "Cardiac Massage."

- 9:15 A.M. Break (Exhibits open.)
- 9:45 A.M. "Progressive Resistive Exercises for Football." Mr. Millard Kelley, Detroit Lions, Detroit, Michigan.
- 10:30 A.M. Two Athletic Trainer panels with either panel left to personal choice. Panel A. Ed Pillings—Narrator (Panel members to be named later.) Panel B. Jack Rockwell—Narrator (Panel members to be named later.)
- 11:15 A.M. Break (Exhibits open.)
- 11:45 A.M. *Two views of one point*—"Medical Aspects of Modern-day Athletic Equipment." Dr. James L. Schamadan, A.F.I.P. and Dr. Palmer, M.D., Seattle, Washington.
- 12:45 P.M. "Keeping the Air-Passage Clear." Dr. Dwiggins, M.D. (Anesthetist), Palo Alto, California.
- 1:30 P.M. Dismissal. (Exhibits open.)
- 2:30 P.M. Second Session of the *Student-Trainer-Clinic*.
- 3:30 P.M. Demonstration of Athletic Training Modalities at Stanford University Training Quarters—Connie Jarvis.
- This will be followed by a Demonstration of P.R.E. by Millard Kelley.
- 8:00 P.M. Giant Baseball?

continued on page 8

Now.. for Athletic Mouthpieces!

A Scientifically Formulated Antiseptic Spray Which Deters Oral Bacteria!

HYGIENIC PROTECTION K-7 is clinically formulated to assure maximum protection against bacteria that attack the mouth and to deter recontamination while mouthpiece is in storage.

EASY APPLICATION K-7 is applied by simply tilting the bottle to a 45° angle and gently squeezing. It sprays the mouthpiece thoroughly. Use K-7 everytime the mouthpiece is inserted . . . and after each use.

500 SPRAYS—This No Spill, No Drip, No Break, 8 ounce squeeze bottle contains enough clean, refreshing, bacteria deterrent for 500 uses.

GOPHER CHEMICAL COMPANY

716 EUSTIS STREET

ST. PAUL 14, MINNESOTA



TENTATIVE PROGRAM

(continued)

Wednesday, June 10th

- 8:00 A.M. Exhibits open.
 8:30 A.M. Two sections.
 Section 1. "Pads and treatment procedures for foot problems."
 Section 2. "Aseptic procedures in the training room."
 9:15 A.M. Break (Exhibits open.)
 9:45 A.M. Two Athletic Trainer Panels.
 Panel C. Bob Nicolette—Narrator.
 Panel D. Elmer Brown—Narrator.
 10:30 A.M. "Soft tissue injuries with special emphasis on the question: Why does a well conditioned athlete pull a muscle?"
 11:30 A.M. Drawing for Door Prizes.
 12:00 P.M. The 15th Annual Meeting will stand adjourned.



William "Pinky" Newell, Executive Secretary of the N.A.T.A. A man dedicated to the betterment of the training profession.

The Four-Way Test

The following article is a reprint from the magazine *The Rotarian* for September 1957. Could this not be used by the trainers around the country in helping them make decisions? I, personally, would like to see it adopted as an association policy.

"Late in 1955 Walter O. LeGrande, a Daytona Beach pharmacist for 25 years and a Rotarian leader in the U. S. South—he was a District Governor of Rotary in 1950-51—came up with an idea: adopt on a community-wide basis a plan known as The Four-Way Test which Rotary Clubs had put into practice in many schools with marked success. The plan urged those who adopted it to evaluate all decisions on these four points:

1. It is the TRUTH?
2. Is it FAIR to all concerned?
3. Will it build GOODWILL and BETTER FRIENDSHIPS?
4. Will it be BENEFICIAL to all concerned?

The simplicity of the Four-Way Test makes some people regard it as little more than a moral yardstick for children. Yet these precepts amount to a personal check list of the ethics most men want to live by. Herbert J. Taylor, of Chicago, originator of the Test, in 1933 materially helped to salvage an aluminum ware company from bankruptcy by applying it. Taylor devised the four points as company policy for salesmen, the advertising and personnel departments, and customer relations. The fairness of the program soon spurred company morale, and its honesty won the trust and faith of customers in both the firm's product and promises. Later Rotary International, which has a copyright on The Four-Way Test, developed it as a project for schools. It was given its first school-wide adoption in the Kenosha, Wisconsin, school system, where it produced such good results among students that it has been expanded to schools in 24 countries."

The Editor

MUSCLE STRAIN

Eddie Wojecki
 Athletic Trainer
 William Marsh Rice University

For practical reasons it is essential that the athletic trainer be competent in recognizing the average sports injury and as many of the treatments recommended that are initially in the nature of first aid. The treatment will be carried out according to the prescription of the team physician following his diagnosis.

In all sports injuries the length of disability depends entirely on the speed and type of initial treatment rendered. Therefore the athletic trainer must be able to recognize the common sports injuries and know the initial treatment. The ability to recognize soft tissue lesions is something much to be desired.

Certain conditions have been labeled with titles which give the trainer very little aid as to recognition and often are positively misleading. This paper, therefore, attempts to set out a simple pattern of examination. In other words, an attempt is made to find the origin of pain by mechanical means of passive and voluntary movements. The importance here is again measured so that exactness of areas may be helpful in early recognition, and immediate treatment.

Muscle lesions are classed as:

- (1) Bruise; (2) Stone Bruise; (3) Traumatica myositis ossificant; (4) Muscle Strain; (5) Ruptured Muscles; (6) Cramp in Muscle; (7) Tenosynovitis; and (8) Shin Splints.

The substance of this paper will be on muscle strain—a term used by the medical profession to an injury of muscular tissue or the fibrous structures surrounding the muscles. Muscle strains are caused by overstretching or contracting of muscle out of proportion of their strength. Reasons will vary from lack of warm up, passive stretch-

continued on page 10

ONLY
BIKE[®]
 CAN DELIVER
 OVERNIGHT
 HEAT THERAPY



Penetrating THERMO PACK ANALGESIC formula even works while they sleep...gets 'em back into action in half the time!

Long-lasting Bike Thermo Pack formula offers a practical way to maintain healing, soothing heat at therapeutic levels for up to 12 hours. Tissue repair and the healing process can be maintained continuously. What's more, methyl nicotinate, the special ingredient in the Bike formula, penetrates, delivers twice the heat in half the time. Strained and damaged muscles and tissue get maximum help in minimum time. Proven best by scientific laboratory research...and two years of actual use. Compare Bike Thermo Pack with other brands. One two-pound can tells the story!

Sold only by sporting goods dealers.

Big economy sized 2-pound can with screw top costs 6% LESS than two competitive 1-pound cans.



Research has also improved the rest of the BIKE "BIG 5" line: Anti-Fungal Spray, Foam Liniment, Foot and Body Powder and Formula 87 Skin Toughener!



THE **KENDALL** COMPANY
 BIKE SALES DIVISION

MUSCLE STRAIN

(continued)

ing, a sudden change of direction, sudden demand on extra power or a sudden thrust. This syndrome general as it is implies primarily to the track athlete. The demand on perfect synchronization of the hamstrings and the quadriceps group of muscles is very noticeable in the track athlete more so than any other group of athletes. In the athletic sphere the muscle strain regardless of mildness or severity is termed a "pulled muscle." The terminology may be misleading yet it truly classifies a muscle lesion which may occur as a mild or severe condition. A mild condition presents microscopic tears in the fibers and is often called a spasm. The severe condition is an extensive injury to the fibers, and the muscle may be pulled from its attachment to the periosteum or tendon. You will recall Professor Leriche's theory here on myositis ossificans. Any time you have damage to the periosteum you can be assured of a union of the periosteal cells with the hemorrhage resulting in myositis ossificans, a severe hematoma. The blood tumor eventually calcifies, and a deposit forms in the muscle, from the bone. The herniated muscle is a condition which involves muscle sheath and the muscle tissue protrudes.

Recalling the early remarks on the importance of competent findings and speedy initial treatments, we are now set on two facts in which importance must be stressed.

1. Recognition

A. History

This must be as complete as possible and must include

- 1) Exactly how it occurred
 - a. Demonstration by the athlete of the incident
 - b. Check warm-up period and stretching
- 2) Has injury occurred previously and how?
- 3) Was there swelling, discoloration in previous injury?
- 4) What was the duration of previous injury before full recovery?

2. Examination

The method of examination of a pulled muscle is a passive functional test called muscle testing and is very important factor in prognosis and treatment of muscular lesions. Muscle testing requires both a comprehensive and detailed understanding of anatomy and muscle function. Look for signs of effusion, swelling and bruising. Make a comparison with the opposite leg. Look for the unusual appearance of the surface anatomy. Palpation of the injured area may reveal a hemorrhage. You will definitely feel a fluctuation. Follow this with the functional test for the various groups of muscles. Although the athlete may be in a prone position for the hamstring test, it is advisable to observe his eyes for they will convey a possible expression of pain. You must remember you are dealing with youth and an individual who is trying to hide his injury so that he can continue in his event. Examination of the voluntary, passive and resisted movement of muscle groups is very essential in muscle lesion. Summarizing these two points as:

1. Recognition—listening to the injured athlete;
2. Examination—looking and comparing.

The next step is treatment and to better understand our steps in treatment may we just take a few minutes and refresh your minds on the pathology of repair according to Dr. Thorndike:

1. Hemorrhage

2. Hematoma formation
3. Hematoma absorption
4. Healing by fibroblastic proliferation.

Hemorrhage is a result of injury and the degree of tear in muscle strain varies from a mild tear of a few fibers to a complete tear or rupture of the whole muscle or tendon. As a result of this injury there is bleeding of capillaries and blood vessels in the area torn and the surrounding tissue. Our initial treatment would be to control the hemorrhage, then to limit the size of hematoma and extravasation of fluids to the tissues. The larger the extravasation, naturally, the longer period of absorption. To promote the full power of lymphatic absorption moderate exercise or weight bearing must be executed and normal gait encouraged.

The use of heat is best delayed until all danger of extravasation of fluids in the tissues has subsided. The use of elastic compression bandage is essential. We recommend the combination of elastic compression bandage and cold application. Ice bags or sponges to hold cold water. At the same time the athlete uses moderate weight bearing, he walks rapidly or even jogs as the injury allows. The more and the longer he is active the sooner the pain will subside. The neurovascular reflex must be impaired and mild exercise will short circuit the reflex, stopping acute pain. The pressure bandage will minimize the size of the hematoma and the cold application controls the hemorrhage. The mild exercise will exude the extravasation of fluids. At the present time, there are buccal, oral and injections that are recommended and used by many team physicians to control the extravasation of fluid and to minimize the size of hematoma, thus speeding recovery. More accurately, the trypsin helps in the absorption primarily . . .

to promote fibroblastic proliferation some form of moderate heat is recommended. We recommend a counter irritant such as an analgesic balm, in athletics better known as a "hot pack." This heat is very mild and does not penetrate the depth of tissue.

REHABILITATION:

The old adage "Treat and Train," may be Spartan to many of the lay group; however, you must remember you are dealing with youth and the recovery of these youngsters is amazing at times. Besides that is part of athletics you are teaching the young man . . . to be "tough" and not complain about minor aches and pains.

Muscles undergo enlargement with use of exercise, whereas they become smaller and undergo wasting with disuse. Rehabilitation is as important as the treatment for what good is to treat an injury if you don't bring it back to its original strength. As a matter of fact when you treat an injury you treat the effect, but to eliminate the cause you must rebuild the muscle at least to its original strength. Jogging, stretching and resistive exercises, so he won't over do. Knowing that his position is in jeopardy unless he returns to the team as soon as possible this youngster will take it upon himself to do twice as much to speed recovery. The quadriceps and the hamstring group must be developed or strengthened at the same time. After all, to have normal function these two groups must be synchronized. Skills come from perfect balance of these two groups of muscles. No other study of the body can be more fascinating than myology.

Summarizing for emphasis of the important factors of muscle strain:

continued on page 12

Johnson & Johnson

POROUS athletic tapes

PERMIT THE SKIN TO "BREATHE"

Pore-like holes in the adhesive coating only, allow release of perspiration—without weakening fabric strength.

ASSURE TAPING SPEED

Patented "Controlled Tension" provides free and easy unwind, from beginning to end of every roll, without sacrificing "stick."

REMOVE CLEANLY FROM SKIN...

...LEAVE NO ADHESIVE RESIDUE

ZONAS® for maximum versatility

REGULAR WEIGHT • HIGH STRENGTH

MODERATE COST • WATER-RESISTANT

(also available non-porous)

ZO® EXTRA-HEAVY WEIGHT (also available non-porous)

• MAXIMUM SUPPORT • WATER-RESISTANT

Not to be confused with light weight tapes labeled "zinc oxide"

COACH® MEDIUM WEIGHT

• MAXIMUM ECONOMY • WATER RESISTANT

ELASTIKON® ELASTIC BACKCLOTH

• CONTROLLED SUPPORT • FLESH-COLORED

• CONFORMS-FLEXES



Products bearing the Red Cross Trademark have no connection with the American National Red Cross

© J & J 1962

MUSCLE STRAIN

(continued)

1. Recognition:

The athlete fully describing the incident in his demonstration will reveal the many symptoms which you will be acquainted with through experience;

Be sure you have the past history on the injury (especially the chronic which was not rehabilitated to the original strength).

2. Examination:

Be very positive in your findings; your final decision must be accurate. Know your anatomy and muscle testing.

3. Treatment:

I — ice, cold water

C — compression bandage

E — elevation—exercise

a. Compression, cold application and mild exercise.

There are many more successful medical doctors and athletic trainers who use the fundamental and conservative type treatment. The percentage is always on your side . . . also, the reoccurrences of injuries is held at a minimum.

4. Rehabilitation:

Very easily overlooked and disregarded because of the presence of time and demand. However, you must remember that unless you regain original strength in muscle or joint, the athlete will falter when the chips are down. The reoccurrence of any injury involves complications and definitely a mental problem.

. . . May I quote the first many to consider the athletic trainer?

"When the question is asked whether a man is good,
One is not interested in what he believes . . . or,
What are his hopes,
But only what he loves."

St. Augustine

AN ISOMETRIC STRENGTH PROGRAM FOR BASKETBALL

by Joe Brown
Basketball Trainer
University of Kentucky

Strength, the ability of a muscle to work against resistance,¹ is necessary to pass the basketball hard and fast, to shoot goals from out on the floor, to drive in for layups, to rebound and to start and stop quickly. It is derived from a muscle or a combination of muscles² and is developed to satisfy needs created by force exerted during the job. Utilization of a program of isometric contractions will easily and quickly develop strength necessary for efficient basketball teams.

A brief resume of research and experience in isometrics indicates that:

1. The isometric exercise is a contraction of a muscle or a group of muscles against an immovable resistance.

2. The isometric exercise involves little or no movement but develops tension in a specific muscle group, thereby increasing muscle strength.

3. Isometrics may increase muscle strength an average of five percent per week with one six to eight second contraction per day.

4. The isometric muscle strengthening program is equal to or better than a weight program.

5. Isometric exercise programs are the least time consuming and the least expensive of the muscle strengthening programs now in use.

6. Anyone with a basic knowledge of anatomy and kinesiology can convert any regular exercise to an isometric contraction.

7. Isometric exercises are becoming increasingly more popular for muscle strengthening.³

Following are illustrations of bar techniques for a muscle strengthening program for basketball. This program is based on sound physiological, anatomical, and kinesiological principles and may confidently be incorporated in basketball strength programs.

The bar technique of isometric exercising is quite popular among athletic teams, and the special equipment which it requires can be either purchased or made in the school's manual training shop. Essentially, the bar technique requires two upright poles with equally spaced holes or rungs and a moveable cross bar. The following pattern can be used to construct an isometric rack from either wood or metal.

The isometric rack is constructed of two 2x8's or 4x4's each eight feet long. Holes 1½ inches in diameter are drilled offset every three inches. These uprights are spaced 39 to 42 inches apart and are either placed in 36 inches of concrete or bolted to a sturdy base. A 1¼ inches cold rolled steel bar should be purchased for use as a cross bar.⁴

Following are illustrations of bar techniques of isometric exercises for basketball. Each of the illustrations describes the exercises as well as the body area worked. *Exercise 1 (The Dead Hang)*



Exercise 1 and 7
The Dead Hang
Bar Just Above Arms Reach

continued on page 13

ISOMETRIC STRENGTH

(continued)

Position the bar above arm's reach. With an overhand grip, grasp the bar and hung for eight to ten seconds in order to stretch the trunk and arm muscles.

Exercise 2 (The Military Press)



Exercise 2
Military Press
Bar At Brow Level

Position the bar at brow height. Stand close to the bar with feet spread shoulder width apart; with both hands at shoulder width grasp the bar. Keep legs and back straight, tense leg and stomach muscles, and look straight ahead while pushing against the bar in order to strengthen the shoulder and tricep muscles.

Exercise 3 (The Toe Rise)



Exercise 3
The Toe Raise
Bar At Shoulder Level

continued on page 14

N.A.T.A.

15th ANNUAL
MEETING

PALO ALTO,
CALIFORNIA,

JUNE

7, 8, 9, 10,

1964



STEAM PACK

U. S. Pat. No. 2,710,008

Master Units automatically maintain Steam Packs in water at proper temperature — constantly ready for immediate use. No plumbing required. Console Models available for 8 and 12 packs; Table Models for 2, 4, and 8 packs.



MODEL E-1
4 PACK

EFFECTIVE MOIST HEAT EASILY APPLIED

At least 30 minutes of effective MOIST HEAT with each application. Hundreds of treatments from each Steam Pack.



Use on Neck, Shoulders, Back or Extremities

- Several players may be treated at the same time.
- No special technique or training needed.
- Moist heat with all of its advantages.
- Convenient, simple, safe, effective.
- Low cost investment
(Complete units—\$39.50 and up).



CHATTANOOGA PHARMACAL CO., INC.
2400 DAYTON BLVD., CHATTANOOGA 5, TENN.

HYDROCOLLATOR®

Steam
PACK

Send for literature
and prices

APPROVED ATHLETE'S FOOT CONTROL



Controlled medical tests* prove the value of ONOX SKIN-TOUGHENER for treatment and prevention of athlete's foot.

*RESEARCH QUARTERLY



Test Onox in your shower rooms for 60 days. If not fully satisfied you pay nothing. Sold direct from manufacturer. For complete information and medical reports write: Dept. ATA

ONOX®

ONOX, INC., 121 SECOND STREET
SAN FRANCISCO 5, CALIFORNIA

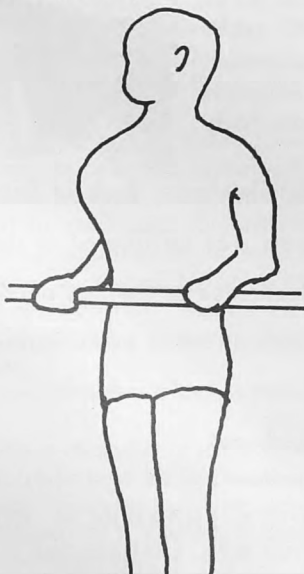
Warehouses: Murray Hill, N. J.; Cleveland
Ohio; Memphis, Tenn.; Newark, California

ISOMETRIC STRENGTH

(continued)

Position the bar at shoulder height. Stand close to the bar with feet spread shoulder width apart, and place the bar on the neck. Keep back and legs straight; grasp the bar with both hands at extreme width and rise on toes in order to strengthen calf, feet, and arches.

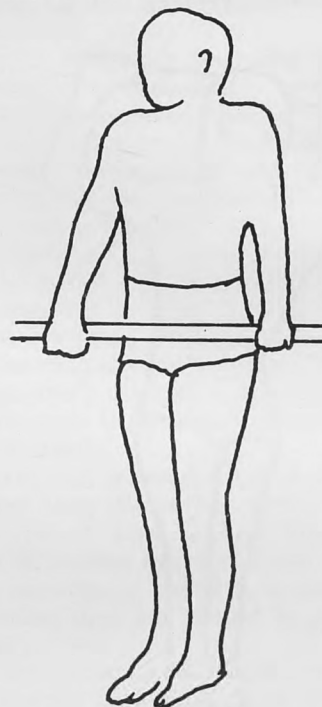
Exercise 4 (The Arm Curl)



Exercise 4
The Arm Curl
Bar At Waist Level

Position the bar at waist height. Stand close to the bar and grasp it with both hands palms up and forearms parallel with the floor. Without moving elbows, curl bar toward shoulders in order to strengthen the bicep and forearm muscles.

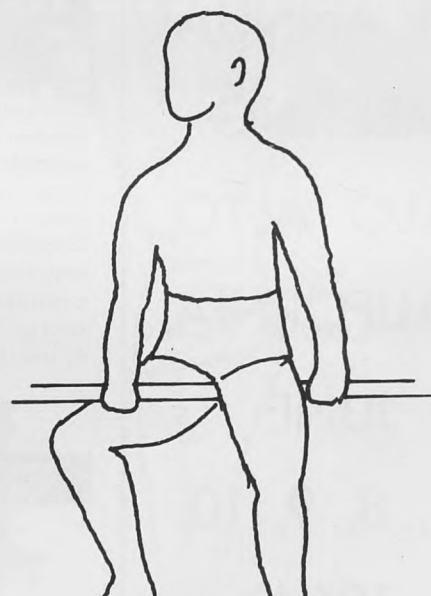
Exercise 5 (The Shoulder Shrug)



Exercise 5
The Shoulder Shrug
Bar At Arms Length

Position the bar at arm's length. Stand close to the bar with feet spread shoulder width apart. Grasp the bar with both hands slightly more than shoulder width apart. Without bending elbows, raise shoulders as high as possible in order to strengthen the muscles of the upper shoulders and back.

Exercise 6 (The Straddle Lift)



Exercise 6
The Straddle Lift
Sitting Position—Half Knee Bend

continued on page 15

ISOMETRIC STRENGTH

(continued)

Position the bar for sitting at a half knee bend. Stand astride the bar with feet shoulder width apart. Grasp it with both hands, one in front of body, one behind. Look straight ahead with back straight and lift on the bar with the legs in order to strengthen the thighs and lower back muscles.

Exercise 7 (The Dead Hang)

Position the bar above arm's reach. Using an overhand grip, hang from the bar for eight to ten seconds in order to stretch the body muscles, particularly those of the shoulder, arms, and low back.

FOOTNOTES

1. Laurence E. Morehouse and Augustus T. Miller, *Physiology of Exercise*, 2nd ed. (St. Louis: The C. V. Mosby Co., 1953), p. 209.
2. John Bunn, *Scientific Principles of Coaching* (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1955), pp. 42-43.
3. Joe Brown, "Manual Testing and Static Exercise: Are They Out of Place in the Athletic Program?," *Whistle* (January, 1963), p. 5.
4. John W. Payne, "Functional Isometrics for Football," Mimeographed Material, Fall, 1962.

LEGAL LIABILITIES OF TEAM PHYSICIAN*

JAMES S. FEURIG, M.D.
Michigan State University
East Lansing, Michigan

Law suits claiming negligence against team physicians, coaches, athletic trainers, and school officials, are greatly increasing in numbers. From the standpoint of potential legal liability, the team physician is in a very vulnerable position. He may find himself involved in legal action either through a "tort liability" charge or through a direct malpractice suit. In either instance, the basis for complaint will be negligence upon his part. The team physician must be fully cognizant of his responsibilities and must perform his duties to the very best of his ability. He cannot become negligent in any area of his work without very likely becoming involved in the litigation trends of this day and age.

On February 11, 1958, a jury in California awarded a 17-year-old high school football player \$325,000 in his damage suit against the school district for which he played. This student alleged that he had been paralyzed as a result of injuries sustained in a sanctioned football game. The trial judge later reduced the award to \$206,804.

This case very dramatically pointed out the fact that educational institutions and persons connected with their sports programs are subject to legal liabilities, under certain circumstances, for injuries occurring during sports participation.

In general, this liability is established through what is called "tort liability." This is liability for personal injuries caused through the defendant's negligence. To succeed, any cause of action in tort involves the proof of four essential elements, which are:

1. That the defendant owed a duty to avoid unreasonable risks to others.
2. That the defendant failed to observe that duty.
3. That failure to observe the duty caused the damage which occurred.
4. That damage did in fact occur to the plaintiff and that the nature and probable extent of the damage are established proofs.

It is the trend of the times to expand the areas in which tort liability is applicable and also to increase the size of tort awards. In this day and age, the tort case has become a reality in the realm of sports and its existence cannot be minimized. Suits claiming negligence against team physi-

cians, coaches, trainers, and school officials, are increasing greatly.

Physicians serving as team physicians may find themselves involved in legal action either through this tort liability process or through direct malpractice suits. Tort cases involve the educational institution per se, or a cited number of defendants. Regardless of how the defendant is stipulated, the team physician will usually be involved. In direct malpractice action, he is always the defendant.

In nearly all states, the plaintiff will hold to the premise that the responsibility for the diagnosis and the treatment of sports injuries should not be imposed on coaches and trainers, and that it must be assumed and duly discharged by a physician. With this attitude, the team physician will be the major defendant in practically all litigation cases.

Irrespective of the type of legal action instituted—either tort liability or malpractice—the prime charge with which the team physician will be confronted will be negligence on his part. The team physician can be held legally liable for any acts that a jury might construe as negligence. The patient-doctor relationship exists between him and every member of the teams under his care. It is immaterial whether diagnosis or therapy are performed for a fee or for gratis. The law makes no distinction between a charity case and a fee case.

There is a rather widespread, erroneous concept existent today and that is the belief that team physicians who are employed by state-owned educational institutions, cannot be sued. For years it has been a popular contention that one cannot sue the state. This same type of thinking has given vent to the impression that legal action can occur only if the state accepts the suit. Factually, a team physician enjoys absolutely no liability immunity by being employed by a state institution.

For a team physician, the statute of limitations, which varies in the different states, is no safeguard against action by a minor as he can withhold a suit for negligence until he reaches maturity.

Almost universally, from the injury standpoint, the athletic trainer is regarded as an agent of the team physician and negligence on his part is very often imputed to said physician.

The liability problems arising from injuries sustained in sports are contingent upon the same factors as those which are encountered in private practice. They are based upon the premise that there has been a failure to follow the standard procedures and the established methods for treatment of an injury. The team physician should always professionally conduct himself just as if he were engaged in private practice.

Liability suits can arise from many and varied types of negligence charges. Some of these accusations seem almost petty, but nevertheless they can be the basis for an award. The following situations can be causes of action and it is important to be aware of them:

(Not listed in the order of incidence or degree of gravity.)

1. Failure to recognize an injury.
2. Failure to prescribe physiotherapy or rehabilitation exercises.
3. Physically qualifying a participant with known limitations for a sport with strenuous physical demands and a high trauma incidence. (The signed permission of a parent authorizing the participation in a sport means nothing if negligence in this area can be established.)
4. Permitting an injured athlete to return to participa-

continued on page 16

*Presented before the Section on Athletic Medicine, American College Health Association, Thirty-ninth Annual Meeting, Detroit, Michigan, April 27, 1961.

LEGAL LIABILITIES

(continued)

tion in the game he was hurt in (or even at a later date) when his physical condition does not intelligently warrant such activity.

5. Premature termination of treatment.
6. Failure to "follow-up" a case which you have treated. (This may be construed as abandonment of treatment.)
7. Failure to refer for consultation. (Most liability suits due to this cause arise from so-called "improper handling" of concussion, ocular, facial, and significant muscle-bone-joint injuries.)
8. Failure to properly handle head injuries.
9. Failure to explain preoperatively, to both the parents and the injured, any surgical procedures anticipated and the possible end results of said surgery.
10. Promising a "full," "excellent," or "good" recovery for a specific case and then being able to produce only a partial recovery so that a permanent disability remains in evidence.
11. Inadequate recovery in a case which you "have tried something new." (Legally this may be regarded as unwarranted experimentation.)
12. Failure to x-ray an area of trauma.
13. Failure to check a cast after its application for abnormal construction or compression.
14. Failure to check x-ray a fracture or dislocation after the cast has been applied.
15. Failure to administer anti-tetanus serum or tetanus toxoid when reasonably or commonly indicated.
16. Failure to elicit an allergy history before administering or prescribing medications.

In order to function as a good team physician, one must:

1. Use good medical judgment in diagnosis and treatment.
2. Utilize freely good consultants.
3. Follow and control all sports injury cases.
4. Maintain good medical records.
5. Have a firm and inflexible injury control program with the respective coaches and athletic trainers.
6. Have an excellent working relationship with the athletic trainers. (Work with these individuals just as you would with a colleague in the medical profession. In litigation cases, the athletic trainer is usually regarded as working under and following the directives of a physician.)
7. Disqualify an individual for participation in a sport if the physical status quo warrants so doing. (Don't permit anybody to pressure you and make you change your mind.)
8. Keep the respective parents of an injured athlete well informed.
9. Never "promise" an athlete or his parents that the case in question "will have no residual limitations or deformities."

A team physician should always be covered by malpractice insurance. One of the following two types should be in effect:

1. Institutional policy (covers all functions of Health Service staff personnel.)
2. Individual policy.

From the standpoint of potential legal liability, the team physician is in a very vulnerable position. He must be fully cognizant of this fact and must perform his duties to the very best of his ability. He cannot become negligent in any area of his work without very likely becoming involved in the litigation trends of this day and age.

HEADQUARTERS FOR 1964 N.A.T.A MEETING



Ricker's hyatt house hotel

4219 EL CAMINO REAL
PALO ALTO, CALIFORNIA
DA 5-3231



A VACATION IN PARADISE IN THE HEART OF STANFORD COUNTRY.....Beautiful garden hotel with twin swimming pools, luxurious accommodations, world famous restaurant. Perfect for dinner, a day, a weekend or extended vacation. Banquet rooms for from 10 to 600 persons. Business conferences: private facilities for up to 400 persons.

GREATEST IMPROVEMENT IN MOUTHPIECES IN TEN YEARS!...

Featherbite, the standard of excellence in protective mouthpieces is now better than ever. **NEW** lighter weight, **NEW** and better shock-absorbing qualities. **EASIER TO FIT** . . . only Featherbite offers fast group fitting—up to 60 players can be fitted in 60 minutes. **Only Featherbite** gives real dental injury insurance up to \$250. And remember . . . **only Featherbite** has documented proof of being a specific in the prevention of dental injuries.

New Featherbite Junior

Now Featherbite is also available in the new junior size for the junior age athlete. Featherbite Junior has the same fine protective features, the same insurance policy as the regular Featherbite. School price, only \$3.85.

Costs Less Because It Lasts Longer

Featherbite will last a full season or more. Made of tough, highly resilient pure gum rubber. Most comfortable to wear—permits ease of speech and breathing.



Available Thru Your Dealer

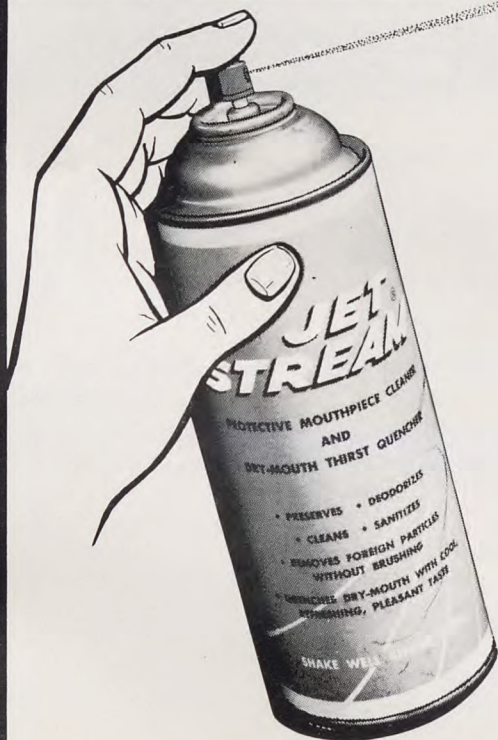
School Price

\$3⁹⁵

In ventilated, virtually unbreakable, sanitary plastic container.

manufactured by **FEATHERLAX CORPORATION**, 4412 Fannin St., Houston, Texas

The Modern Time-Out Refreshant



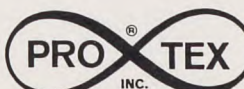
JET STREAM[®]

Instant relief for "cotton-mouth".
Safe, Sanitary, Pleasant Tasting.
Cleans and Deodorizes Mouthpieces.

JET STREAM is fast replacing old fashioned, unsanitary water buckets, bottles, jugs, etc. It is easy to use on the field . . . quickly relieves "cotton-mouth," refreshes and invigorates without the objectionable drinking of water while engaged in active play. JET STREAM in the handy pressurized can is also ideal for cleaning, deodorizing and preserving protective mouthpieces. Made with Hexachlorophene it has a pleasant, non-medicinal taste.

Sold Thru Sporting Goods Dealers

4112 FANNIN ST.



HOUSTON, TEXAS