



ATHLETIC TRAINING

THE JOURNAL OF THE NATIONAL ATHLETIC TRAINERS ASSOCIATION



IN THIS ISSUE:

Ligament Ruptures Produced by Forced
Inversion of Cadaver Ankles

A Case Report: Lower Leg Compartment Syndromes

Special Pads for Special Problems

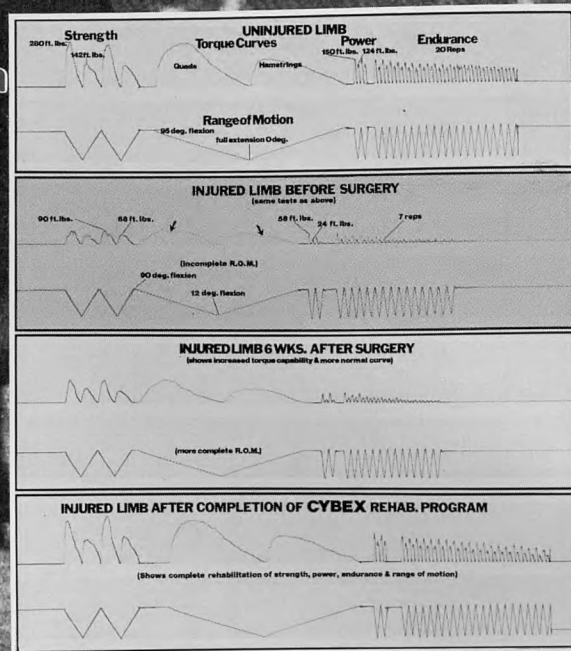
The Importance of Isokinetic Power and
Its Specificity to Athletic Conditions

VOLUME 14
NUMBER 2
SUMMER 1979

THE SPORTS INJURY

As the
Coach
sees it...

As you can
see it with
CYBEX
Tests



(actual chart recording shown 1/5 size)

Each chart recording above — the result of an easily performed isolated-joint test series — provides precise measurements of muscular capability, functional range of motion and comparative joint integrity. This test data quantifies performance deficiencies to help you determine the degree of injury or disability, evaluate rehabilitation goals or progress and verify treatment results. In addition to its unique testing function, CYBEX II has been clinically proven the safest, most effective rehabilitative exercise modality ever devised.

These rehabilitation and testing applications are of course important for typical orthopedic patients, industrial medicine and compensation cases, too. But sports medicine in particular demands the

most complete information possible about a patient's true functional condition. Only CYBEX II dynamic testing can provide this additional information that examination and x-rays can't.

The CYBEX II System includes testing and rehabilitation protocols, positioning manual, specially designed report forms and test prescription stickers that allow any trained assistant to make precise tests, set up prescribed rehabilitation exercise programs and accurately record data for comparisons and evaluation.

To find out more — write, phone or simply fill out and send the coupon below. You will receive a free folder of representative case histories and research studies, news clippings, a sample customer list and promotional literature.

The CYBEX II System tests and exercises every major body joint/muscle group:

ANKLE: Plantar/Dorsiflexion and Inversion/Eversion; KNEE: Extension/Flexion and Internal/External Rotation; HIP: Extension/Flexion, Abduction/Adduction and Internal/External Rotation; WRIST: Extension/Flexion and Pronation/Supination; ELBOW: Extension/Flexion; SHOULDER: Extension/Flexion, Abduction/Adduction, Horizontal Extension/Flexion, plus two Rotational patterns and two Diagonal patterns. Sample illustrations below.



Division of Lumex, Inc.
100 Spence Street
Bay Shore, New York 11706
(516) 273-2200

CYBEX Division of Lumex • 100 Spence Street • Bay Shore, N. Y. 11706

Please ☐ send me literature ☐ contact me about:

☐ Comparative testing for injury evaluation ☐ Screening for injury susceptibility

☐ Exercise prescription for rehabilitation and injury prevention programs

☐ Objective verification of treatment results

☐ Measuring physical impairment for compensation and other insurance litigations

Name _____

Title _____

Inst./Pac./Team _____

Address _____

City _____

State/Country _____

Phone () _____

Zip _____



ATHLETIC TRAINING

THE JOURNAL OF
THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

VOLUME 14

NUMBER 2

SUMMER 1979

**Editor-in-Chief
and Journal Committee Chairman**
Rod Compton
Sports Medicine Division
East Carolina University
Greenville, North Carolina 27834
Telephone: 919-757-6426

Editor
Clint Thompson
Jenison Gym
Michigan State University
East Lansing, Michigan 48824

Journal Committee
Dennis Aten
Eastern Illinois University

John Wells
Mars Hill College

Ed Christman
The College of William and Mary

Don Kaverman
Detroit Lions

Jeff Fair
Oklahoma State University

Ray Baggett
Indiana State University

Editorial Board
Bob Moore
San Diego State University

Ken Knight
Indiana State University

Dan Libera
University of Northern Colorado

Jim Rankin
Michigan State University

Joe Gieck
University of Virginia

Managing Director
Mary Edgerley
P.O. Box 1865
Greenville, North Carolina 27834
919-752-1725

Circulation Manager
Barbara Manning

ARTICLES

68

Special Pads for Special Problems
Lorraine M. Michel

74

A Tip from the Field:
Successful Trampoline Extrication
Ray Baggett, Rich Matthews, Pete Koehneke

78

A Case Report:
Lower Leg Compartment Syndromes
Richard W. Latin and William O. Kauth, Ph.D.

83

The Importance of Isokinetic Power
and Its Specificity to Athletic Condition
Alan H. Halling and Jeffrey N. Dooley

88

A Tip from the Field: The D.P. Technique for Blisters
Danny Poole

91

Ligament Ruptures Produced by
Forced Inversion of Cadaver Ankles
Kenneth L. Knight, Ph.D.

97

Treatment of Pain in Athletics
By the Use of Transcutaneous Nerve Stimulation
Joe Gieck, Ed.D., Richard Friscia and Jim Bartley

102

Bylaws of the National Athletic Trainers Association

108

Proceedings of the Board of Directors Meeting

FEATURES

55 From the President

56 Letter to the Editor

60 Calendar of Events

63 Editorial Comment

67 Book Reviews

70 Abstracts

81 Potpourri

87 Current Literature

90 In Memoriam

95 Announcements

Athletic Training is published in the Spring, Summer, Fall and Winter by the National Athletic Trainers Association, a non-profit organization. Second class postage paid at Greenville, NC 27834, and additional mailing offices. The views and opinions expressed in *Athletic Training* are those of the author and not necessarily those of the National Athletic Trainers Association. Non-member subscriptions are available at \$10.00 per year

and may be obtained by writing to Athletic Training, P.O. Box 1865, Greenville, NC 27834. CHANGE OF ADDRESS may be made by sending old address and new address with zip code number. Instructions should state whether change is temporary or permanent. Allow thirty days for changeover. Address changes should be sent to P.O. Box 1865, Greenville, North Carolina 27834. ADVERTISING — Although advertising is screened, ac-

ceptance of the advertisement does not necessarily imply NATA endorsement of the product or the views expressed. Advertising rates available on request, Eastern Associates, P.O. Box 1865, Greenville, North Carolina 27834 (Telephone 919-752-1725). Copyright Summer 1979 by the National Athletic Trainers Association. ISSN 0160-8320

Printed by NATIONAL PRINTING COMPANY, Greenville, North Carolina

The National Athletic Trainers Association



President

William H. Chambers
Fullerton Junior College
Department of Athletics
Fullerton, California 92634

Executive Director

Otho Davis
Philadelphia Eagles
Veterans Stadium
Philadelphia, Pennsylvania 19148

Board of Directors

Dist. 1	Wesley D. Jordan University of Maine Orono, Maine 04473	Dist. 6	Cash D. Birdwell Southern Methodist University Dallas, Texas 75222
Dist. 2	Richard F. Malacrea Princeton University Princeton, New Jersey 08540	Dist. 7	Troy Young Arizona State University Tempe, Arizona 85281
Dist. 3	J. Herman Bunch 3810 Merton Drive Raleigh, North Carolina 27607	Dist. 8	Don Chu California St. U. at Hayward Hayward, California 94542
Dist. 4	Gordon Stoddard University of Wisconsin Madison, Wisconsin 53706	Dist. 9	Bobby Barton Eastern Kentucky University Richmond Kentucky 40475
Dist. 5	Frank Randall Iowa State University Ames, Iowa 50011	Dist. 10	Larry Standifer University of Oregon Eugene, Oregon 97403

District Secretaries

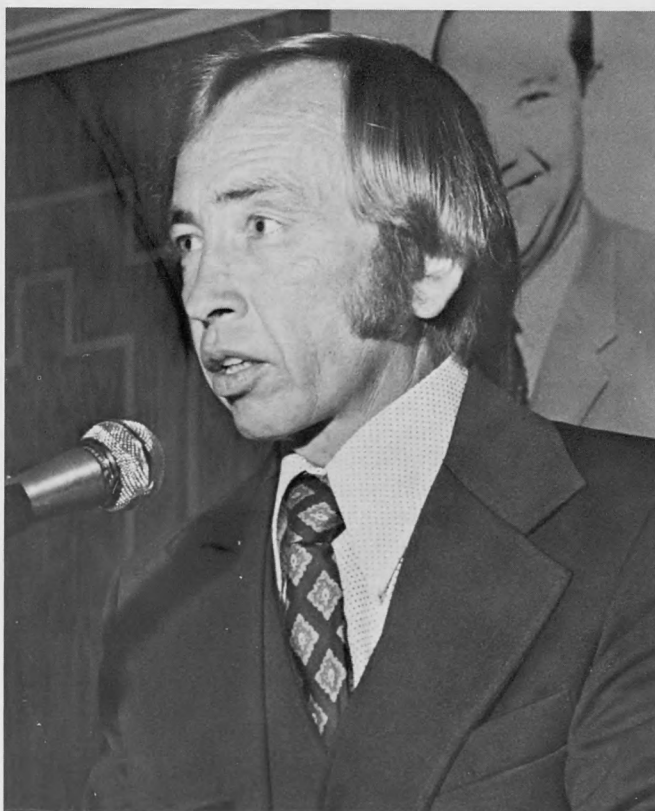
Dist. 1	Joseph Abraham Hobart College Geneva, New York 14456	Dist. 6	James Dodson Midland High School Midland, Texas 79701
Dist. 2	Joseph Abraham Hobart College Geneva, New York 14456	Dist. 7	Dale Mildenerger Utah State University Logan, Utah, 84322
Dist. 3	Andy Clawson The Citadel Charleston, S.C. 29409	Dist. 8	Jim Welsh San Jose State University San Jose State, California 95192
Dist. 4	Marjorie Albohm Indiana University Bloomington, Indiana 47401	Dist. 9	Steve Moore Tennessee Technological University Cookeville, Tennessee 38501
Dist. 5	Sandy Miller Northwest Missouri St. University Maryville, Missouri 50011	Dist. 10	A. John Andersen 300 Metropole Bldg. Seattle, Washington 98104

Committee Chairmen

Audio-Visual Aids - Robert Burkhardt
Certification - Rod Moore
Drug Education - John Wells
Ethics - L.F. "Tow" Diehm
Grants and Scholarships - W. E. "Pinky" Newell
History and Archives - Mike O'Shea
Honor Awards - George Sullivan
International Games - Frank George

Journal - Rod Compton
Membership - Bruce Melin
National Convention - Fred Hoover
Placement - Rodney Poindexter
Professional Education - Sayers "Bud" Miller
Career Information & Services - Charles Demers
Public Relations - Richard Hoover
Research and Injury - John Powell

FROM THE PRESIDENT



Dear N.A.T.A. Member:

I am looking forward to seeing you at our 30th Annual Meeting and Clinical Symposium in St. Louis. This should be an excellent meeting thanks to the hard work of District Nine. There are going to be a lot of important issues discussed and I hope those of you attending will try to attend the National Business meeting and your particular District meeting.

The N.A.T.A. task force met with the A.P.T.A. task force on February 17th in San Francisco. We once again covered the areas of mutual concern. Bob Behnke and Don Chu will attend the A.P.T.A. meeting in Atlanta prior to our meeting in St. Louis. They will have a report for your board and this report will be discussed at the District meetings. I anticipate being able to give you pertinent directions for your licensure efforts in St. Louis.

Our Executive Director sent you a Release of Medical Information form. If you are asked to release medical information about any of your student athletes, you are urged to use the form. This complies with HEW regulations and is for YOUR protection!

Again, I'm looking forward to seeing each of you in St. Louis. Feel free to let your District Director or me know how we can best serve our association.

Sincerely,

A handwritten signature in dark ink, appearing to read "Bill Chambers".

William H. Chambers
President

Use Divajex hot and cold therapy products to give your athletes complete professional treatment. Speed-up recovery time, get them safely back in the lineup and lessen the severity of the injuries. Application is easy and your players stay mobile without water mess. Divajex is your No. 1 source of hot or cold therapy. We sell Blue-Ice® flexible Refreezable Gel Packs and patented Elastic-compression Wraps with Gel Packs, Portable Cold Therapy Kits, Refrigerated Pitcher's Arm Wraps, Cryopedic® Supports and complete Freezer Systems plus Hydro-Therm reusable moist heat packs. See your dealer or call toll free (800) 854-0175. In California (714) 832-8970.

©1978 Divajex

DIVAJEX HEALTH CARE PRODUCTS
15551 Redhill Ave., Tustin, CA 92680

HOW TO HEAL THE WHOLE ATHLETE



THE ORIGINAL!
ELMER'S
WEIGHTS
-YOU-
WEAR

VEST
WEIGHTS



WRIST
WEIGHTS

LEG
WEIGHTS

***The Country's Number One
Weight-You-Wear***

ELMER'S, the inventor and developer of training weights, offers a complete line of WEIGHTS-YOU-WEAR for every sport. You get unparalleled design, superior workmanship, and quality material in all of Elmer's products.

Wear the weights most coaches recommend... ELMER'S Weights. All quality Elmer's WEIGHTS-YOU-WEAR are manufactured in the United States.

**Elmer's
Weights, Inc.**

P.O. Box 16326, Lubbock, Texas 79490
(806) 866-4661

LETTER TO THE EDITOR

To the Editor:

I write this both as a student trainer and an ambulance corp volunteer having just returned from a call to a gym to aid an athlete with what was called in as a fractured leg. The student, a senior in high school, was doing a dismount in a gymnastics match when he suffered an open fracture of the right tibia. On our arrival at the scene instant cold packs and an air splint had been applied and a blanket had been placed over the athlete. Evidently the school didn't have a trainer; the coach and athletic director filling the role. However, it was not clear to us, the ambulance crew, who was in charge as it appeared each person thought he was in charge. The coaches and other school officials all wanted to help (none of them appeared to have any training) but they all got in the way. It was uncertain to the athlete and to us who put on the cold packs and air splint. No one approached us explaining what had happened, what had been done, or that there was an open fracture; their only concern was speed in moving the athlete onto our litter and getting him to the hospital. So anxious were they in that task that they had the athlete lifted off the mat before our litter was ready causing him more discomfort. If this was not bad enough we did not discover that the fracture was an open one until the hospital removed the school's splint and cold packs to find an uncovered, contaminated open wound and fracture.

There are many points that can be learned from this episode, however, the one which I would like to emphasize is communications between school officials and ambulance personnel. I feel that I am in a unique position as having both called ambulances and responded in ambulances. When calling an ambulance it is imperative that the personnel know what type of injury they are being called for and exactly where the athlete is. The former is important so the crew can bring the proper equipment (e.g. splints for fractures vs. oxygen for drowning and heart problems) with them from the ambulance to the athlete to save time. The location is essential because with most gyms and pools having many entrances it might take five minutes for the ambulance to find the right building let alone the correct entrance. Optimally there

should be a school official (possibly a student) outside of the building or at the entrance to flag the ambulance crew down and direct them to where the athlete is, also, to confirm the nature of the injury. It is probably best to contact the ambulance corp at the beginning of the school year and obtain their help in establishing a plan if an ambulance is needed; possibly even giving them maps of the layout of the athletic complex. Luckily, in athletics it is not that common to require ambulance assistance. But, unfortunately, because of that whenever an ambulance is called panic sets in and the situation ends up being chaotic. At the scene of an injury there should be one person in charge, preferably a certified athletic trainer. But, since many schools still don't have certified trainers it should be the most trained person. Every coach should be trained in at least Standard First Aid and CPR (cardiopulmonary resuscitation). At such incidents, as happened in the one above, everyone wanted and tried to be as "helpful" as possible so that it ended up most people became a nuisance and in the way. No one spoke up to tell us what had happened or what had been done, whereas if one person was in charge the obvious open fracture would not have gone unnoticed. Because the ambulance crew does not frequently respond to the school's athletic complex it is easy to understand how the situation occurred. In that vein, I write this letter in the hope that by bringing this situation to the attention of athletic trainers and other athletic personnel other problems like this one will not happen again. It is imperative that schools contact the ambulance squads that service them to solicit ideas and work out plans if an ambulance is needed. With the increased training that ambulance personnel are receiving they can be a valuable aid to the athletic trainer (e.g. splinting and transporting fractures and back injuries). The trainer and ambulance attendant can work together to lessen the trauma and shock of an injured athlete or work against each other causing increased pain and shock for the injured athlete. It is hoped that through good communications before the need arises we can provide the best care for our athletes.

Peter A. DeMaria, Jr.
Glenside, PA 19038

JOURNAL DEADLINES

In order to avoid confusion and delays for any contributions you have for the Journal the deadlines for various sections of the Journal are provided below.

Send any materials for any section of the Journal other than formal articles and "Calendar of Events" to:

Rod Compton, ATC
Sports Medicine Division
East Carolina University
Greenville, NC 27834

This includes sections such as "Tips From the Field", "Announcements", "Case Studies", "Letters to the Editor", etc. The deadlines are:

Journal	Deadline
Fall Issue	July 15
Winter Issue	October 15
Spring Issue	January 15
Summer Issue	March 15

Deadline for "Calendar of Events": Information on upcoming events should be sent to:

Jeff Fair, ATC
Athletic Department
Oklahoma State University
Stillwater, Oklahoma 74074

Fall Issue	July 1
Winter Issue	October 1
Spring Issue	January 1
Summer Issue	March 1

Articles must be sent to:

Clint Thompson, ATC
Jenison Gym
Michigan State University
East Lansing, Michigan 48824

The Editorial Board will then review each article and work with authors to help prepare the articles for publication. Each article is handled on an individual basis.

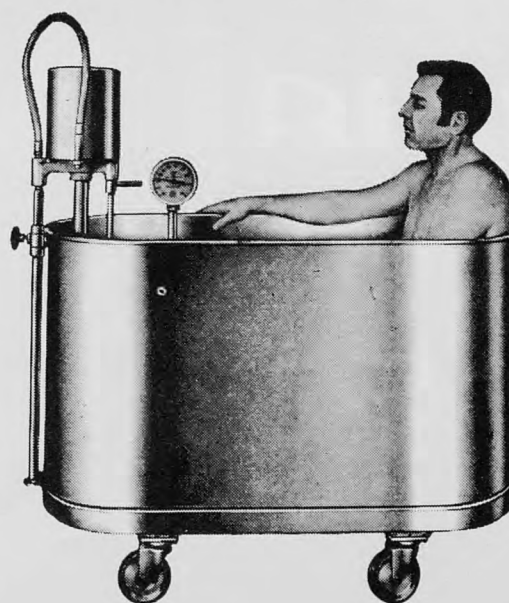
Dakon Whirlpool Baths are **8** reasons better:

- Special analysis underwater bearing material allows turbine to operate indefinitely out of water without harm to motor or bearing.
- Special heat treated S/S drive shaft.
- Turbine has heavier castings.
- Thicker walled tubing.
- Motor, pump, impeller, precision coupled.
- Longer bearing wear.
- No whipping action - quieter operation.
- Integral aerator - turbine - unique drainage system.

What's more, Dakon baths have been preferred for more than 30 years in clinics, hospitals, homes, geriatrics centers and armed forces rehab. posts. They are efficient, durable and lower cost.

Our complete line includes 2 portable models for home or vacation; single and dual motor professional Whirlpool baths and Hubbard tanks.

Send for new catalog.



Dakon CORPORATION
1836 Gilford Ave., New Hyde Park, N. Y. 11040

The
exclusive
and unique
CONFORM[®]
Elastic
Tape System &
what it means
to you.

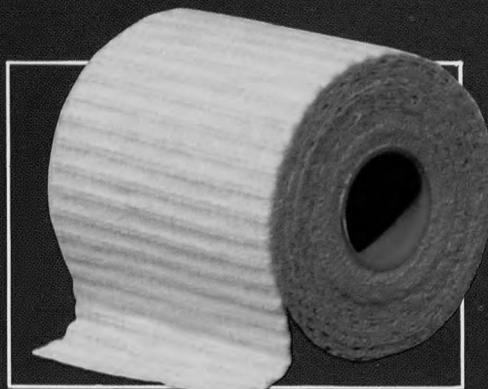


BIKE has a complete line of tape for all sports applications but of particular importance today is the CONFORM Elastic Tape System. It is exclusive and unique, comprising three kinds of tape, CONFORM[®] for ankles and wrists, H.T.C.[®] for ankles and knees, and PRO-LASTIC[®] for post surgical knees.

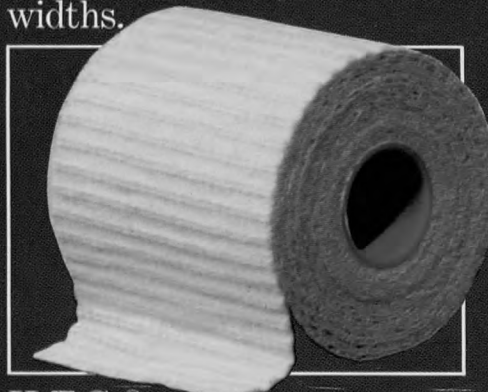
Unlike conventional cloth adhesive tape, the CONFORM System is a true athletic training tape application developed expressly for use in school and team athletics according to specifications of professional athletic trainers.

The System's unique material ingredient is an elastomer, a rubber fiber covered with fine cotton thread which is woven into the back cloth of the tape.

For the System's high tensile tapes, H.T.C.[®] and PRO-LASTIC[®], the tape is also honeycombed with nylon fiber for added strength without extra weight or bulk.



CONFORM[®] — Stretches like elastic. Is more compliant than regular cloth tape. Consistent, easy unwind. Strong in use yet easy to hand-tear for taping. Compliant to body contours. Molds easily. Applies smoothly. Saves taping time. Metered stretch for total taping control. Available in 1½", 2" and 3" widths.



H.T.C.[®] Ideal strong-grade strapping tape with a 50 lb. tensile strength, plus all the features of CONFORM[®]. Available in 2" and 3" widths.



PRO-LASTIC[®] — In addition to post surgical knees, it is also used to protect knees of very heavy players. It has a 69 lb. tensile strength plus all the features of CONFORM[®]. Available in 2" and 3" widths.

SAVES TAPING TIME

	CONFORM	Conventional
1 ankle	15-20 sec.	60-90 sec.
10 ankles	2-3 min.	10-15 min.
30 ankles	7-10 min.	30-45 min.
60 ankles	15-20 min.	1-1½ hrs.
90 ankles	22-30 min.	1½-2¼ hrs.

(Taping time may vary slightly depending on skill of person taping and the technique used. Durations indicated include only time actually spent in taping).

Try the CONFORM Elastic Tape System today. You owe it to your athletes. And yourself.

BIKE[®]

BIKE Athletic Products
Division of Southern Athletic Inc.
Post Office Box 666,
Knoxville, TN 37901

A Member of
the Colgate Sports Group of Companies



STRETCHING



REHABILITATING

TENDINITIS CALF PULLS SHIN SPLINTS FOOT SPRAINS ANKLE STIFFNESS

Relief in Month, or Money Back.

FLEX-WEDGE™ patented, orthopedic exercisers are used by PRO athletes in ALL Major Leagues, & in 10 sports. Stand on 2 inclined boards which adjust to 5 angles. The steeper the angle, the more they stretch and flex. Increasing joint mobility & muscular flexibility. Reducing muscle imbalance. 12 exercises in FREE ILLUSTRATED BROCHURE.

Help prevent injury & tightness



Holds 550 lbs. Steel brace
Non-skid cork top & bottom

Retails at \$19.95 a pair. Available to profession at \$14.95 a pair, or \$9.95 a pair per dozen, ppd. Flex-Wedge Co., Dept. A9, Box 5, Getzville, N.Y. 14068

Tel: (716) 688-8588

Send brochure ☐ 1 pair ☐ 12 pairs ☐

Name _____

Address _____

City _____

State _____

Zip _____

CALENDAR OF EVENTS

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

JUNE, 1979

4-8 Athletic Injuries Workshop, Southeastern Oklahoma State University, Durant. Contact Dr. Don Parham, Director of Athletics, Southeastern Oklahoma State University, Durant, Oklahoma 74701.

15-17 3rd Annual National Institute of Preventive Sports Medicine, Conditioning and Training: A Comparative Analysis, Reno. Contact Marjorie Cutler, Program Coordinator, Continuing Education, C&I, University of Nevada at Reno, Reno, Nevada 89557.

16-20 NATA 30th Annual Meeting and Clinical Symposium, St. Louis, Missouri. Contact NATA, P.O. Box 1865, Greenville, North Carolina 27834.

23-25 Athletic Training Clinic for High School Students, Castleton, Vermont. Contact David H. Perrin, Director of Athletic Training, Castleton State College, Castleton, Vermont 05735.

24-27 5th Annual Seminar on Sports Medicine, Maine Maritime Academy. Contact Len Tyler, Maine Maritime Academy, Castine, Maine 04421.

52-July 6 Workshop on Recognition and Management of the Acute Athletic Injury, Springfield, Massachusetts. Contact Charles Redmond, A.T.,C., Box 55, Springfield College, Springfield, Massachusetts 01109.

JULY, 1979

6-7 Southeastern Athletic Trainers Association, District 9, Third Annual Meeting, Suwanee, Georgia. Contact Steve Moore, Tennessee Tech, Box 5102, Cookeville, Tennessee 38501.

9-13 Sports Medicine Conference on "The Injured Athlete", Hattiesburg. Contact Jim Gallaspy, Box 8461, Southern Station, Hattiesburg, Mississippi 39401.

9-13 32nd Annual American Corrective Therapy Association Scientific and Clinical Conference, Portland, Oregon. Contact J.R. Malpass, Conference Chairman, 13130 SW 61st Avenue, Portland, Oregon 97219.

13-15 "Special Problems in Athletic Training", Indiana State University, Terre Haute. Contact Dr. Robert S. Behnke, Director, Athletic Training Program, Indiana State University, 110 Mens Physical Education, Terre Haute, Indiana 47809.

16-18 Student Trainer Workshop, University of Southern Mississippi, Hattiesburg. Contact Jim Gallaspy, A.T.,C., Box 8461, Southern Station, Hattiesburg, Mississippi 39401.

16-20 The University of Central Florida (formerly Florida Technological University) 3rd Annual Sports Medicine Workshop, Orlando. Contact Ronald R. Ribaric, A.T.,C. Head Athletic Trainer, Box 25000, Orlando, Florida 32816.

19-21 25th Anniversary Meeting of the Southwest Athletic Trainers Association, District 6, Waco. Contact Aubry Fisk, Trinity High School, 500 N. Industrial, Euless, Texas 76039.

20-22 "Athletic Training Problems of the Lower Extremity", Indiana State University, Terre Haute. Contact Dr. Robert S. Behnke, Director, Athletic Training Program, Indiana State University, 110 Men's Physical Education, Terre Haute, Indiana 47809.

Continued on page 62

INSIDE... A WALL POSTER FOR YOUR LOCKER ROOM

This informative locker room poster has been provided by Schering Corporation.
Just detach, unfold, and hang up.

STR



FL



REHA

TI
CA
SHI
FOO
ANKL

Relief in

FLEX-WEDGE
used by PRO a
sports. Stand
angles. The st
and flex. Incre
bility. Reducin
FREE ILLUSTR

Help pre



Retails at \$19.9
\$14.95 a pair,
Flex-Wedge Co

Send brochure

Name _____

Address _____

City _____

State _____

Not Like The Others ...

And we don't want to be.

That's why KWIK KOLD® has long been recognized as the finest instant cold pack available. Unlike others, KWIK KOLD is packaged with mylar which prevents the liquid from seeping through the inner bag. This insures longer shelf life, making KWIK KOLD more dependable.

There are a lot of cold packs trying to imitate the quality of KWIK KOLD, but a cold pack is not a cold pack unless it's KWIK KOLD.

KWIK KARE™, division of Kay Laboratories, also offers a complete quality line of first aid and athletic products.



KWIK KARE
Division of
Kay Laboratories, Inc.
P.O. Box 81571
San Diego, CA 92138
(714) 297-5470

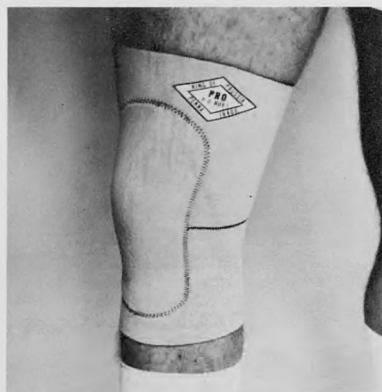


where technology helps nature heal naturally™

Trademarks of Kay Laboratories, Inc.

The Classic Knee Sleeve.

See you
in St. Louis
at Booth 1



The PRO 110 Knee Sleeve.

The original and still the leader.

Proven effective for years by trainers, therapists, surgeons and players alike.

To be used when heat and elastic compression are indicated.

Helpful for strains, post operative problems, arthritis and for preventing turf and floor burns.

Provides constant, evenly distributed elastic pressure and maximum body heat retention.

Made of finest U.S. made Neoprene rubber with nylon facing. Washable for longer life. Comfortable with no bunching of materials or impeding of circulation.

Specify the classic. The PRO 110.

\$9.95 single. \$16.95 pair.

For proper size—measure circumference around center of knee joint with leg extended.

13-14"—small 15-17"—large
14-15"—medium 17-18"—X-large

PRO Orthopedic Devices, Inc.
P.O. Box 1, King of Prussia, PA 19406
215/265-3333

Send me _____ PRO 110 Knee Sleeves
@ \$9.95 each or \$16.95 pair, plus \$1.50
postage & handling. Amount enclosed
\$_____ Sizes _____

☐ Please send me your 1979 PRO Catalog.

Name _____

Address _____

City _____ State _____

Zip _____ Phone _____

PA residents add 6% sales tax.

**pro. the
original.**

CALENDAR OF EVENTS *Continued from page 60*

27-29 "Athletic Training Problems of the Upper Extremity, Head and Spine," Indiana State University, Terre Haute. Contact Dr. Robert S. Behnke, Director, Athletic Training Program, Indiana State University, 110 Men's Physical Education, Terre Haute, Indiana 47809.

29-August 3 10th Annual Miami University Sports Medicine Workshop, Oxford, Ohio. Contact Ken Wolfert, Workshop Director, Millett Hall, Miami University, Oxford, Ohio 45056.

CRAMER COACHES ATHLETIC TRAINING WORKSHOPS

Contact Hugh Grubiss

Cramer Products, Inc.

P. O. Box 1001

Gardner, Kansas 66030

Colby Community College Colby, Kansas	June 1-3	Syracuse University Syracuse, New York	June 25-29
Northeast Louisiana University Monroe, Louisiana	June 4-8	Texas Tech University Lubbock, Texas	June 25-29
University of South Carolina Columbia, South Carolina	June 4-9	Bowling Green State University Bowling Green, Ohio	June 2
University of Oregon Eugene, Oregon	June 19-23	California State U.-Fullerton Fullerton, California	July 9-13
University of Missouri Columbia, Missouri	June 25,29		

CRAMER STUDENT ATHLETIC TRAINER WORKSHOPS

Marshall University Huntington, West Virginia	July 9-12	North Adams State College North Adams, Massachusetts	July 16-19
University of Utah Salt Lake City, Utah	June 11-14	Vanderbilt University Nashville, Tennessee	July 16-19
Colorado State University Fort Collins, Colorado	June 25-28	Emporia State University Emporia, Kansas	July 23-26
Florida State University Tallahassee, Florida	June 25-28	University of Maryland College Park, Maryland	July 23-26
University of Illinois Champaign, Illinois	June 25, 28	California State University-Chico Chico, California	July 30-Aug. 2
Kent State University Kent, Ohio	June 25-28	Grand Valley State College Allendale, Michigan	July 30-Aug. 2
Southern Methodist University Dallas, Texas	June 25-28	University of Idaho Moscow, Idaho	July 30-Aug. 2
Clemson University Clemson, South Carolina	July 9-12	Mankato State University Mankato, Minnesota	August 6-9
Southwest Texas State University San Marcos, Texas	July 9-12	Montclair State College Upper Montclair, New Jersey	Aug. 6-9
University of Tulsa Tulsa, Oklahoma	July 9-12		

ADVERTISING INDEX

B & G Equipment Company.....	72	Flex-Wedge Company.....	60
Bike/Southern Athletic.....	58-59	Johnson & Johnson.....	110-111
Chattanooga Pharmacal Company....	66	Kwik-Kare Products.....	61
Cramer Products.....	Cover 4	Mettler Electronics Corporation.....	79
Cybex/Lumex, Inc.....	Cover 2, 84-85	Pro Orthopedic Devices.....	62
Dakon Corporation.....	57	Schering Corporation.....	Cover 3, Insert
Divajex Health Care Products.....	55	Sports Nutrition Corporation.....	67
Drackett Company.....	64-65	Sports Pedics.....	66
Econoline Products, Inc.....	82, 98	Squincher/Universal Industries Corp..	63
Electro-Med. Health Industries.....	76	The Tetra Company.....	73
Elmer's Weights, Inc.....	56	Williams & Wilkins Company.....	77

EDITORIAL COMMENT

YOUR ASSOCIATION & THE U.S.O.C. SPORTS-MEDICINE COMMITTEE

Bill Chambers
NATA President

The N.A.T.A. Board of Directors unanimously voted at the mid-year Board meeting to discontinue the present N.A.T.A. selection process of Athletic Trainers for the various Olympic and International Games. This action was prompted by the total disregard for the N.A.T.A.'s offer to help in these selections by the U.S.O.C. Sports Medicine Committee.

Four years ago a project to develop a universal procedure for all districts to follow was started. After some revisions and discussions we felt a vehicle had been worked out that would be fair to all N.A.T.A. members as well as provide the best people to care for the athletes representing the United States.

At the Dearborn meeting a representative of the U.S.O.C. Sports-Medicine Committee spoke, at length, to your Board of Directors. A lot of time was spent listening to how the U.S.O.C. wanted to work with N.A.T.A. and we were encouraged they'd use the selection guidelines we had established. Also your Board was asked to go to the various exhibitors in Dearborn and ask for supplies to be donated to the U.S.O.C. Training Center.

One year later at our Las Vegas meeting we once again gave Board time to listen to the same U.S.O.C. representative give us the same assurances of cooperation in regard to selection procedures. We were given deadlines for names to be submitted for consideration.

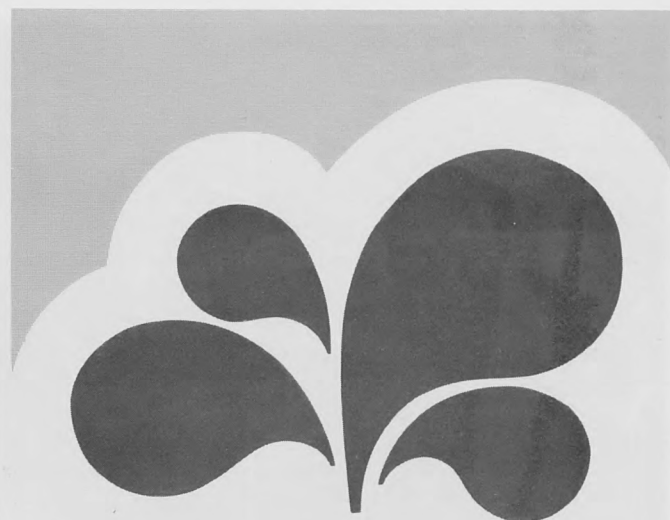
In October, '78, I wrote to Dr. Irving Dardic, Chairman of U.S.O.C. Sports-Medicine Committee. As instructed by the Board of Directors I strongly recommended that 75% of the names submitted by N.A.T.A. be selected because, as I explained to Dr. Dardic, the N.A.T.A. was best qualified to screen and select Athletic Trainers for the games. I also included a copy of the procedures we were going to use. I never received anything from Dr. Dardic accepting or rejecting our proposal.

I did receive a phone call from a member of the Sports-Medicine Committee and was informed that they could not accept our proposal because the U.S.O.C. did not want any one group dictating to them as to what to do.

On November 27th I received a letter from the aforementioned person stating . . . "considerations of the National Athletic Trainers' Association will be taken under advisement as from any organized group, should the N.A.T.A. care to submit recommendations for Games personnel. Selection of athletic trainers will, of, course, rest with the Medical Services Committee, which has that responsibility." Also included was a ¾ page 'criteria for selection of Games' physicians and athletic trainers' which the U.S.O.C. Sports-Medicine Committee endorsed.

In January, 1979 I learned that the selections for the 1979 Pan-Am Games had already been made. (The deadline given us for submitting names, by districts, was February 1, 1979) I telephoned the U.S.O.C. representative that had given us the dates and asked why these selections had been made without giving us, *as promised*, the opportunity to submit names for consideration. I was informed, point-blank, the Sports-Medicine Committee decided to go ahead with the selections. During this conversation it was suggested to me that anyone wanting to be considered for the Winter or Summer Olympics should go ahead and apply directly to the U.S.O.C. by February

Continued on page 66



Squincher
The Activity Drink

Get to know **Squincher** — the best
tasting electrolyte drink around. It comes
as a liquid concentrate with six easy-to-
mix flavors — more flavors than any
other brand offers!

Lemonade
Orange
Strawberry

Grapefruit
Fruit Punch
Grape

Get to know us and discover a great
tasting electrolyte drink.

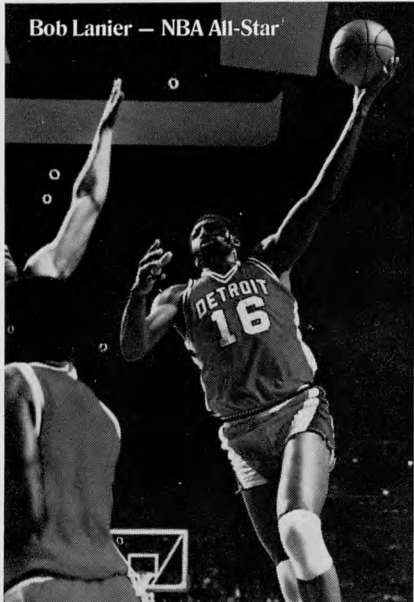
For further information please contact

Squincher
The Activity Drink

by writing:

UNIVERSAL INDUSTRIES CORPORATION
P.O. Box 192 • Columbus, MS 39701

Bob Lanier — NBA All-Star



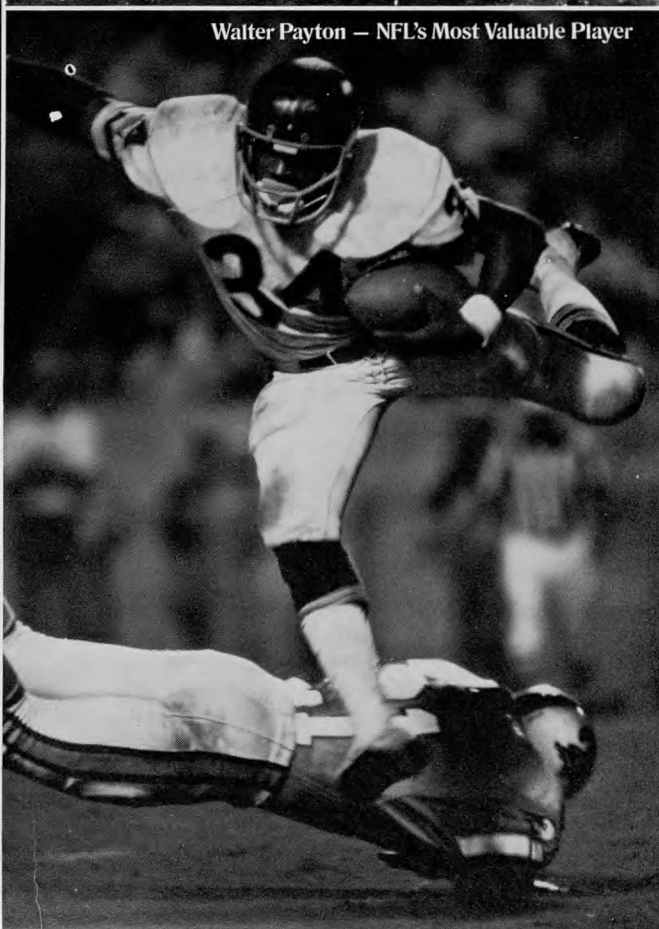
Bjorn Borg — World Champion Tennis Player



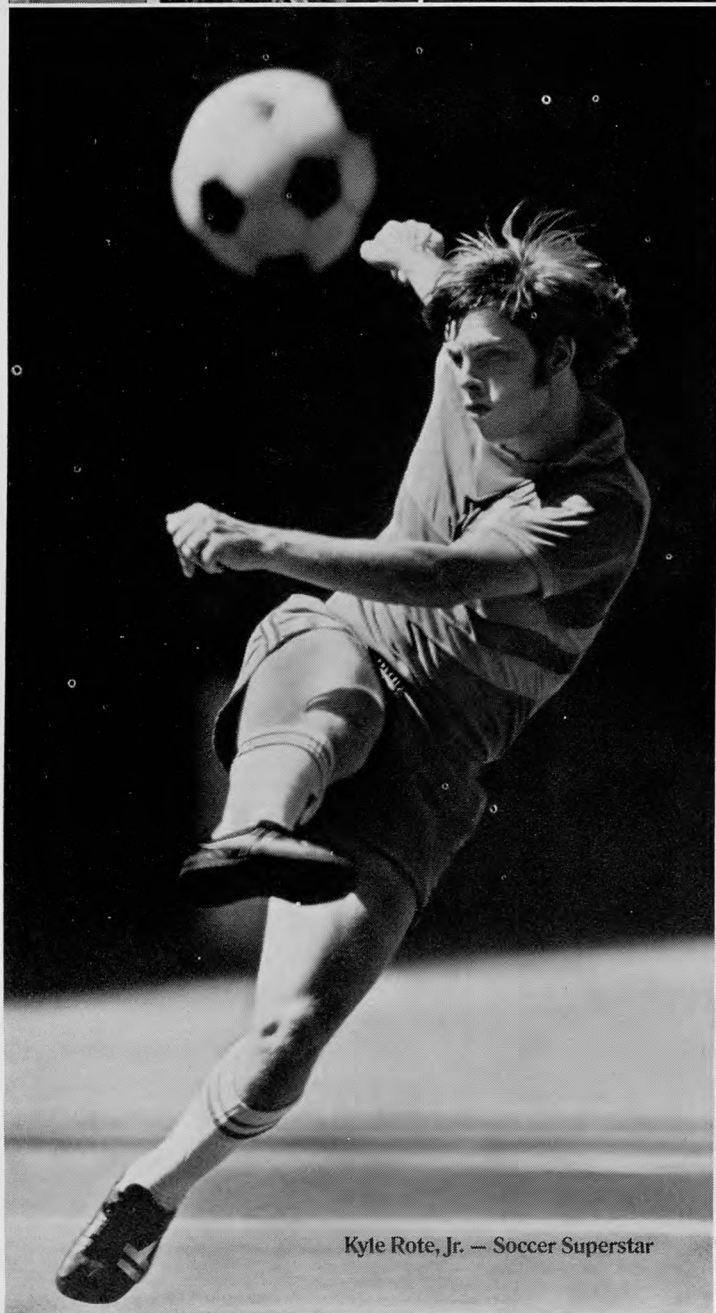
Cindy Nicholas — Champion English Channel Swimmer



Walter Payton — NFL's Most Valuable Player



Kyle Rote, Jr. — Soccer Superstar



If your team drank Nutrament[®] like these champions, maybe you'd have a better season this year.

When you're coaching young athletes, you know you need all the help you can get. Which is a good reason for you to look into Nutrament Body Building Energy Food. The athletes you see here did—and with no coaxing from us. The fact is they've been drinking Nutrament for a combined total of more than 20 years. Because they know Nutrament helps give them the competitive edge that makes a champion.

Nutrament supplies energy and stamina

Nutrament is a complete, scientifically balanced energy food. It provides an athlete with vitamins, carbohydrates, minerals and essential protein needed for good nutrition so vital for competition. In addition, Nutrament supplies the calories for the extra energy an athlete needs to perform at his best for long periods of time.

Each can of Nutrament provides one-third of the recommended daily allowances of protein, vitamins and minerals.

Nutrament helps build bodies

A body development program which included Nutrament, exercise and good meals helped young athletes increase their strength—and that's help we know you could use. What's more, as part of a conditioning program, an athlete can drink Nutrament between meals to gain weight, or in place of meals to lose weight.

Two cans of Nutrament provide as much protein as a 9-oz. T-bone steak broiled, as much iron as three cups of spinach, and almost as much calcium as a quart of ice cream.

Nutrament digests quickly

Because Nutrament is a liquid energy food, it digests quickly; so you can have it instead of solid food before any competitive event to reduce the

chance of an upset stomach during a game.

Nutrament tastes great

Nutrament comes in five great-tasting milkshake flavors. In fact, it tastes so good, it's hard to believe it does so much good. Another nice thing about Nutrament: it comes premeasured in convenient pull-top cans.

Free high school coaches kit

If you're a high school coach, we've sent you something that could make this your winningest season: "The Nutrament Performance Nutrition Kit for High School Coaches." The kit includes:

- An 8-minute filmstrip narrated by Ara Parseghian, dramatizing the need for peak nutrition in all sports, with exciting shots from famous college games.
- A special take-home booklet (with tips for mom) reemphasizing the links between peak performance, good physical condition and proper diet.

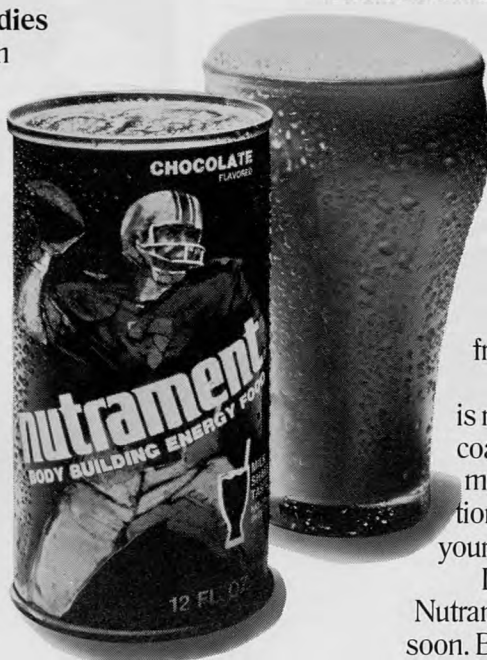
- A muscle development chart, caliper and tape measure to help your team see results from your physical conditioning program and performance nutrition.

- A coach's guide that shows you just how to present the entire program effectively.

Take advantage of this free offer if you haven't already.

The fact that Nutrament is recommended by leading coaches and trainers in most major sports is a good indication of why it should be part of your physical training program.

If you haven't looked into Nutrament yet, you'd better do it soon. Before your competition does.



Nutrament[®]

It gives your team energy to burn.



OFFICIAL
SUPPLIER

HYDROCOLLATOR®

**A HYDROCOLLATOR
IS A HYDROCOLLATOR
IS A MOIST HEAT PACK
IS A STEAM PACK COVER
IS A HEATING UNIT
IS A CAST HEATER
IS A MASSAGE LOTION
IS A LOTION HEATER
AND MORE . . .**

HYDROCOLLATOR IS A SYSTEM



chattanooga pharmacal company

new standards
in therapy

101 memorial dr / p o box 4287 / chattanooga, tn 37405
ph 615/870-2281 / telex 558356 / cable chatpar

1, 1979 even though the selections for these games had been 'heavily discussed' but not confirmed.

On February 28th I placed another phone call in an attempt to find out who had been selected for the Olympic Games. I was informed the Athletic Trainers had been selected but not confirmed, consequently, the names could not be released. During the conversation I mentioned I had never received anything from Dr. Dardic and I felt his not acknowledging my October letter was a slap in the face for N.A.T.A. Your officers have been frustrated in their attempts to work with and help the U.S.O.C. Sports-Medicine Committee because:

(1) Twice we had a member of this committee come into Board meetings and assure us they wanted to work with us. So far nothing!!

(2) We were given dates to submit names and these dates were changed without informing us.

(3) One of our members received a letter stating he had not been accepted for either of the Olympic Games and that all selections had been made. A phone call by this member to a member of the Sports-Medicine Committee resulted in this member being told the Athletic Trainers had *not* been selected even though a letter from this U.S.O.C. representative stated the selections had been made.

(4) The N.A.T.A. did not have, as promised, any input for the recent selections.

Therefore, the N.A.T.A. Board of Directors will no longer be involved with the selection of Athletic Trainers for Olympic or International Games. This will now be totally up to the U.S.O.C. Sports-Medicine Committee and they will be responsible for any potential problems arising

Continued on page 82

Sport-Pedics

6200 Castor Avenue
Philadelphia, Pennsylvania 19149
(215) 537-1911

- CUSTOM MADE AND PREFABRICATED ORTHOPEDIC APPLIANCES DESIGNED FOR THE ATHLETE
- SUPPORTS AND PROTECTIVE DEVICES
- TRAINING ROOM SUPPLIES

BOOK REVIEWS

The Female Athlete

by: Carl E. Klafs and M. Joan Lyon
List price: \$10.95
327 pages - Illustrated
The C.V. Mosby Company
11830 Westline Industrial Drive
St. Louis, MO 63141

This publication represents the second edition of Klaf's and Lyon's popular guide to the conditioning and training of female athletes. It is not a text on sports medicine although it emphasizes conditioning as a means to prevent injury and improve performance. It is written in laymen's terms, avoiding much of the technical jargon that unnecessarily complicates many publications. To further enhance an understanding of the material presented a glossary is included.

The text is divided into four primary parts. Part one details the historical background of women in athletics. Changing attitudes towards female sports participation and current trends in women's athletics are highlighted. Part two deals with anthropometric and physiological factors in female sports performance. Differences in the body structure and physiological responses to exercise between men and women are clarified.

The third part of the text deals with physical conditioning. Pre-participation medical and fitness evaluations are reviewed prior to a discussion of the principles of conditioning. Weight training receives heavy emphasis in this section. One of the most valuable sections of the text is "The Conditioning Program in Action." It presents the achievements and personal conditioning programs of a variety of world class coaches and athletes representing many different sports. This allows the reader to compare their programs with those used by champions in order to discern variations which may result in eventual upgrading or improvement.

The last major part of the book embraces a sports medicine and sports training emphasis. Care and preven-

tion as well as strapping, emergency care, and return to competition are all revealed. A discussion of nutrition and ergogenic aids concludes this last part.

This publication is valuable in that it recognizes the constantly expanding involvement of women in competitive athletics. Although it does not provide earth shattering revelations concerning conditioning or injury prevention, it does provide insight for the athletic trainer where women's athletics are concerned.

Don Kaverman, A.T.C.

Athletic Training: A Study and Laboratory Guide

by: Daniel D. Arnheim and Carl E. Klafs
List Price: \$8.95
282 Pages - Illustrated
The C.V. Mosby Company
11830 Westline Industrial Drive
St. Louis, MO 63141

This study guide has been published as a supplement to Klafs and Arnheim's *Modern Principles of Athletic Training* text, 4th Edition. The study guide directly corresponds to the textbook's chapters, and it contains an introduction, study questions, and laboratory exercises for each chapter. The study guide's pages are perforated so that they may be removed and presented to the class instructor for evaluation, if so desired.

The material contained within the study guide is a simple extension of the information found within the textbook itself. It is assumed that a student is to, in theory, read the text and then complete the corresponding study questions and laboratory exercises. In reality, the student may simply copy the information from the text to the pages of the study guide. While learning by repetition may be of value in a self-study program, the average college student will simply regard it as "busywork."

The appendix within the study guide contains some very useful information such as directions for constructing a goniometer, a step for the Harvard Step Test, a spine board, and a flexibility tester. A section listing the

Continued on page 82

NO SWEAT . . . ?

but when there is, be sure to replace those lost electrolytes with

SPORTS-MINS

Improved NEW SPORTS-MINS, America's powerful and complete electrolyte replacers in convenient easy-to-take tablets . . . with those fabulous Sodium Phosphates . . . plus!



Bottle of 900 Tablets . . \$20.00

Case of 12 Bottles . . . 230.00

Single bottles ADD \$2.00 for shipping.

VISIT OUR BOOTH IN ST. LOUIS

Order today from

SPORTS NUTRITION CORP.

110 Gay St., Arlington, TX 76010

Phone (817) 261-1139

Producers of Nutritional Specials for Athletes and Active Men and Women.

XTRA-POWR • MUSL-WATE • ALL-PRO
Power Proteins

SPORTS-MINS — Electrolyte Replacers
Daily Special Supplement Formulas

SPORTS-PAK for Active Athletes

ADAM-PAK for Active Men

EVE-PAK for Active Women

WINNERS — Stress Formulas Mega-Vits

SUPER-LIVER — Natural Beef Liver

TASTY-C — Vitamin C 250 Mg.

SPORTS-TABS — Special Mega-Vitamins

LECITHIN with Nucleic Acid and Zinc

WATE-AID — Weight Gain Booster

SPORTS-CADES — Vitamins C-A-D-E
with Selenium

Send for FREE Price and Product Brochure.

Special Pads for Special Problems

by
LORRAINE M. MICHEL, M.S., A.T., C.
 Assitant Athletic Trainer
 Georgetown University

Making special pads that "work" for an athlete in a particular sport can be a rewarding challenge for the athletic trainer. Pads that "work" are those which protect an injury from further aggravation, allow for maximum mobility of the body parts involved and are comfortable to the athlete during competition.

During the past few months, a couple of injuries in football and basketball dictated that a special pad be devised in order that the athlete continue participation in his respective sport. Fortunately, after some testing and minor modifications, each of the special pads "worked" and the athlete involved was able to continue through his season without missing a practice or becoming further injured.

Pad #1.

This pad was designed for a defensive end who fractured the fourth metacarpal in his left hand during the second game of the season. After the X-rays showed no displacement, our team physician Dr. Carol C. MacCartee, suggested a "gutter-like" pad which would protect the fractured bone from both sides of the hand and yet still allow full mobility of the first three fingers.

Materials Needed for Pad #1.

Orthoplast splint material, 1/4" adhesive foam, 2" elastic underwrap, 1 1/2" zinc oxide athletic tape

Instructions to Make Pad #1.

Cut a piece of orthoplast to resemble figure #1, measuring to be sure it will protect the following areas: the fourth and fifth fingers, the fourth and fifth metacarpals on the volar surface and the third, fourth and fifth metacarpals on the dorsal surface. The splint should extend from the fourth and fifth fingertips to just distal to the ulnar styloid process. Next, keeping the fingers in a semi-flexed position, mold the orthoplast around the above areas. The contoured splint should then be covered with three layers of 1/4" adhesive foam and taped securely down to the orthoplast with white athletic tape. For added protection, tape the athlete's wrist with a figure-eight and then tape the fourth and fifth fingers together. The padded splint can then be attached to the hand with 2" elastic.

Pad #2

This pad was designed for a basketball player who ruptured the olecranon bursa in his elbow during practice. It should be noted that he also had a small laceration on his elbow which continually oozed blood and synovial fluid. Although X-rays were negative, this area was so sensitive that the athlete could not withstand the pressure of a sim-

ple band-aid. Consequently, this injury dictated a "special" pad since the conventional elbow pad applied pressure and caused pain. The head trainer, Charles "Doug" Huffman, the athlete and myself, designed and

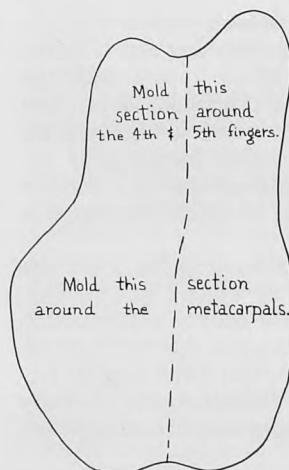


Figure 1

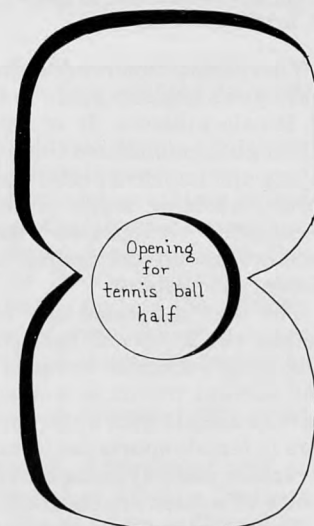
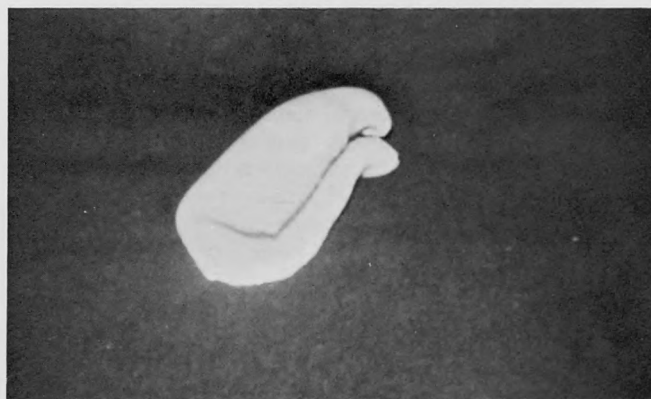
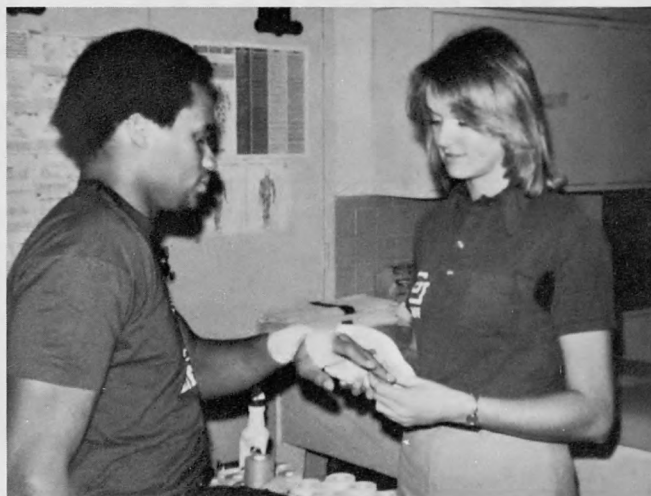


Figure 2



PAD #1-A. Hand pad.



PAD #1-B. Lorry Michel attaching hand pad to G.U. football player, Dave Williams. Note: the wrist has already been taped.

Lorraine M. Michel has been Assistant Athletic Trainer at Georgetown University, Washington, D.C. since January 1977.

She received her Master of Science in Physical Education with special emphasis in athletic training from Indiana State University, May 1976.

Lorry was lecturer at University of Wisconsin-LaCrosse, from August to December 1976.

She received her Bachelor of Science in Physical Education from Salisbury State College in May 1975.

tested a variety of pads before finally developing the "ideal" pad which protected the elbow, allowed for freedom of movement and most importantly did not cause the athlete any pain.

Materials Needed for Pad #2.

1/2 tennis ball, mole skin (optional), underwrap, 3" elastic

1/2" Cramer's foam thermoplastic athletic padding.

Instructions to Make Pad #2.

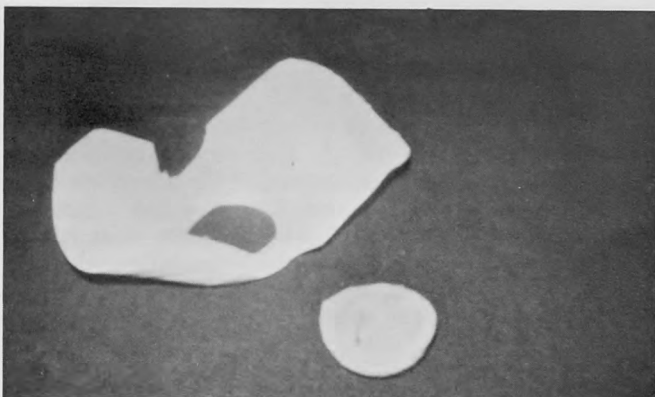
Cut a tennis ball in half and cover the rough edge with a strip of mole skin. Next, cut a rectangular piece of thermoplastic foam with a hole in the middle (figure #2) just



PAD #1-C. View of pad from the palm side of hand.

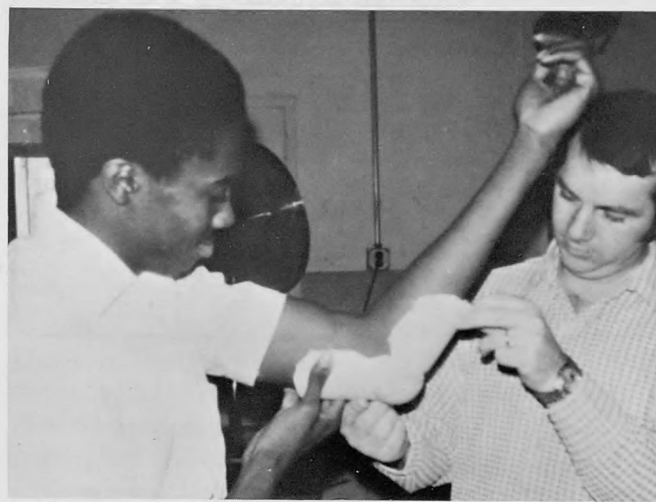


PAD #1-D. View of pad from the dorsal side after attachment with elastic.



PAD #2-A. Elbow pad with opening for the tennis ball half to fit snug.

large enough for the tennis ball half to fit snug. Heat the foam padding in a 350-degree oven until it softens, then mold the foam to the athlete's elbow which should be held in a semi-flexed position. Situate the tennis ball inside the opening of the contoured foam pad and place directly over the painful area. Attach the finished pad to the athlete's elbow by using underwrap and elastic.



PAD #2-B. Head trainer, Doug Huffman attaching elbow pad to G.U. basketball captain, Steve Martin.



PAD #2-C. Pad is being attached to elbow with underwrap and elastic. Note: the fist is clenched while the tape is being applied to avoid excessive tightness around the muscle groups.



PAD #2-D. Steve Martin demonstrating the range of mobility which this elbow pad allows.

ABSTRACTS

"Ergogenic aids in athletics", Percy, E. C., *Medicine and Science in Sports* 10:298-303, Winter, 1978.

For the purposes of simplification, ergogenic or athletic aids are best divided into three broad classifications: artificial aids, stimulants, and anabolic steroids. The most common offender in use in the area of artificial aids are the vitamins. These are materials which normally act as coenzymes in the body. There would appear to be no doubt that in the normal athlete's diet practically everything he eats will contain vitamins in the naturally occurring state or as artificially added materials to that particular product. Unfortunately, however, a vitamithology has grown up in our society so that the population in general and the athletes in particular are convinced that additional vitamins are necessary and indeed will improve on their performance. There is no scientific evidence to date that demonstrates that competitive training will cause a depletion of certain critical vitamins nor that extra vitamins will improve performance. Vitamin E is certainly one of the most popular unnecessary substances taken by the population at large. The sale of vitamins is probably the biggest rip off in society today. Diet fads, protein, oxygen, and blood doping are also classified as artificial aids. Stimulants may produce alertness and wakefulness and increase ability to concentrate. There is no scientific data that stimulants improve overall performance. While there are numerous reports in the literature which do suggest that amphetamines may improve performance these reports are generally ill-founded and not true double blind studies. The major problem facing the medical profession dealing with athletes is the use of anabolic steroids. It is alleged that these substances increase muscle development and strength. The study carried out by Fowler does indeed report hard scientific data on a true double blind study with anabolic steroids and a placebo. He noted no significant improvement in athletic performance in the parameters tested as com-

pared to the control group. Our role should be to educate the athletes in the dangers of these drugs so that not only their health is protected but that they are not penalized by discovery and disqualification.

John Wells

"Maximal Oxygen Uptake in Young Women with Training, Inactivity, and Retraining" Pederson, Preben K., and Jorgensen, Kurt. *Medicine and Science in Sports*, 10:233-237, Winter, 1978.

Endurance training is known to increase the physical work capacity as measured for instance by increases in maximal oxygen uptake (VO_2^{max}). Inversely, transition from a physically active to a more sedentary life gives rise to reductions in VO_2^{max} . Whether there is any effect of previous training, when regular vigorous exercise is resumed after an inactivity period, is a question which has been examined in only a few studies. Six young, healthy female students volunteered as subjects in the study. The subjects did not participate in any regular physical training in their leisure time and had not done so in several years. The subjects trained for two seven week periods interrupted by seven weeks in which only necessary daily activities were performed. Maximal oxygen uptake (VO_2^{max}) was measured during work on a mechanically braked bicycle ergometer four times during each training period, i.e. before and after two, four and seven weeks of training. A two factor analysis of variance (treatments-by-treatments by subjects design) was used to test for significant differences in the data between and within training periods. The increase in VO_2^{max} with training averaged 13.8% in period one and 9.5% in period two. The average training heart rate was the same in period one and two, 172.2 beats $\times \text{min}^{-1}$. The improvement in VO_2^{max} of 13.8% during the first training period is in agreement with the results from other training studies in women. The most prominent observation in the study is the similarity between period one and two regarding the influence of training upon VO_2^{max} . Following seven weeks with no training, the VO_2^{max} values as well as the training intensity at target heart rate did not differ significantly from the corresponding pre-training figures of period one. A commonly applied indicator for physical fitness is the work intensity at a given heart rate.

John Worley

"Metabolic Responses of Females to High Intensity Interval Training of Different Frequencies" Lesmes, George R., Fox, Edward L., Stevens, Carol, and Otto, Robert. *Medicine and Science in Sports* 10:229-232, Winter, 1978.

Numerous studies have demonstrated the relationship of frequency and distance of training to increases in maximal aerobic power (VO_2^{max}). In the present study, the metabolic responses of young females to different frequencies and distance of high intensity interval training programs were evaluated. Thirty-two healthy, untrained female students from The Ohio State University volunteered as subjects. The subjects were given thorough medical examinations and were informed as to the possible risks involved while participating in the study. Control data were obtained by testing each subject eight weeks prior to training and again at the start of the training period. The average intensity over the eight week period was approximately 170 percent and 130 percent of VO_2^{max} for group S and L respectively. Each group trained on a 220 yd. (201m) indoor track. The in-

tensity of each program was gradually increased throughout the eight weeks of training. All metabolic measurements were determined by standard techniques of open circuit spirometry. Within-group comparisons were made using the student t-test for dependent observations. No significant differences were found during the eight week control period. After training, all groups improved significantly in VO_2 max expressed either as liters/min or ml/kg/min. Changes in maximal heart rate following training were not statistically significant within or among groups. VO_2 submax did not change significantly with training in any group. After training, no significant within or among-group differences were observed for the maximal lactate accumulated during the max VO_2 test.

John Worley

"Accountability in the Weight Room" Dan Riley, *Scholastic Coach*, February, 1979, pp. 48, 91.

Coaches will constantly analyze their athlete's technique and will spend hours analyzing film and organizing practice yet many of them will only casually monitor the athlete's weight training program. So step one in any good weight program is to motivate the team to train regularly. Step two is to do everything possible to insure productivity of every exercise in every workout. There are several ways of monitoring the team's strength-training progress: (1) staff participation, (2) supervision of exercise, (3) recording workout data, and (4) deemphasizing testing. **TEST AS YOU TRAIN.** For maximum gains, we require our athletes to perform between eight and twelve reps while training. Now, if we were interested in testing, we'd have them to duplicate the training effort from one test session to another. Always encourage your athletes to increase weight or perform more reps, but never at the expense of proper lifting form. Make every boy realize that developing strength is his goal, but that he is not in a contest. The only advantage of formal testing is motivation. If possible, try to find another way to motivate the athletes. Testing also has draw backs as a motivating device. If you must test, try to stay within these guidelines. (1) Use the same methods as in your normal training session. (2) Don't allow any cheating movement. (3) Require the athletes to perform at least eight reps. (4) Select exercises involving all areas of the body. (5) Use exercises that are part of the regular training program. (6) Never compare athletes. (7) Never give rewards for the amount of weight lifted. **Conclusion:** Many methods can be used to increase muscle strength. What's more, they produce the intensity of effort needed to best prepare the athlete for his or her sport.

John Worley

Stark, H., Jobe, F., Boyes, J., and Ashworth, C. "Fractures of the Hook of the Hamate in Athletes." *The Journal of Bone and Joint Surgery* (American Volume), Vol. 59-A, No. 5, July, 1977.

Over an eight year period, twenty male athletes (baseball players, golfers, tennis players) presented with fractures of the hook of the hamate but with no history of falling. It is believed, due to the lack of falls, that each fracture occurred as a result of the handle of the bat, club, or racket forcibly impinging on the hook, either when the grip was relaxed or when the centrifugal force overcame the grasp. In baseball, this would occur at the end of a forceful or checked swing; in tennis, attempting a difficult shot could cause such forces; in golf, the club handle seems to strike at the end of a swing, but the force tran-

mitted through the shaft when the club head accidentally strikes the ground is especially suspect. In every case, the fracture occurred in the hand grasping the end of the bat, club, or racket. Conventional x-rays often fail to reveal this fracture, and variable carpal-tunnel views are in order when hamate fracture is suspected. These should be bilateral, lest a non-uniting non-fractured hook be mistaken for a fracture. Clinical signs may include a history of onset of pain associated with swinging an instrument, pain without swelling (in old fractures), painful abduction and adduction of the little finger only when resisted, painless grip, but discomfort when swinging a cylindrical object, tenderness to hamate palpation, and ulnar nerve dysfunction. In cases of ununited fracture, excision of the fragment is recommended, to decrease the possibility of flexor tendon rupture.

Greg Vergamini

Nicholas, Jr., Strizak, A., and Veras, G., "A Study of Thigh Muscle Weakness in Different Pathological States of the Lower Extremity." *The American Journal of Sports Medicine*, Vol. 4, #6, November-December, 1976.

Recognizing that limb injury produces relative muscle atrophy and weakness, resulting in increased susceptibility to reinjury, the authors set out to expand on previous research which centered on isometric strength measure of muscles surrounding the site of lower extremity injury, by isokinetically determining existing relationships between an injured part and muscle groups far removed anatomically. Using a Cybex II at slow, medium, and fast speeds, five lower extremity muscle groups (quadriceps, hamstrings, hip abductors, hip adductors, hip flexors) were tested in 134 patients with various chronic injury and/or pain histories including ankle and foot problems, back pain, knee ligamentous instability, knee intraarticular defects, patellofemoral problems and degenerative arthritis of the knee. In each case, the opposite extremity was also measured and used as a control for comparison to the injured extremity. Results showed various significant and associated non-significant trends for specific weakness accompanying specific clinical problems. All five muscle groups showed significant weakness with at least one of the injury groups, though quadriceps weakness was the most common. The authors' recommendations include manual and/or mechanical tests for strength imbalance of the lower extremities to be included in any physical examination.

Greg Vergamini

Noyes, F., and Sonstegard, D., "Biomechanical Function of the Pes Anserinus at the Knee and the Effect of its Transplantation." *The Journal of Bone and Joint Surgery*, Vol. 55-A, #6, September, 1973.

Attempting to investigate the mechanics of the pes anserinus and to determine its change in function after Slocum-Larson transplantation, the authors utilized anatomical and roentgenographic studies, mechanical tests on cadaver extremities, and the study of an analytical model. Results showed that flexion force of the pes under a given muscle load is greatest at 90 degrees of knee flexion, with decreasing efficiency at 60, 30, and 0 degrees of knee flexion. Similar results were demonstrated for knee internal rotational force with these changes in knee flexion, though rotational forces were increased with outward rotation of the tibia ("wind-up ef-

fect"). Adduction forces of the three pes muscles were not measurable. After transplantation, flexion forces in these positions were significantly decreased under the same loads, while rotational forces under unchanged loads showed significant increases at 30, 60, and 90, but not at zero degrees of knee flexion. The increased force available due to the "wind-up effect" was still present. Individually, the efficiency of the three muscles in performing knee flexion and tibial internal rotation were measurably changed by the procedure. Before transplantation, the semitendinosus supplied 47% of the total flexion force of the pes, but only 26% of pes rotational force (with the sartorius and gracilis supplying 34% and 40% of rotation, respectively). After transplantation, while flexion force ratios were unchanged, the semitendinosus supplied 39% of rotational force, with the sartorius and gracilis supplying 24% and 37%, in turn.

Greg Vergamini

"Football fatalities in actural perspective," Kenneth S. Clarke and Allen Barslow, *Medicine and Science in Sports* Vol. 10, No. 2: 94-96, Summer, 1978.

In the mid-1960s an exercise in statistical logic was presented to demonstrate the numerous epidemiological pitfalls in judging the relative hazards in sports from fatality data. The purpose of this paper was to examine the stability of the results of an earlier study via a replication exercise a decade later. Step one. The two base populations represent the respective age groupings utilized for vital statistics from which the football can-

didates are considered samples. The standard 20 - 24 age group was discarded in favor of a more corresponding 18 - 22 five year age group. Interpolation from 15 - 19 and 20 - 24 groupings determined the fatality rates. Step two. Only the designated population exposed to football hazards represented the football rates. The motoring rates were represented by all males because of lack of data for participants in specific activities. "Annual" fatality rates for football are based on deaths occurring during only a portion of the calendar year. Consequently, the annual fatality rates for daily living and motoring were adjusted to be comparable to football season. Step three. Exposure to daily living was assumed to be 16 hours per day. Exposure to motoring was assumed for both groups to be one hour per day for each day in the respective number of weeks. Step four. Divided hours of exposure during the football season into the corresponding seasonal mortality, fatality indications for man exposure for comparisons. In step five, by dividing one index into another the risk of football-related deaths is presented as a ratio with the risk of death to another activity by equivalent exposure. The findings indicated that in 1974 as well as 1964, football was not associated with an increase in the risk of deaths among young males. In fact fatalities in football had dropped. The actural question concerning football fatalities was more favorable than in the 1964 study. The calculations of the risk of death in football, however, demonstrated numerous pitfalls awaiting the unwary or zealot in judging relative hazards from fatality data. If preventive methods are to be identified and employed, they must be based on patterns adhering to all significant safety problems in sport.

David Giardina, A.T.,C



B&G HAS THE WINNING LINE-UP TO COVER ANY FIELD.

1. B&G Actiondrink-400: The all stainless steel pro dispenser for the concentrated action energy drinks. Large fill opening. Featuring the new sanitary mouth guard.

2. B&G Portable Water Fountain: Large capacity, sanitary, rustproof, lightweight. No stooping. Inexpensive. No maintenance required. New sanitary mouth guard... impossible for mouth to touch nozzle. Model WB-2S (2 fountains) Model WB-4S (4 fountains)

3. B&G Latex Field Marking Paint: Brilliant white. Clean-up with water. Long lasting.

4. B&G 7 Gallon Line Marker: For athletic fields, tennis courts and parking lots. Adjustable line width. Rust-resistant brass pump.

5. B&G Gunga Din: Lightweight construction, maintenance free and at a cost every team can afford! The new B&G Gunga Din gives your team every advantage of a refreshing cool drink anytime during the game.

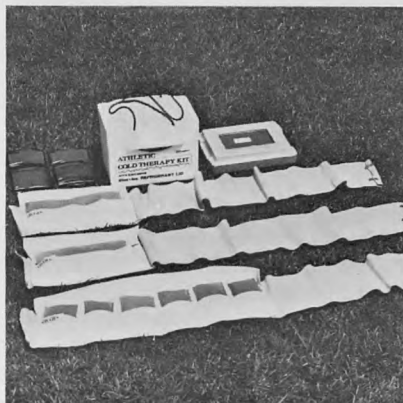
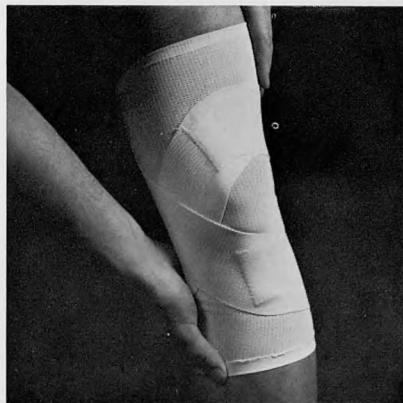
6. B&G Field Marker Set: Easily visible in any weather. Replaceable vertical panels. Yard markers have 10 yd. rust-resistant chain. Holders available.

7. B&G Yard Line Marker: Completely flexible bright colored marker that can be seen anywhere on the field or in the stands.

8. B&G Goal Line Marker: Flexible markers for goal line identification and safety to the players. Bright red in sets of 4.

B & G Equipment Company

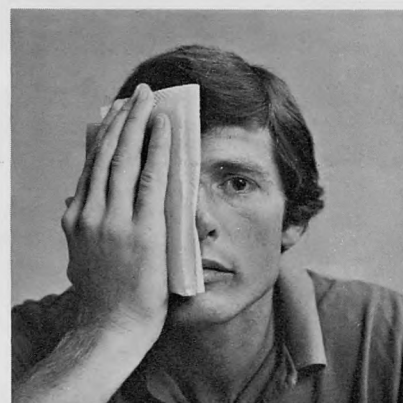
Applebutter Rd., Plumsteadville, Pa. 18949
Telephone: (215) 766-8811



In our continuing efforts to bring you quality products at competitive prices we have added new items to our Athletic Trainers Product Line. Stromgren Knee and Stromgren Ankle Supports for the prevention of injury as well as lightweight support that firms and stabilizes. Divajex Gel Packs for cold therapy which are reusable, resealable, non-caustic and non-toxic.

Please visit our Booth #90 at the N.A.T.A. meeting in St. Louis and see our complete line in person.

If your plans do not include the convention, please contact us by phone or using the attached request form.



Yes Tetra, I'm interested in your Athletic Trainer Product Line.

- ☐ Send a Catalog to my attention
- ☐ Send literature on your new products only to my attention

Name_____

Title_____

Institution_____

Address_____

City_____ State_____

Zip_____ Phone_____

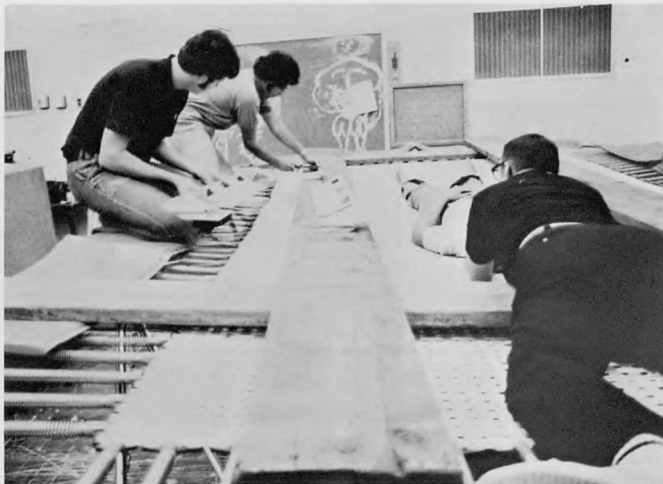


Better products through patient attention

THE TETRA COMPANY

2850 N. Lincoln Ave.
Chicago, Illinois 60657
(312) 525-1172

Outside Illinois Call Toll-Free 800-621-4041



A Tip from the Field:

SUCCESSFUL TRAMPOLINE EXTRICATION

RAY BAGGETT, A.T.C.
Indiana State University

RICK MATTHEWS, A.T.C., E.M.T.
Instructor Health & Safety
Indiana State University

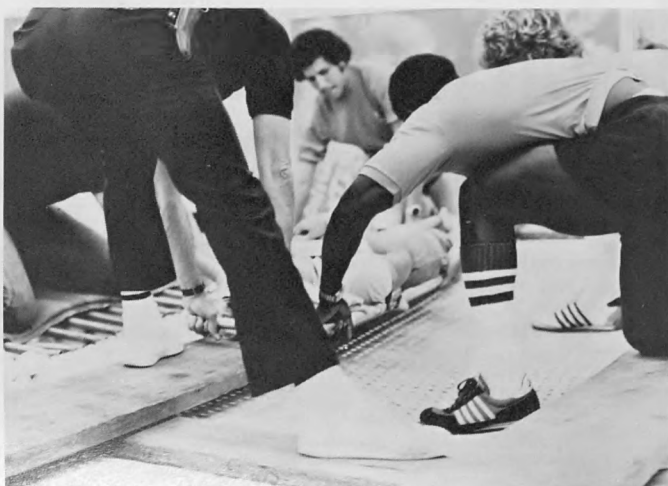
PETE KOEHNEKE, A.T.C.
Canisius College, New York

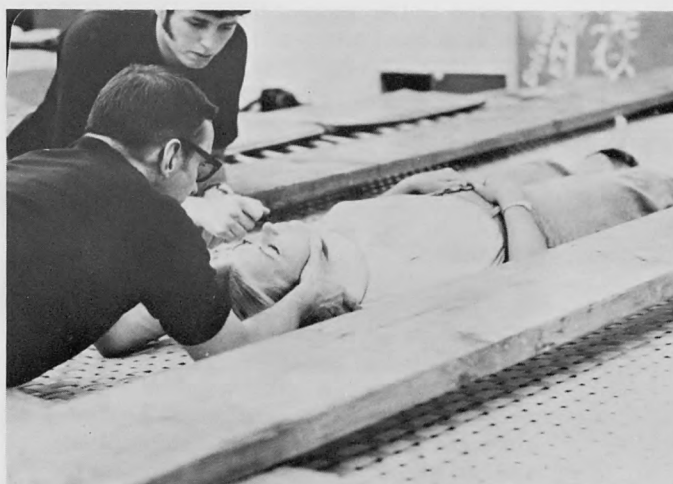
One of the most perplexing problems that an athletic trainer can face is the management and subsequent removal of an athlete or student from the bed of a trampoline following trauma to the cervical spine. The immediate question that comes to mind is how to remove the injured person from the trampoline without causing further movement of the already injured spine. Because the bed is so elastic, any attempt to remove the victim by standard methods will prove unsuccessful in preventing movement of the head, neck and spine.

The following steps were developed in an effort to facilitate the safe removal of the injured from the trampoline. The trainer is advised that practice and preparation prior to the accident is imperative. The materials needed should be acquired and stored near the trampoline.

The materials needed are:

1. Cervical collar ("Philadelphia Type" recommended)
2. Scoop stretcher, with at least 3 straps
3. 1 roll of 3" Kling for neck immobilization on stretcher
4. Two sandbags (necessary if there is no way to strap head to stretcher)
5. Long back board (72" x 18")
6. Other patient care equipment as may be indicated
Example: oxygen administration equipment for the management of shock
7. Equipment for stabilization of trampoline bed
 - a. Two boards (2" x 12") that are of sufficient length so as to extend 1 foot past each end of the tram-





- poline bed
- b. Two boards (2" x 12") that are of sufficient length so as to extend 1 foot past each side of the trampoline bed
- c. One sheet of plywood (4' x 8' x $\frac{3}{4}$ ")

Remember, the following steps need to be practiced several times by the training staff prior to the accident!

Step 1A: Frame is constructed around patient. Trainer is then able to lay across frame and apply traction to the head and neck. Patient evaluation can now be accomplished without causing movement of the trampoline bed or the patient. Additionally, a "scoop stretcher" is being prepared.

Step 1B: At the same time as step "1A" is in process, support to the patient's spine is being accomplished by a plywood board placed directly under the patient and trampoline bed. The board is held in place by student assistants. The people under the trampoline can support the board by using their upper back or legs as illustrated.

Step 2: While traction is maintained, the cervical collar is applied. Avoid pulling patient's long hair if possible. Don't rush this step.

Step 3: Collar has been applied. Traction is still maintained.

Step 4: The athletic trainer directs his four (4) assistants in placing the patient on scoop stretcher. Notice that there is no unnecessary movement of the patient.

Step 5: Patient is now on the scoop stretcher and can now be secured.

Step 6: The patient's head and neck have been



secured to the scoop stretcher through the use of a head strap and towels (sand bag substitutes). Additionally, the patient is strapped to the stretcher to prevent unnecessary movement.

Step 7: The patient is now ready to be safely removed from the trampoline bed.

Step 8: Patient is moved to the supporting frame. The team now prepares to move her completely off the trampoline. The patient should not be lifted very high off the frame. We found it can disturb the patient. It gives an insecure feeling. Notice the assistants placed their feet on the trampoline bed. We don't recommend this unless it is necessary, but it should not cause problems since the plywood board is still in position and can support their weight if necessary.

Step 9: Notice the wrists have been secured. The team now moves her completely off the trampoline, keeping stretcher level at all times.

Step 10: The patient has now been safely removed from the trampoline and can now be transported (via Emergency Medical Services) to a medical facility.

This is only one technique. We feel the basic steps in this extrication are logical and sound. Pete Koehnke from Canisius College has recently used this technique and successfully removed a patient from a trampoline. We recommend that the team practice the routine regularly. It doesn't take very much time once you get organized to get the patient off the trampoline and to the hospital.

We wish to thank the students in our classes and special thanks to "Bud" Tice and Mike Goodwin for their suggestions while we developed this procedure.

This Publication is Available in MICROFORM from...



Xerox University Microfilms

300 North Zeeb Road,
Ann Arbor, Michigan 48106
(313) 761-4700

PLEASE WRITE FOR
COMPLETE INFORMATION

A NEW MODALITY FOR PHYSICAL THERAPY

SOLID STATE HIGH VOLTAGE GALVANIC STIMULATOR

Completely Safe . . . No Burning

- To relieve spasticity and spasms.
- To increase local blood flow.
- For denervated muscle to delay atrophy from disuse.
- For muscle re-education as in regaining joint control.
- For stimulation of the calf immediately following surgery to prevent phlebothrombosis.

Mail This Coupon For Complete Information

ELECTRO-MED HEALTH INDUSTRIES, INC.

Dept. AT-2, 6240 N.E. 4th Court • Miami, Florida 33138

- ☐ I would like additional information on the EGS.
☐ I would like a FREE demonstration of the EGS.

Name _____
Address _____
City _____
State _____ Zip _____



MODEL 100

MEDICAL-DENTAL EQUIPMENT

E.G.S. IS COVERED BY
PRODUCTS LIABILITY INSURANCE



CERTIFIED
LR 35767-1



LISTED
629 R

ELECTRO-MED HEALTH INDUSTRIES, INC.

6240 N.E. 4th Court • Miami, Florida 33138
Telephone: (305) 756-6013

Textbooks from Williams & Wilkins

WINNERS!

Perrott STRUCTURAL AND FUNCTIONAL ANATOMY FOR STUDENTS AND TEACHERS OF PHYSICAL EDUCATION Third Edition

The changing requirements of today's physical education curriculum have been skillfully met in this new edition which relates the structural and the functional part of anatomy to the demands of various activities both in everyday life and in the pursuit of sports. **1977/346 pages/205 illustrations/\$19.95 Order #6849-0**

Gowitzke & Milner UNDERSTANDING THE SCIENTIFIC BASES OF HUMAN MOVEMENT Second Edition

A new and unique volume that fully integrates the mechanisms of the neuromuscular system with skeletal mechanics — something no other available text does. **1979/about 370 pages/124 illustrations/about \$23.50 Order #3592-4**

Melloni's ILLUSTRATED MEDICAL DICTIONARY

A brand new reference work no health-science student should be without! So beautifully illustrated it's called Visual Medicine. By merging the visual and the verbal, Melloni's conveys essential medical terminology clearly, quickly, and with improved retention. **1979/532 pages/27,085 entries/2,537 illustrations/\$16.50 Order #2642-9**

Kendall et al. MUSCLES: TESTING AND FUNCTION Second Edition

"Muscles, Testing and Function presents a comprehensive volume on a very vital aspect of one of the athletic trainer's daily problems, testing and evaluating muscles." — from a review in *The Journal of the National Athletic Trainers Association* **1971/284 pages/364 illustrations/\$24.50 Order #4574-1**

Basmajian MUSCLES ALIVE: THEIR FUNCTIONS REVEALED BY ELECTROMYOGRAPHY Fourth Edition

More than 400 new references and detailed discussions of techniques, muscle mechanics, posture, and muscle actions in functional movements have contributed to make this newest edition — once again — the most comprehensive and current textbook on the subject available. **1979/506 pages/177 illustrations/\$32.95 Order #0413-1**

.....
Please send me the following books on 20-day approval:

- ☐ Basmajian: #0413-1/\$32.95
- ☐ Gowitzke: #3592-4/about \$23.50
- ☐ Kendall: #4574-1/\$24.50
- ☐ Melloni: #2642-9/\$16.50
- ☐ Perrott: #6849-0/\$19.95

All books sent on 20-day approval. Save postage and handling by enclosing payment with order. Maryland residents please add 5% sales tax. Prices subject to change without notice.

(Check one) ☐ Check enclosed ☐ Bill me ☐ VISA ☐ Master Charge

name _____

card # _____

expiration date _____

address _____

TOLL-FREE TELEPHONE ORDERING (9 am to 4 pm)

For ordering with or without charge card, call 1-800-638-0672.

Maryland residents call collect: 528-4221.

city state zip code _____

If you are an instructor and would like to receive copies of any of these books for consideration as a required or recommended text in your course, your request should be sent to our Marketing Department. Please include the name of your department, applicable course, when you will next teach the course, probable enrollment, text presently in use, and whether the book is being considered as a required or recommended text.



Williams & Wilkins Dept. 275 P.O. Box 1496 Baltimore, MD 21203

ATH TRAINING 0579

A Case Report:

Lower Leg Compartment Syndromes

by

RICHARD WAYNE LATIN M.S., A.T., C.

and

WILLIAM OLIVER KAUTH, Ph.D., A.T., C.

Introduction

Lower leg pain may be one of the most distressing and misunderstood of all athletic injuries. In most instances recognition of the problem is apparent, however at times is difficult to determine. Among the causes of exercise induced leg pain are contusions to the soft tissues and bones, muscle strains, shinsplints, sprains, stress fractures of the tibia and fibula, acute muscle cramps, tendonitis, and finally acute anterior or peroneal compartment syndromes. It is this last condition with which this paper will deal.

Of all the causes of lower leg pain in athletes, the anterior and peroneal compartment syndromes present one of the few true medical and possibly surgical emergencies. Without its early detection and physician referral, an athlete may be left with a permanent neurological deficit (foot drop). Not only would this eliminate the athlete from further athletic competition but result in an unnecessary handicap.

Until recently little has appeared in the sports medicine literature about the condition termed "anterior or peroneal compartment syndrome." In a study done by Sorrell, Hinterbuchner, Green, and Kalisky, (7) over a four year period a relationship between peroneal nerve injury and fractures of the femur was demonstrated. Of 26 cases reviewed only 19.2% fully recovered and 26.9% showed partial recovery.

A study by Meals (3) reported on eleven cases of individuals developing peroneal nerve paralysis after inversion sprains of the ankle. In all eleven cases reported, complete recovery occurred between three weeks and eight months with treatment ranging from rest to surgery.

A case report of antero-lateral compartment syndrome was presented by Garfin, Mobarak, and Owen (1). They discussed the etiology of their case as exertionally precipitated pain associated with muscle hernias and entrapment of the superficial peroneal nerve. This resulted in numbness on the dorsal surface of the fourth toe, as

well as pain and hardness in the antero-lateral aspect of the involved leg. It was pointed out that these symptoms occurred during active exercise and were relieved by rest. Surgery was required in this particular case and six months following the operation, the individual exercised asymptotically.

Lipscomb and Ibrahim (2) have also presented a case of acute peroneal compartment syndrome. Eight hours after the onset of severe pain in the involved leg, the individual developed numbness and an inability to dorsiflex the foot. In addition, there was marked swelling, stony hardness, and extreme tenderness in the peroneal compartment. None of these symptoms were found in the anterior compartment. Surgery was performed 13 hours after the onset of symptoms and complete recovery occurred two months later.

Of the more obscure cases discussed, Siegler and Refetoff (6) reported on an individual with peroneal nerve entrapment caused by a hyperactive thyroid gland. Sherman and Easton (5) reported on seven individuals who developed peroneal nerve palsies while on weight reduction diets.

It may be recalled that the soft tissues of the lower leg are contained within three distinct sections or compartments. Each compartment is bound together with a heavy covering or fascia. The lateral or peroneal compartment located on the outside border of the lower leg contains the three peroneal muscles which are responsible for everting the foot, as well as a branch of the peroneal nerve, which is one of the major neural pathways to the foot. The anterior compartment houses the tibialis anterior, extensor hallucis longus, and extensor digitorum longus muscles, whose major functions are dorsal flexion of the foot and ankle and toe extension. Also included in the anterior compartment is the anterior tibial nerve and the tibial artery. The largest of the three compartments is the posterior compartment. Muscles in this section plantar flex the ankle, invert the foot, and flex the toes. Muscles included in this compartment are the gastrocnemius and soleus.

Within any of these compartments the "syndrome" injury can occur. The tight binding of fascia which forms the compartment does not allow for any excessive swelling within its confines. Swelling in these compartments may be caused by a number of things including excessive exercise and muscle fiber fatigue, contusion, localized infection, or overstretching of a particular muscle group. In fact, anything that causes an inflammatory response and uncontrolled swelling may result in pressure within the compartment and the subsequent condition described as a compartment syndrome.

Depending on the cause of the condition there may be a sudden or gradual onset of severe pain in the involved lower leg area. The skin over the area becomes red, warm, and may possess a stony hardness. There will be obvious swelling accompanied by point tenderness in the affected muscle group. In the later stages, numbness and the inability to dorsiflex the foot (foot drop) will develop. Again, these symptoms may present themselves in a few hours or develop more slowly over a period of days.

Rick Latin is Head Athletic Trainer and Instructor, Department of Health, Physical Education, and Recreation at Winona State University, Winona, Minnesota 55987. He received his B.S. and M.S. from Illinois State University, and was a Graduate Assistant Trainer at Illinois State University.



Bill Kauth is Head Athletic Trainer and Associate Professor, Department of Health, Physical Education, Recreation, and Dance at Illinois State University, Normal, Illinois 61761. Bill received a B.S. in 1964 from Illinois State and his M.S. from Indiana State in 1965. From 1965-68 he served as Head Athletic Trainer at Northern Arizona University, and in 1968 he returned to Illinois State. In 1976, he was awarded his Ph.D. in Health from the University of Utah.



Regardless of how the symptoms are presented, it is important to recognize them early and to act quickly, for any delay may result in permanent neurological disability (foot drop).

It is the purpose of this paper to report a case of acute peroneal compartment syndrome in a well conditioned college football player. Hopefully, this report will provide greater insight and understanding of this condition.

Case Report

One week before the actual injury occurred, the athlete, who was involved in spring football practice, became aware of an unusual tightness and hardness in the calf of his left leg. However, the player was, at that time, on the first team and did not want to risk missing any playing time; consequently, he made no mention of this leg pain to the athletic training and/or coaching staff. He subsequently experienced a progressive worsening of the condition.

In a practice session, one week following the original onset of his initial symptoms, the athlete experienced an acute injury to the same lower left leg. The exact mechanism is not clearly understood, but it is believed that he inverted the foot while in a state of plantar flexion with his knee in extension. This occurred during a blocking drill. (Note: It is known that the athlete was *not* subjected to a direct blow.) Immediately, he experienced sharp pain along the lateral border of his involved lower left leg. However, the athlete's desire and dedication once again persuaded him to "stick it out" for a few more minutes until practice was scheduled to be over. By the end of practice, however, he was in too much pain to run the usual wind sprints and limped into the athletic training room, where the leg was examined by the athletic training staff, and the athlete was treated with the usual

first aid treatment of ice, compression and elevation. After approximately 20 minutes of first aid treatment, he was allowed to shower and thereafter returned to his dormitory.

Approximately six hours following the injury, the entire lateral aspect of the leg was swollen, and the athlete experienced extreme tightness and severe pain; ambulation was not possible. With assistance the athlete reported to the school health center where he was referred on to the local hospital emergency room. The attending physician at the hospital administered a local anesthetic and the athlete's leg was examined and x-rayed. Twelve hours after the initial injury he was released from the hospital, given a prescription for medication to relieve his pain, instructed to rest and elevate the extremity, and to use crutches if ambulation was necessary.

The next morning the athlete talked to the team's trainer about his experience, who then referred the problem immediately to the team physician. Twenty-four hours after the initial injury the athlete was admitted to the local hospital by the team physician.

Throughout his 70 hour stay at the hospital, the leg was treated with elevation, local heat, and medication, which reduced the pain considerably. When released from the hospital he was given instructions to follow similar care at home. (Note: The athlete returned to his hometown, for the university was on one week spring vacation.) After one week of home care he started light weight bearing with the aid of crutches and experienced a mild throbbing pain. After returning to campus three weeks following the initial injury, the athlete grew discontented with the use of crutches and failed to use them. At this point he began to notice a numbing sensation in his leg and foot, causing a slight foot drop condition. One week later a pronounced

METTLER physical therapy equipment is sports minded



ME 400
EMG Biofeedback



ME Tote Bag



ME 702
Sonicator II
Ultrasonic Therapy



ME 200
Muscle Stimulator



ME 300
Auto-Therm
Shortwave Diathermy

METTLER ELECTRONICS® corp.

1333 So. Claudina St., Anaheim, CA 92805 USA
Sports Dept. (714) 533-2222

- ☐ I'd like a demonstration, no obligation, of course.
☐ Send me a Sonigel sample.
☐ Send me details.

Name _____
Address _____ City _____
State _____ Zip _____ Phone _____

foot drop was detected. After consultation with the team physician, the trainer attempted to innervate the various muscle groups in the lower leg with muscle stimulation, but failed to obtain any dorsal flexion or eversion of the foot. Treatments of whirlpool, diathermy, and muscle stimulation were administered daily for the next two weeks. (Note: At this point a slight overall improvement was experienced.) Referral by the team physician was made to a neurologist in the athlete's hometown, since he was returning there for the summer.

The athlete's initial visit to the neurologist resulted in various tests being administered to determine the extent of the neurological deficit. The use of a leg brace was discussed as a possibility, and the neurosurgeon was not too optimistic about future athletic participation. The physician prescribed swimming and scheduled more tests including an electromyogram (EMG) to be administered upon the athlete's return in two weeks.

Three weeks following these tests a final examination was given. A marked improvement was observed. The physician commented that there would be no need to brace the foot and return to athletic competition now appeared likely. No future appointments with the neurosurgeon were deemed necessary. Straight running on flat surfaces, swimming, and active toe raises had been prescribed by the neurosurgeon. The athlete gradually added hill running, resistive toe raises, and agility running. As expected, the marked atrophy of the lower leg improved rapidly when active exercises were initiated.

The athlete returned to full participation for the fall football season and had a successful campaign. The side effects experienced as a result of the injury were limited to: (1) a slight numbness in the great toe with some inability to hyperextend, (2) an overall "weakness" in the lower leg, and (3) point tenderness in the anterior and lateral compartments of the injured leg. One year following the injury the athlete studied in this case experiences only a slight numbness in his great toe, as the only residual side effect.

Discussion

It seems clearly evident that prompt action needs to be taken in compartment syndrome injuries. Recognition of the symptoms and early treatment are a must if permanent disability is to be avoided. With any injury to the lower leg, a compartment syndrome condition should be considered a possible consequence. Early treatment should include the application of ice, elevation, and immobilization and if the symptoms become worse, immediate physician referral is a must. Again, remember the classic symptoms of severe pain, swelling, tenderness, and especially weakness or paralysis of the compartment musculature. It is the numbness, paralysis, etc. which differentiates this condition from other injuries with similar symptoms. Some authorities believe that once these neurological symptoms have presented themselves, the problem requires surgical intervention. The surgical procedure involves sectioning the entire length of the fascia, which releases the entrapped fluid and usually results in the prompt relief of pain and other symptoms. Some physicians believe that any delay in performing this fasciotomy may result in tissue death and permanent neurological deficit (drop foot).

Several other lower leg injuries may initially present symptoms similar to compartment syndrome injuries. Muscle cramps, shinsplints, contusions, tendonitis, or stress fractures that do not promptly respond to treatment should be evaluated with suspicion, and a "better safe than sorry" attitude should prevail.

Another problem to be considered in handling the compartment syndrome injury is related to the competitive nature of many athletes. When injured the athlete at

times is not willing to take himself/herself out of the action, perhaps trying to "walk the injury off" or refusing treatment. Worse yet, the athlete may fail to report the injury to the trainer or coach. These situations can be most dangerous to the player, for any delay in recognition or treatment of the injury may spell the end of the athlete's sports career, either for the season or permanently. In fact, Lipscomb and Ibrahim's (2) study would seem to indicate that even when these compartment syndrome conditions are properly diagnosed and cared for, a prognosis for complete recovery remains in doubt. Only 16% of the involved cases reported obtained complete recovery after fasciotomy.

Summary

Compartment syndrome injuries are not common in occurrence. However, when the classic symptoms present themselves, the situation can easily become a true emergency.

Hopefully this case study has provided greater insight and understanding to compartment syndrome injuries. The compartment syndrome injury may or may not occur as a result of direct trauma, as many coaches and trainers seem to think. It seems entirely possible, for instance, that a case of shinsplints could develop into a serious compartment syndrome injury, given the proper circumstances.

There appears to be need for greater reporting and sharing of information concerning lower leg injuries, particularly cases of compartment syndrome conditions. Those out on the fields and in the athletic arenas need to fully appreciate the seriousness of these conditions and need to recognize the early symptoms so that permanent handicaps among today's sports participants do not occur.

Comment

One year after the injury the athlete mentioned in this study was voted by local sports writers as the Outstanding Offensive Back in the annual spring football intersquad game. There was little doubt that his recovery was complete. However, his experience may well serve as a valuable reminder in preventing similar situations from occurring.

BIBLIOGRAPHY

1. Garfin, S., Mobarak, S.J., and Owen, C.A., Exertional Anterolateral-Compartment Syndrome. *The Journal of Bone and Joint Surgery*, 404-5, April, 1977.
2. Lipscomb, A.B. and Ibrahim, A.A., Acute Peroneal Compartment Syndrome in a Well-Conditioned Athlete: Report of a Case. *The American Journal of Sports Medicine*, Vol. 5, No. 4, 154-57, 1977.
3. Meals, R.A., Peroneal-Nerve Palsy Complicating Ankle Sprain. *The Journal of Bone and Joint Surgery*, 966-68, October 1977.
4. O'Donahue, D.H., *Treatment of Athletic Injuries*, Philadelphia: W.B. Saunders Press, 601-03, 1970.
5. Sherman, D.G. and Easton, J.D., Dieting and Peroneal Nerve Palsy, *Journal of American Medical Association*, 230-1, July 18, 1977.
6. Siegler, M. and Refetoff, S., Pretibial Myxedema - A Reversible Cause of Foot Drop Due to Entrapment of the Peroneal Nerve. *The New England Journal of Medicine*, 1383-84, June 17, 1976.
7. Sorrell, D. A., Hinterbuchner, C., Green, R.F., Kalisky, Z., Traumatic Common Peroneal Nerve Palsy: A Retrospective Study. *Archives of Physical Medicine and Rehabilitation*, 361-65, August, 1976.

POTPOURRI

By Dennis Aten, ATC
EASTERN ILLINOIS UNIVERSITY

"The Weekend Athletes"

"If you only exercise on the weekend. . .you're going to die on the weekend". This statement well capsulizes a basic thesis of a new film entitled "The Weekend Athletes", according to Jim Bond, President, Best Films, who has recently secured the nontheatric distribution rights from ABC.

Bond added "with the explosion in sports participation in America, too many middle-aged athletes are suffering injuries due to inadequate conditioning. He said "The Weekend Athletes" examines the problem, as it travels the U.S., covering almost every sport and interviewing almost every "star-status" medical authority. Bond went on to say that "while most of the film centers around the post-college age group, the information is applicable whether the viewer is eight, 18 or 80 — whether male or female".

Cut-away models of the human body, computers and other advanced measuring machines are used to analyze the effects of exercise on the bones, heart, muscles, tendons, as well as to suggest some solutions to the problems.

Host-narrator Jules Bergman, ABC Science Editor, adds that "you don't play sports to get into shape. . .you get into shape to play sports".

For further information write: Best Films, P.O. Box 725, Del Mar, California 92014

The Therapeutic Recreation Information Center

TRIC is a computer system programmed to store, retrieve, and disseminate published and unpublished material related to recreational services for the ill, disadvantaged, disabled, and aged. Designed to provide bibliographic reference materials to those interested in therapeutic recreation, the Center maintains an on-site library of information materials, and provides consultation services. TRIC is affiliated with California State University — Sacramento. For more information, write to Director, Therapeutic Recreation Information Center, School of Business and Public Administration, Department of Recreation and Park Administration, California State University, Sacramento, CA 95819

Little League Elbow: Fact or Fiction?

In 1960, two physicians described an X-ray abnormality of the throwing arm of three Little League pitchers. In each, a "growth center" of the upper-arm bone (humerus) was shifted out of place, presumably by the stress of pitching. Since that time there has been considerable debate both as to the exact nature of "Little League Elbow," and the extent of the risk it poses to young baseball players.

A report in *Physician and Sportsmedicine*, by Prof. Rulon Francis of Utah's Brigham Young University and his colleagues, details an X-ray survey of the elbows of 328 former Little League players (including 106 former pitchers) a decade later. Of these, 1.5 percent had X-ray changes suggesting damage. However, 2.8 percent of a control group (no previous baseball experience) also showed X-ray changes. The authors conclude that "participation in organized baseball as an adolescent has no enduring deleterious effect on the throwing elbow."

This is undoubtedly not the last word on the subject.

But it provides reassurance to parents worried about their children's health. Indeed, the psychological trauma exerted on young kids by some coaches and some parents may be of more concern than hard throwing.

Harvard Medical School Health Letter via *Readers Digest*

Scuba Divers Beware

The Journal of the American Medical Association reports that the most common contributing factor to serious injury among scuba divers is panic among the inexperienced. So when possible, buddy up for safety.

Drugs

There are more than 15,000 deaths annually from drug misuse, and an estimated 500,000 nonfatal accidents involving drugs. One of the possible reasons may be the careless, even cavalier, attitude of the public toward drugs. The public seems to regard drugs as they would a piece of hardware: a simple tool to do a simple job. Unfortunately, they are wrong, as the statistics quoted above indicate.

A drug is any foreign material introduced into the body with the intent of altering a body function or normalizing the physiological balance. Food will not be considered, although coffee and tea and certain foods exert pharmacological effects as mild stimulants.

Attitudes have been formulated in our society based on mistaken assumptions. The following is a list of premises that need to be considered as the public develops concepts regarding drug use.

Premise No. 1: The human body is not designed to take drugs. Whenever a drug is introduced into the body the defensive mechanisms immediately begin to protect the system by neutralizing or eliminating the invader.

Premise No. 2: Drugs are poison.

Premise No. 3: Drugs affect multiple systems of the body. No drug is specific for a particular target area in the body to the exclusion of any other physiological system.

Premise No. 4: Drugs frequently do not produce the same response each time they are used; i.e., they are paradoxical. There are many factors that influence the action of a drug. A patient taking the same drug on two separate occasions may not show the same response. It has been said that a person would be safer using a friend's toothbrush than to use that same friend's prescription drug. Some of the reasons that form the basis of this statement are obvious, such as age, sex, and weight. Other factors less obvious would include physical, chemical, physiological and psychological variations in patients. The presence of another drug — or food — may affect the action of a drug. Every drug-taking episode presents a new set of variables; again, nothing can be taken for granted.

Premise No. 5: A drug will not cause the body to do anything it cannot, of itself, do. A drug will do one of two things: it will stimulate or depress a physiological function. It cannot create a new function. There are an infinite number of examples, situations and conditions when an individual will need reinforcement or help from a drug, but only for a short period of time, until the system can re-establish its integrity. The conditions for which lifelong support is needed, such as thyroid supplement, insulin, etc., occur when the body has lost some of its normal functions and are not in conflict with the premise.

Taken from an article in May '78 edition of "Emergency" by John Oliver, Pharmist.

Hot Water Can Scald

Each year, approximately 2,600 people suffer scald injuries caused by excessively hot tap water. The U.S. Con-

sumer Product Safety Commission has found that many of the burn victims fall within two age groups: under 5 years old and over 65 years old.

These two age groups are most susceptible because they are either unaware of the hazard and/or cannot react quickly to it. Injuries frequently result from children under 5 climbing unwittingly into a bathtub of scalding hot water or playing with the hot water faucet while in the bathtub. Some of the injuries suffered by adults over the age of 65 were caused by the victim slipping or falling into a tub of scalding hot water.

This information may be important to those who debride open wounds with tap water. If you use the warm water tap always test for temperature and comfort before holding a skin wound under the water for debridement purposes.

Placebos: Not Just "In The Mind"

Placebos, sugar pills masquerading as medicine, produce dramatic results in about one-third of patients with pain. That result usually is dismissed as a purely psychological reaction, "all in the mind." But now a study, outlined by Dr. Jon Levine of the University of California, San Francisco, at the Second World Congress on Pain, in Montreal, shows otherwise.

In many patients, the placebo triggers the brain to release painfighting chemicals called endorphins - recently discovered natural painkillers, similar to morphine. Relief depends on one's expectation, and to that extent it may be psychological - but the suppression of pain is real.

The study was conducted on 50 dental patients who had teeth pulled. About one-third of the subjects reported decreased pain after being injected with a placebo. But the benefits uniformly disappeared following injection of

naloxone (a substance known to block the action of morphine and related drugs), indicating that the placebo had tricked the brain into producing endorphins. The injection of naloxone had no effect on those who were not helped by the placebo.

Reprint from *Readers Digest*

EDITORIAL COMMENT

Continued from page 66

from the selection of Athletic Trainers. As of now, it is not considered unethical for N.A.T.A. members to campaign or solicit for selection. Also, keep in mind there is a good chance the same people will always be selected.

BOOK REVIEWS

Continued from page 67

sources of various athletic training supplies and equipment is also included.

The study questions, laboratory exercises, and appendix are useful supplements to the original textbook. But it is not felt that they need be a separate volume from the textbook itself. If the information within the study guide is included in the next revision of the text itself, it will serve to make the text more complete and to make the information available to all of those using the text itself. Until then, the study guide may serve to be a useful supplement to the text - especially for those engaging in a self-study program.

Kathleen Heck

ECONOLINE PRODUCTS, INC.

BOX 26774, CHARLOTTE, N.C. 28213 (704) 596-6842

NEW

PRETAPE UNDERWRAP



\$25.00 PER CASE

ECONOWRAP II PACK
48 ROLLS, 2 3/4 IN. X 30YDS.

MADE WITH THE
FINEST QUALITY
URETHANE FOAM

WRAPS AROUND
THE FOOT WITH-
OUT FOLDING OR
ROLLING OVER.



\$30.00 PER CASE

REGULAR PACK
50 ROLLS, 3IN. X 30YDS.

• ECONOLINE PAYS ALL FREIGHT

The Importance of Isokinetic Power and Its Specificity to Athletic Conditions

by

Alan H. Halling, A.T.C.

and

Jeffrey N. Dooley, A.T.C.

Introduction

Athletic performance is dependent upon the immediate status or stage of development of the human neuromuscular system and its ability to adapt to specific demands placed upon it. Thus, resistive exercise protocol should parallel and/or simulate the specific functional activity at hand.

In the past, however, misconception of the terms strength and power, and their relationship to isotonic and isokinetic methods has caused difficulty in grasping specificity parameters. Too much emphasis has been placed on conventional isotonic methods and the development of absolute strength while limited research has been conducted with new isokinetic procedures and the development of power.

The purpose of this paper is to better clarify the concepts behind isotonic exercise, isokinetic exercise, strength, power, and their interrelationships, allowing implications to be made regarding most advantageous and athletic performance related exercise protocol.

Isotonic and Isokinetic

The concepts involved in the isotonic method of resistive exercise have been closely examined in the recent past by several researchers (1, 2, 3, 4, 8, 9, 10, 11, 12, 14, 15). They all tend to agree that during isotonic exercise the magnitude of the weight being moved must be limited to the largest effective load that can be moved past the weakest point in the range of motion, with the speed of movement being extremely variable. Consequently, the tension demand placed on the muscle is maximum only during a small portion of any range of motion, meaning the total work done is significantly less than maximum.

Isokinetic exercise, a relatively new method of resistive exercise, attempts to utilize the advantageous concepts

and eliminate the disadvantageous concepts of isotonic exercise. Thus, it has become popular opinion (1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15) that loading a muscle isokinetically is advantageous in that speed is kept constant, resistance is accommodating and maximal at every point in a range of motion, one concentric contraction must be followed by a reciprocal concentric contraction of the antagonistic muscle group, and the physical work which a muscle actually performs is maximized.

Strength and Power

The force output of a muscle as well as the torque (force) it generates at the joint is a function of the tension that contracting muscle can develop. This, according to Hislop and Perrine (4), is the parameter most usually referred to when the term strength is used. Strength is defined in simpler form by Wilmore (15) as the ability to apply or to resist force.

Power is simply the product of strength (force output) and speed (15). In other words, the time it takes for muscles to develop force, the rate at which muscles contract and sustain a force throughout the range of motion, and the relationship of speed to force are all facets of power.

More specifically, contractile power, which relates most closely to performance, training, and principles of muscle mechanics, is the ability to maintain the tension at velocities which are within the specificity ranges of functional activities (7).

Moffroid and Whipple (6) cite the importance of specificity of training, concluding that exercise is speed specific in the following ways: 1) Low power/absolute strength (low speed, high load) exercise produces greater increases in muscular force at all speeds of contraction at and below the training speed. In short, training for an increase in power will also bring about an increase in absolute strength.

Therefore, as can be seen, strength and power are highly related, but cannot be used interchangeably. Each has its own meaning.

Interrelationships

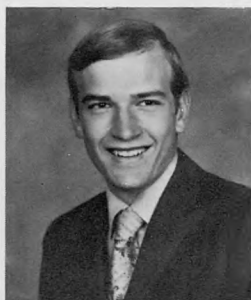
Both isotonic and isokinetic exercise methods can place demands on the absolute strength capacity of a muscle. Isotonically it is done by controlling the amount of resistance (heavy weight loads) and isokinetically it is done by controlling the speed of movement (slow speeds). In either case, work is performed against high resistive forces at slow speeds, which shows little relation to most athletic performance situations, merely because the majority of sporting events demand high velocities; in excess of 90 degrees/second (15).

However, isotonic exercise is limited in its ability to tax the power capacity of a muscle, because resistance is constant and speed variable. As a result, there is an inverse relationship between force and speed so that, in practice, if one is to be increased the other necessarily decreases (4).

In contrast, the isokinetic concept of resistive exercise provides the opportunity to manipulate the desired speed

Allan Halling graduated in 1977 from San Jose State University, San Jose, California, with a Bachelor of Science degree in Physical Education.

He received his Masters of Science in Physical Education and Athletic Training from the University of Arizona.



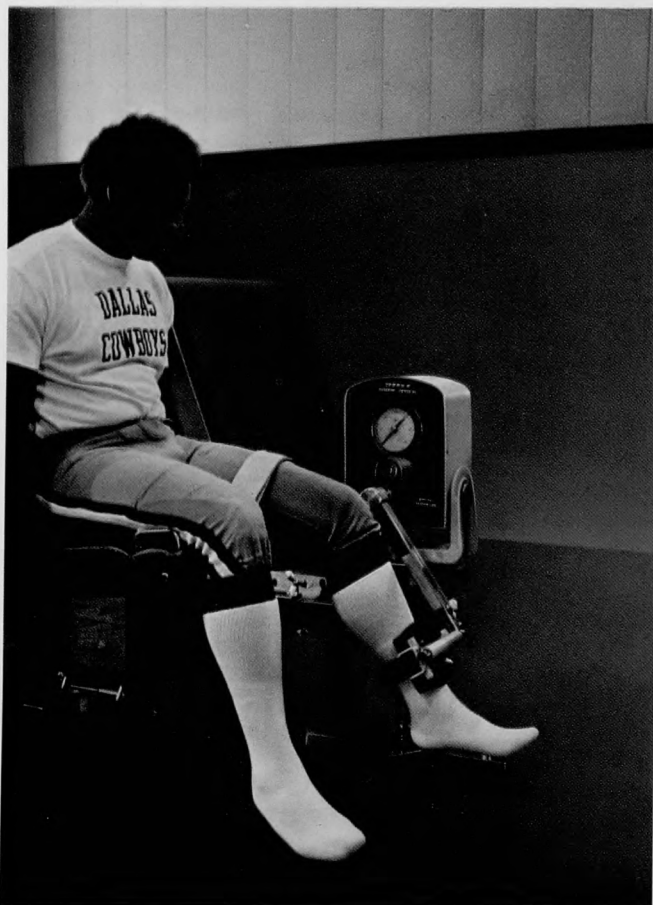
Jeffrey Dooley received a Bachelor of Arts in Physical Education/Pre-therapy from California State University, Sacramento, in Sacramento, California in 1977.

He received a Master of Science in Physical Education/Athletic Training at the University of Arizona in Tucson, Arizona.



5 Superbowls - 12

How does one of the winners maintain one of the lowest injury rates?



CYBEX II testing detects key injury predictors (left to right and agonist to antagonist imbalances — strength, power and endurance deficits). Helps you measure degree of injury, set rehab goals, evaluate progress and determine when rehabilitation is truly complete. And, CYBEX II provides total rehab exercise capability for every major body joint.

The Dallas Cowboys

If you know The Cowboys Football Club, you know they have consistently excellent management, coaching and training staffs that have made them one of the winningest organizations in sports. What you may not know is what goes on behind the scenes.

Fewer Injuries — Faster Recoveries

Sure, Dallas attracts and picks great players. But just as important, they keep those players on the field with fewer injuries and faster, more complete rehabilitation. A key factor in Dallas' success is their intensive sports medicine and conditioning program.

Screening, Injury-Prevention, Rehabilitation & Conditioning

Every precaution is taken. Thorough screening provides



ORTHOTRON is designed for knee, ankle and shoulder exercise for injury-prevention and rehabilitation programs. Many teams and clinics have found ORTHOTRON to be the most effective knee power training device because it provides *higher exercise speeds, more resistance and more work per repetition* than any other exercise equipment.

an "early warning system" whether the subject is a pre-draft rookie or a seasoned veteran (test results often show up weaknesses even in athletes thought to be in top condition). Injury-prevention programs are prescribed to eliminate specific weaknesses and to promote all-out performance by every player. Injuries are evaluated, treated, exercised and re-tested to insure the most complete rehabilitation possible and minimize the risk of re-injury. Conditioning is a year-round, scientific effort concentrating on development of lean body mass, power and power-endurance.

Dallas players know that the Club cares about them. And it shows in the way they play.

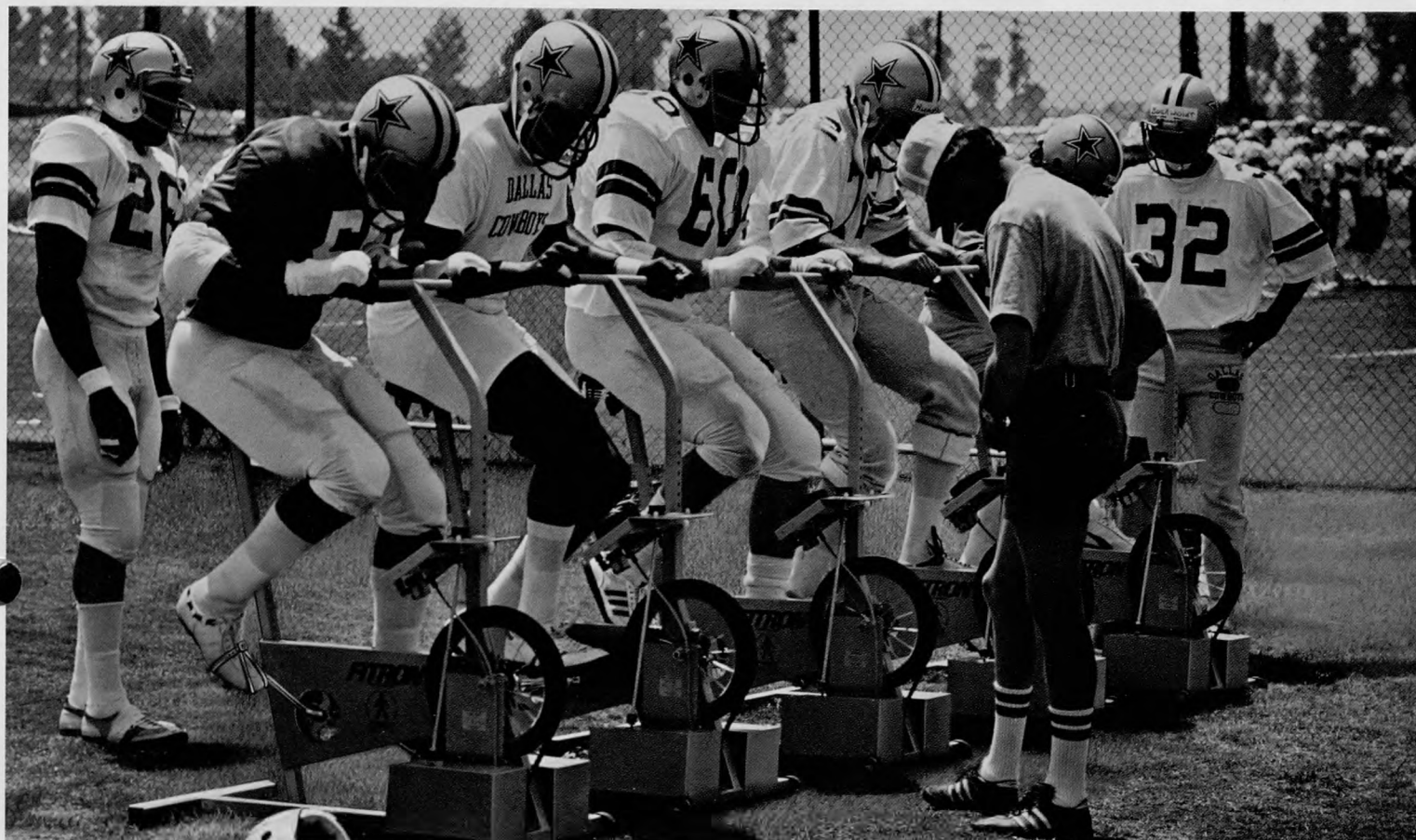
CYBEX Testing and Exercise Systems

The Dallas Cowboys depend on CYBEX equipment and CYBEX Isokinetic testing and exercise protocols for a

2 out of 13 Playoffs...

winningest teams in sports

injury records in their game?



FITRON can play an important part in any sports medicine or conditioning program. In rehabilitation, athletes can prevent atrophy and maintain cardiovascular endurance even when they can't run or exercise on other equipment because of an injury. For conditioning, athletes can do higher work rates on FITRON than possible in any other exercise activity regardless of equipment used—*actually conditioning the cardiovascular/pulmonary systems beyond the demands of any sports activity*. Think about the incredible endurance performances of many individual athletes who train on FITRON, like Muhammed Ali.

critical part of their sports medicine and conditioning program. So do most other top pro and college teams in every sport and most leading sports medicine clinics.

There's more you should know

Regardless of what additional equipment they have, team physicians, trainers and coaches agree that CYBEX Systems are the best investment you can make to protect any team's largest investment—talented athletes. Find out why. Send in the coupon at right. Or better yet, sign up now for one of CYBEX's seminars on orthopedics and sports medicine this April.



Sports Medicine Department
100 Spence Street
Bay Shore, N.Y. 11706
(516) 273-2200

CYBEX Division of Lumex • 100 Spence Street • Bay Shore, N.Y. 11706

Please ☐ send me literature/☐ contact me about:

☐ Comparative testing for injury evaluation. ☐ Screening for injury susceptibility.

☐ Exercise prescription for rehabilitation and injury-prevention programs.

☐ Objective verification of treatment results.

☐ Measuring physical impairment for compensation and personal injury litigation.

CYBEX Orthopedics and Sports Medicine Seminars.

Name _____ Title _____

Inst./Prac./Team _____

Address _____ City _____

State/Country _____

Phone () _____

Zip _____

of motion. This allows for maximal power development under training conditions which more closely approximate athletic performance.

Wilmore (15) discusses further the importance of speed in relation to muscle power development and athletic performance simulation. In isotonic exercise the relative limb speed rarely exceeds 60 degrees/second, while most functional movements in athletics require limb speeds in excess of 90 degrees/second, with some exceeding 200 degrees/second. Thus, with the advent of isokinetic equipment, which allows for training speeds of up to 270 degrees/second, specificity parameters can be manipulated and muscular power maximally developed.

Implications for Exercise Protocol

Before an appropriate discussion of specific exercise protocol is to take place it must be clarified here that maximal muscle power output as developed isokinetically is more specific, and thus advantageous, to athletic performance situations than is absolute muscle strength as developed either isotonically or isokinetically.

Common force/velocity relationships show that as speed of movement increases torque output decreases. Manipulation of velocity by isokinetic methods has made it quite conceivable that the speed of exercising can be progressively increased above initially slow rates in accordance with neuromuscular improvement until rates simulating functional activity have been attained.

Progressive increases of a small nature are very important in the development of power in that enough time must be given the muscle to allow full development of the contractile component (5).

In planning an isokinetic exercise protocol for maximal power development the objective should be to produce the same amount of force at increasingly faster speeds that was produced at the slower speeds. This should minimize, if not delete, the drop in the force/velocity curve (Figure 1). Instead of force output falling with an increase in speed, the force output is attempted to be kept constant

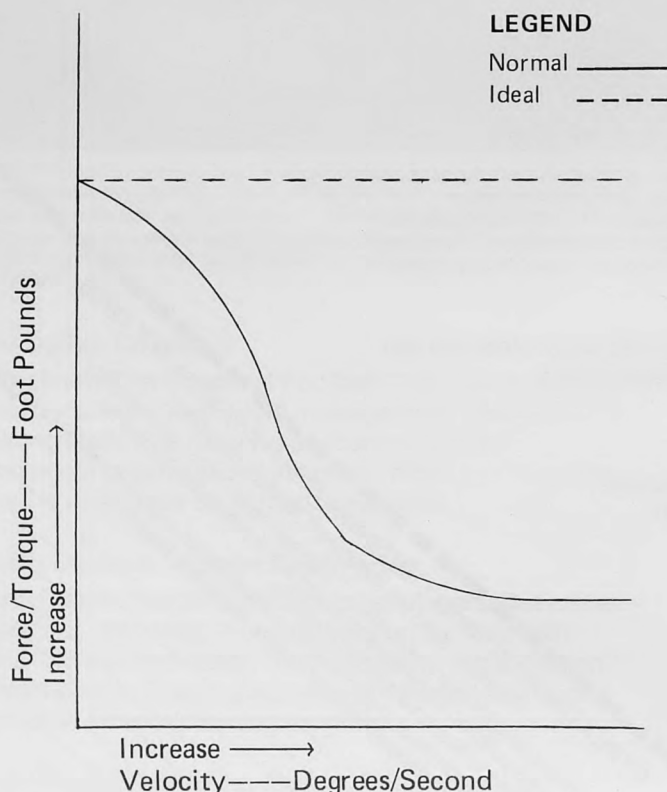


FIGURE 1. Force/Velocity Curve

as speed of motion is increased.

Because muscular power is one of the most important and specific aspects in relation to functional motion in athletics, this suggested exercise protocol should be given considerable thought by all those involved in, or associated with, muscle training procedures.

Summary and Conclusions

This paper has attempted to clarify misconceptions about the parameters of isotonic exercise, isokinetic exercise, strength, and power as to their specificity capabilities and interrelationships.

In this attempt the following is suggested:

- 1) That both isotonic and isokinetic exercise methods are capable of developing muscular strength.
- 2) That only isokinetic exercise is capable of developing the power capacity of a muscle.
- 3) That slow speed, high resistance exercise (strength) is minimally related to athletic performance situations.
- 4) That fast speed, low resistance exercise (power) is highly related and specific to athletic performance situations.
- 5) That true athletic performance situations are best simulated and specifically trained for by developing muscular power with isokinetic methods.

BIBLIOGRAPHY

1. Bates, B.T. "Scientific Basis of Human Movement," *Journal of Physical Education and Recreation*. 48:68-74, October 1977.
2. Counsilman, J.E. "The Importance of Speed in Exercise," *Athletic Journal*. 56:72-75, May 1976.
3. Hinson, M. and Rosentswieg, J. "Comparative Electromyographic Values of Isometric, Isotonic, and Isokinetic Contractions," *Research Quarterly*. 44:71-78, March 1973.
4. Hislop, H.J. and Perrine, J.J. "The Isokinetic Concept of Exercise," *Physical Therapy*. 47:114-117, February 1967.
5. Moffroid, M. et al. "A Study of Isokinetic Exercise," *Physical Therapy*. 49: 735-746, 1969.
6. Moffroid, M. and Whipple, R.H. "Specificity of Speed of Exercise," *Physical Therapy*. 50: 1699, December 1970.
7. Moffroid, M. and Kusiak, E. "The Power Struggle," *Physical Therapy*. 55:1098-1104, October 1975.
8. Perrine, J.J. "The Isokinetic Loading Principle," Isokinetics Seminar presentation at Centinela Hospital, Los Angeles, California, April 22-23, 1977.
9. Perrine, J.J. "Isokinetic Exercise and the Mechanical Energy Potentials of Muscle," *Journal of Health, Physical Education, and Recreation*. 39:40-44, May 1968.
10. Pipes, T.V. "Strength Training Modes: What's the Difference?" *Scholastic Coach*. 46:10, May/June 1977a.
11. Pipes, T.V. "The Acquisition of Muscular Strength Through Constant and Variable Strength Training," *Athletic Training*. 12:146-151, Fall 1977b.
12. Pipes, T.V. and Wilmore, J.H. "Isokinetic vs. Isotonic Strength Training in Adult Men," *Archives of Physical Medicine and Rehabilitation*. 48:279-282, June 1967.
14. Thorstensson, A., Grimby, G., and Karlsson, J. "Force-Velocity Relations and Fiber Composition in Human Knee Extensor Muscles," *Journal of Applied Physiology*. 40:12-16, January 1976.
15. Wilmore, J.H. *Athletic Training and Physical Fitness*. Boston, Mass.: Allyn and Bacon, Inc. 1977.

CURRENT LITERATURE



by Ed Christman, A.T., C.
THE COLLEGE OF WILLIAM & MARY

"A Comparison of Two Methods of Developing Quadriceps Muscle Strength," Perrin, D. *Journal of the American Physical Therapy Association* (Winter 1978/Special Edition), 1156 15th Street, Washington, D.C. 20005. 4:4, Winter, 1978.

"When Wrestlers Shed Pounds Quickly," Ribisl, P. *Scholastic Wrestling News*, 2 Carriage Way, Missoula, Montana 59801. 14:12, January 15, 1979.

"Effect of Physical Activity on Human Potassium Metabolisms in a Hot and Humid Environment," Lane, H. et al. *American Journal of Clinical Nutrition*, 9650 Rockville Pike, Bethesda, Maryland. 20014, 31(5):838-43, May, 1978.

"Aerobic Performance Capacity in Athletes, Rusko, H. et al. *European Journal of Applied Physiology and Occupational Physiology*, Excerpta Medica, P.O. Box 211, Amsterdam, Netherlands. 38(2):151-9, 20 March, 1978.

"Good Shoes for Bad Feet," Hlavac, H. *Journal of the American Podiatry Association*, 20 Chevy Chase Circle, N.W., Washington, D.C. 20015. 68(4):248-52, April, 1978.

"Diminished Insulin Response in Highly Trained Athletes," Lohmann, D. et al. *Metabolism*, 111 Fifth Ave., New York, New York 10003. 27(5):521-4, May, 1978.

"The Pediatrician and Sports-medicine," Smith, N. *Pediatrics*, Box 1034, Evanston, Illinois 60204. 61(3):497-9, March 26, 1978.

"Weight Loss in Wrestlers," Buskirk, E. *American Journal of Diseases of Children*, 535 North Dearborn Street, Chicago, Illinois 60610. 132(4):355-6, April, 1978.

"The Case Against Fluid Restrictions," Westerman, R. and Martin, C. *Scholastic Wrestling News*. 14:10-11, March 1, 1979.

"Acute Recreational Injuries," Millar, A. *Australian Family Physician*, Royal Australian College of General Practitioners, 1st Floor, 70 Jolimont 3002, Victoria, Australia. 7(4):379-85, April, 1978.

"Skateboard Injuries," Kemm, I. *British Medical Journal*, Tavistock A. Square, London WC1H9 JR, England. 1(6117):894, April 8, 1978.

"Injuries in High School Sports," Garrick, J. et al. *Pediatrics*. 61(3):465-9, March, 1978.

"Running for Life, Health, and Pleasure," Friedman, B. et al. *American Journal of Nursing*, 10 Columbus Circle, New York, New York 10019, 78(4):602-7, April, 1978.

"Vision and Sports," Getz, D. *Journal of the American Optometric Association*, 7000 Chippewa St., St. Louis, Missouri 63119. 49(4):385-8, April, 1978.

"Cardiovascular Function in Former Athletes," Fardy, P. *The Physician and Sportsmedicine*, 4015 West 65th Street, Minneapolis, Minn. 55435. 6:34-40, August, 1978.

"Effect of Fitness on Aging," Pollock, M. *The Physician and Sports-medicine*. 6:45-48, August, 1978.

"Aggression, Performance Variables, and Anger Self-Report in Ice Hockey Players," McCarthy, J. et al. *Journal of Psychology*, Journal Press, 2 Commercial St., Provincetown, Mass. 02657. 99 (First Half):97-101, May,

1978.

"An Unusual Case of Intra-Articular Dislocation of the Patella," Colville, J. *Injury*, John Wright and Sons, Ltd., 42-44 Triangle W., Bristol, England, 9(4):321-2, May 1978.

"Sports Injuries to the Hand," Moore, J. *Journal of the Arkansas Medical Society*, Box 1208, Fort Smith, Arkansas 72901. 74(12):501-6, May, 1978.

"Girls' Sports Injuries in High School Athletics," Garrick, J. et al. *Journal of the American Medical Association*, 535 North Dearborn Street, Chicago, Illinois 60610. 349(21):2245-8, May 26, 1978.

"The Ruptured Spleen in College Athletes: A Preliminary Report," Frelinger, D. *Journal of the American College Health Association*, 2807 Central Street, Evanston, Illinois 60201. 26(4):217, February, 1978.

"The Longevity and Morbidity of College Athletes," Olson, H. *The Physician and Sportsmedicine*. 6:62-65, August, 1978.

"Oxygen Uptake in Well-Trained Athletes at Various Points in a Distance Run," Caldwell, M. et al. *Journal of Sports Medicine and Physical Fitness*, J.B. Lippincott Co., E. Washington Square, Philadelphia, Pa. 19105. 18(1):19-23, March, 1978.

"Factors Related to Hamstring Strain," Liemohn, W. *Journal of Sports Medicine and Physical Fitness*. 18(1):71-6, March, 1978.

"Dance Me Loose," Damlevicius, Z. *Journal of the American Medical Association*. 239(24):2593, June 16, 1978.

"Racket Sports. An Ocular Hazard," Vinger, P. et al. *Journal of the American Medical Association*. 239(24):2575-7, June 17, 1978.

"Effect of Underwrap Conditions on the Supportive Effectiveness of Ankle Strapping with Tap," Delacerta, F. *Journal of Sports Medicine and Physical Fitness*. 18(1):77-81, March, 1978.

"Overuse Injury of the Legs," McNamee, J. *Medical Journal of Australia*, 71-79 Arundel ST., Glebe, N.S.W. 2037, Australia. 1(8):426-30, April 22, 1978.

"Acute Muscle Injuries of the Leg," Millar, A. 1(5):264-5, March 11, 1978. *Medical Journal of Australia*.

A Tip from the Field:

The D.P. Technique for Blisters

by
Danny Poole
Western Carolina University

I believe that the first thing to do would be to go back and re-examine what a blister really is.

A blister is usually caused by some type of irritating factor. There are many types of irritants such as: friction, chafing of the skin or burns. In athletics our major concern will be friction. As a result of this friction, a separation of the epidermal layer of skin from the dermal layer of skin occurs, with tissue fluid or exudates accumulating between the two layers. These exudates may be clear, bloody or purulent. Let me note now that the covering of a blister should not be removed if at all possible, because this covering protects the underlying tissues.

Now that we have distinguished what a blister is, let us now get into the mechanics of this new method. Let it be known that I started using this method in 1972, at West Mecklenburg High School in Charlotte, North Carolina. As far as I have researched this method for taking care of blisters has never been published before. This is a very simple procedure.

The only items that you need are: (1) One small sewing needle, (2) white sewing thread, (3) scissors, (4) Betadine solution, (5) bandaids and sterile gauze pads. Fig. 1



Figure 1

STEP 1:

The first thing a trainer must do is make sure that the area he will be working with has been cleaned thoroughly. He must also make sure that he has cleaned himself properly. The area should first be cleaned with soap and water; then with the Betadine solution. Fig. 2 / Fig. 3



Figure 2



Figure 3

STEP 2:

The trainer should now sterilize the needle and white sewing thread. The best way to do this is by letting these materials soak in the Betadine solution for ten to fifteen minutes.

STEP 3:

After everything has been cleaned and sterilized, you are ready to start the procedure. Thread the needle with the white thread, make sure you have enough thread so there will be at least one inch of thread hanging out on

both sides of the blister when finished with the procedure.

STEP 4:

With the needle and thread in hand, push the needle, longitudinally, all the way through the blister. After you have the needle through the blister, pull the thread so there is at least one inch, externally, on each side of the blister. Fig. 4 / Fig. 5



Figure 4



Figure 5

STEP 5:

Cut the needle away from the thread. Take the Betadine solution and either a gauze pad or cotton ball and saturate the thread with the Betadine solution. Then, gently pull the thread back and forth through the blister so the Betadine solution will go inside the blister so as to guard from infection. Fig. 6 / Fig. 7



Figure 6



Figure 7

STEP 6:

The Betadine saturated thread should be left inside the blister for a minimum of 24 hours. The reasoning behind this is so the exudates may flow through the string and out of the blister. You should cover the affected area with a bandaid or sterile gauze pad, to help soak up the extra fluids that are put out through the string and to aid from infection.

STEP 7:

When the 24 hour period is up, you should then pull the thread out of the blister and check for any signs of infection, then paint the blistered area with some sort of skin toughening astringent. The trainer should check back with the athlete every day for signs of infection. In virtually all cases the epidermal layer of skin *will not die*. Fig. 8



Figure 8

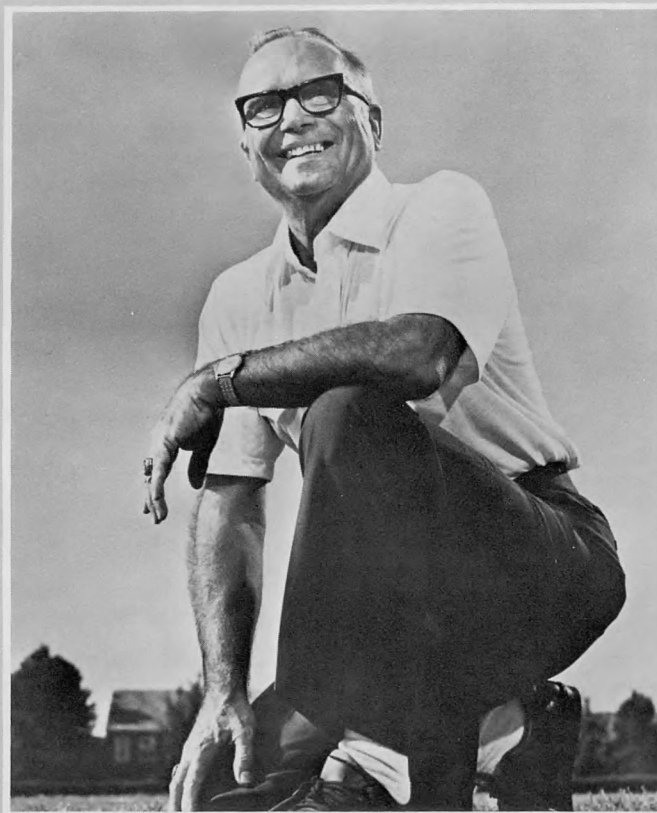
This method has been used in countless cases since 1972 and has not failed yet. I would like to thank everyone that helped me in the use of this new method. For any additional information you can contact me at either of the following addresses:

Home: Danny Poole
233 Sturbridge Dr.
Charlotte, N.C. 28214
(704) 399-0006

School: Danny Poole
Head Student Assistant Trainer
Athletic Dept. Training Room
Western Carolina University
Cullowhee, N.C. 28723
(704) 227-7395

In Memoriam

KENNETH B. RAWLINSON



Kenneth Bouch Rawlinson died at noon, March 1, 1979 at the age of 64 following a two week illness. Ken was admitted to Norman Municipal Hospital February 15 after suffering a heart attack during basketball practice.

Kenneth Rawlinson was head trainer at Oklahoma University for twenty-six years; spanning from February 1, 1953 until his untimely death. During his first years at Oklahoma, Ken was also the swimming coach, leading his teams to several Big Seven Conference titles.

Ken was born in Ford City, Pennsylvania, July 25, 1914 and graduated from Ford City High School in 1931. He received his B.A. Degree in Physical Education from Illinois University in 1936 and his M.A. in Education from Illinois in 1942. He was head trainer at William and Mary from 1942 to 1947, and Lafayette College from 1947-53. He served as president of The National Athletic Trainers Association in 1955, and was named Rockne Club trainer in 1959. His book, *Modern Athletic Training*, is considered by many to be one of the best trainers' books ever printed. In 1960, Ken attended the Olympics in Rome. He wrote many articles for the American Medical Association Journal, The Journal of Bone and Joint Surgery, The Oklahoma State Medical Journal, Athletic Journal, and Scholastic Coach. Ken lectured in many foreign countries during his summer terms. He guided fourteen Sooner teams to bowl games during his time at Oklahoma. In 1968, Ken was elected to the Helms Foundation National Trainers Hall of Fame. In 1977, Ken was awarded the Russell R. Myers Award from The Association of University of Oklahoma Professional Employees for dedication to his school, job, and community.

Those of us who were fortunate enough to have been able to have worked with Ken feel his loss as much as if we were his family. We wish to express our sympathy to Ken's wife Sally and to his son Gary, whom we love very dearly.

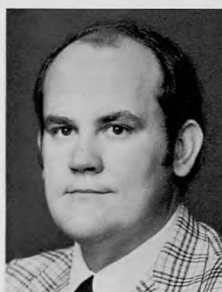
Ligament Ruptures Produced by Forced Inversion of Cadaver Ankles

by
KENNETH L. KNIGHT, Ph.D., ATC
Indiana State University

NOTE: This paper was presented to the 25th Annual Meeting of the American College of Sports Medicine in Washington DC, May 24-27, 1978. The assistance of Ms. Marilyn Sanford and Mr. Jim Martin of the Physical Therapy Department of the University of Missouri-Columbia (where this study was conducted) is gratefully acknowledged.

Although knee injuries are generally more severe, the sports medicine team is faced with no problem more

Dr. Knight is an associate professor and an athletic trainer at Indiana State University. He received B.S. degree from Weber State in 1969 and 1973, and a Ph.D. from the University of Missouri-Columbia in 1977. He moved to Indiana State in the fall of 1978 after serving two years as the athletic training program director and associate trainer at SUNY-Brockport. Formerly he was the head trainer at Weber State.



frequently than that of the injured ankle (9). It is generally agreed that the anterior talofibular (ATF) ligament is the most commonly sprained ligament and that this injury occurs when the foot is plantar flexed and inverted (1, 4, 5, 8, 11, 16, 22, 25). No data could be found in the literature, however, to support the role of plantar flexion in this injury. This study was designed to investigate the effects of plantar flexion on ligaments torn during inversion stress of the ankle.

A sprain is defined as the rupture of some or all of the fibers of a ligament (19). The primary ligaments involved in ankle sprains are defined below. These ligaments hold four bones (calcaneus, talus, distal portion of fibula, and distal portion of the tibia) together to form the ankle joint (Figure 1).

Deltoid - fibers course from the medial malleolus (of the tibia) to the navicular, anterior aspect of the talus, calcaneus, and posterior aspects of the talus. This ligament is sometimes defined as four separate ligaments.

Anterior Tibiofibular - fibers course downward and laterally from the tibia to the fibula. This is part of the tibiofibular syndesmosis, which also includes the distal interosseus and the posterior tibiofibular ligaments.

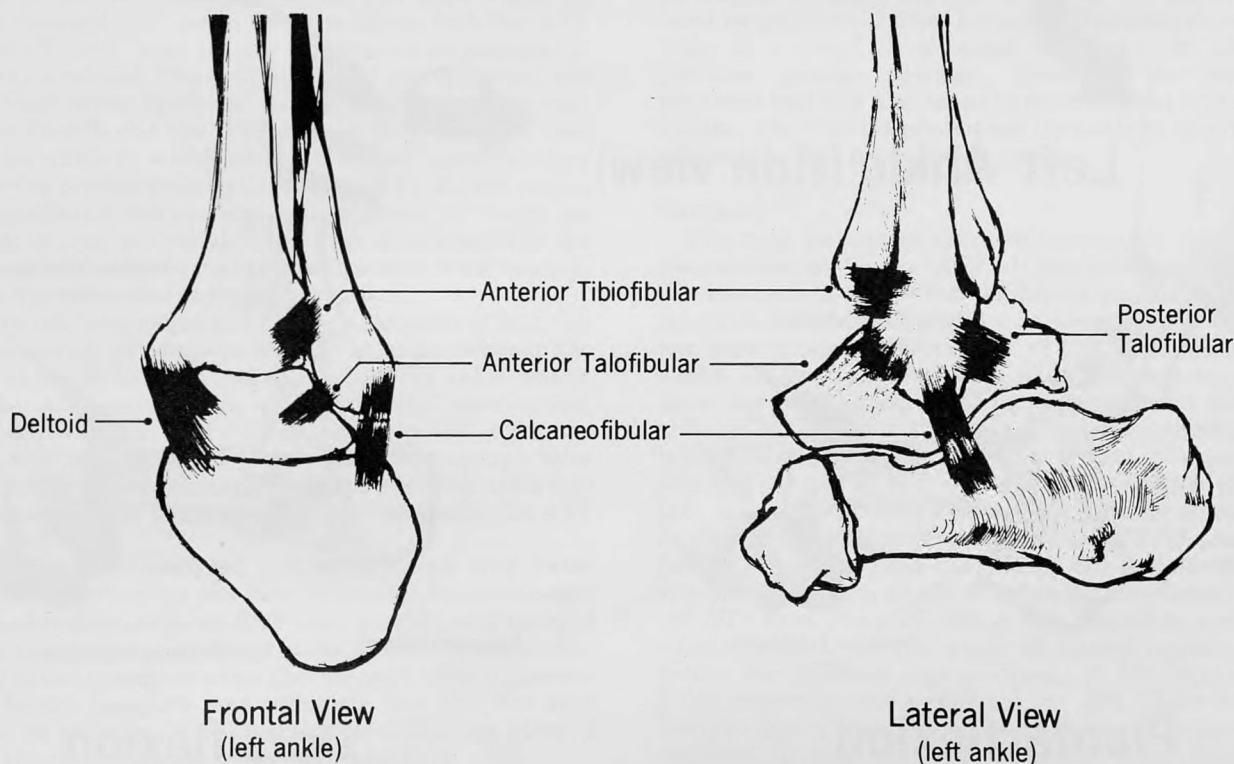


Figure 1
Ligaments most commonly involved in ankle sprains.

Anterior Talofibular - (ATF) fibers pass from the anteriolateral tip of the lateral malleolus (of the fibula) to the base of the neck of the talus on its lateral aspect.

Calcaneofibular - (CF) fibers extend downward and slightly posteriorly from the mid-lateral aspect of the lateral malleolus to the calcaneus.

Posterior Talofibular - (PTF) fibers course from the posteriolateral aspect of the lateral malleolus horizontally backward to the tubercle of the talus.

Approximately 85 percent of all ankle sprains in athletics are inversion sprains, the vast majority of which involve the ATF ligament (10, 22, 25). In the past some authors (2, 12, 20, 21, 23) felt that the most commonly damaged ligament was the tibiofibular syndesmosis with tearing of the anterior tibiofibular ligament. Bronstrom (3), however, seems to have settled this question with a study of 239 patients seen during a nine month period in 1961-62. Patients were examined clinically, with arthrography, and at surgery. Sixty-four (64) percent of the patients suffered damage to the ATF ligament only, 17 percent to both the ATF and CF ligaments, for a total of 81 percent with primary ATF involvement. Only 10 percent suffered damage of the Anterior Tibiofibular. No PTF tears were reported. The remaining 9 percent was distributed between deltoid and combinations of deltoid with ATF, CF, and Anterior Tibiofibular.

The preponderance of lateral sprains over medial sprains has been thought to be due to the fact that the lateral malleolus is longer than the medial malleolus, and therefore, inversion occurs more readily than eversion (10). As a rule, however, lateral sprains are not due to pure inversion (22). Clinicians have agreed that the force usually consists of inversion, internal rotation, and plantar flexion. (1, 4, 5, 8, 11, 16, 22, 25). This is thought to be due to decreased stability of the ankle when in plantar flexion (2, 5, 8, 11, 16, 22). As viewed from above, the general shape of the talus is that of a trapezoid, i.e., the anterior portion of the body is wider than the posterior

portion. In dorsiflexion the wider anterior aspect of the talus supposedly wedges tightly between the two malleoli so as to prevent any lateral motion. Thus the ankle would be very stable in dorsiflexion (22). In plantar flexion, however, the wedge effect is thought to be lost (16). As the foot moves into plantar flexion the narrower part of the body of the talus would move into the ankle mortise and some lateral instability results. The small amount of free play in plantar flexion is thought to predispose the ankle to injury (5, 22).

Inman (13), however, has questioned this position. Following an extensive review of his own and others research he concluded:

"Furthermore, the widely published assertions, in clinical texts, that there is increased lateral play of the talus in plantar flexion, and the failure of investigators who have specifically studied this possibility to support such a statement, are a remarkable journalistic phenomenon. One cannot suppress the feeling that some authors have been guilty of whimsical and capricious thinking."

Inman agreed that the ankle was less stable in plantar flexion and postulated that it might be due to an increased angle between the CF and ATF ligaments in some people.

Experimental Procedures

Fourteen ankles from ten cadavers were used for this study. Previous dissection by physical and occupational therapy students had exposed all muscles and tendons of the lower leg and foot. In the majority of cases both the flexor and extensor retinaculum were gone. The joint capsules were intact. Six ankles that did not meet this criteria were rejected. Of the 14 ankles studied, seven received sprains while in dorsiflexion, five while in extreme plantar flexion (25-35°), and two while in mild plantar flexion (10-15°).

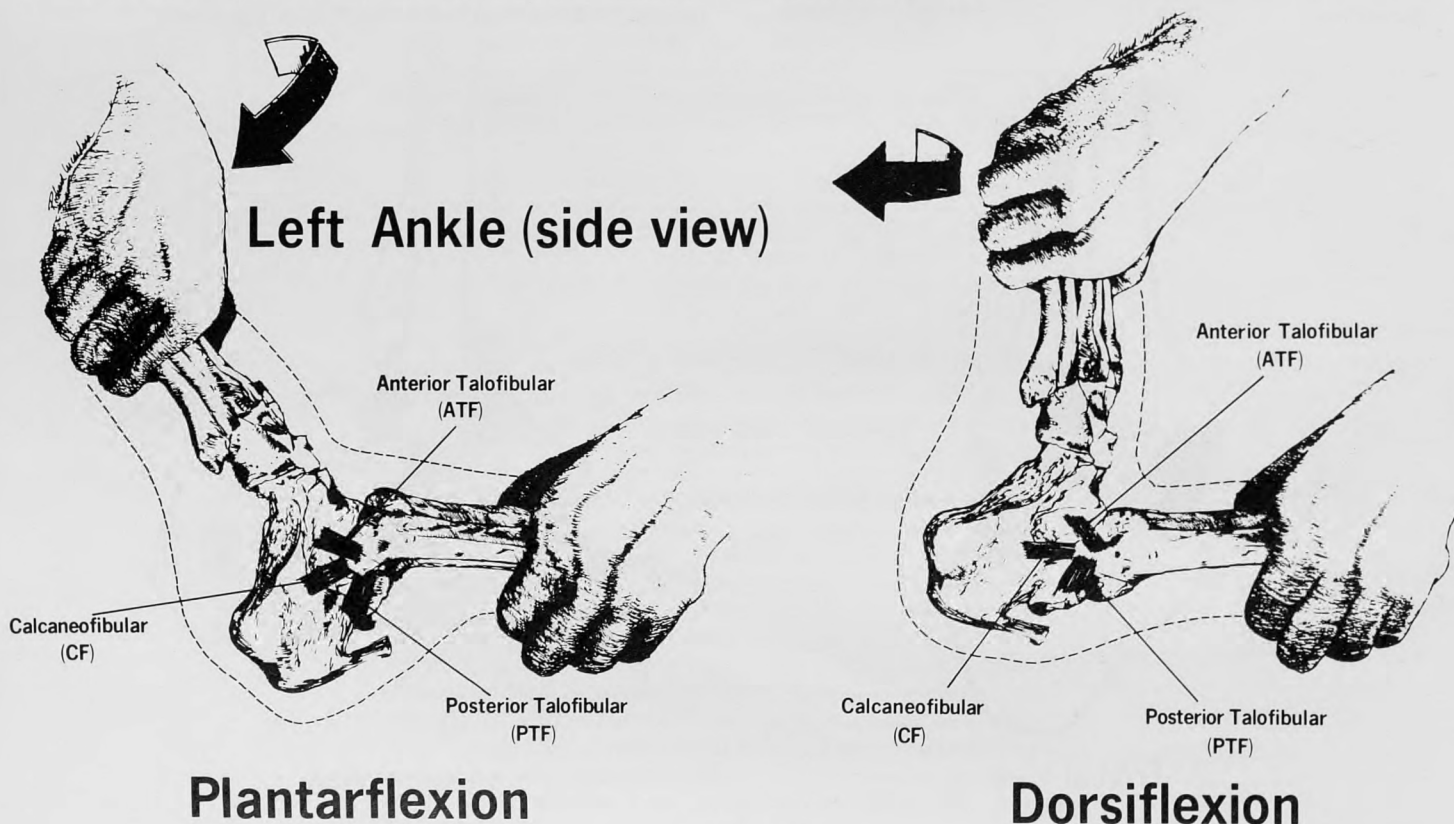


Figure 2

Ligaments were ruptured by manual inversion of ankles in either plantar flexion or dorsiflexion.

Summary of 14 Experimental Ankle Sprains in 10 Cadavers

	Plantarflexion	Dorsiflexion	Totals
ATF Torn	6 (3 ATF Only) (3 ATF + CF)	1 (All three)	7
Other Torn	1 (CF - Mild Plantarflexion)	6 (4 PTF Only) (2 CF Only)	7
Totals	7	7	14

key: ATF - Anterior talofibular
CF - Calcaneofibular
PTF - Posterior talofibular

Table 1

The tendocalcaneus was incised to allow free dorsiplantar flexion. All other muscles were loose enough that their contribution to the support of the ankle was judged to be negligible.

The lower leg was held 20-25 cm. above the malleolus with one hand; the other hand grasped the foot in the tarsal-metatarsal area. The foot was plantar flexed or dorsiflexed and then slowly inverted (Figure 2). The inversion stress was increased until a tear was heard. Pressure was relieved as quickly as possible. The ankle was then examined to determine the extent of damage to each ligament. We had no way to quantify the amount of pressure applied to the ankles, and therefore it was not measured. Force was applied until a ligament ruptured.

Results

A summary of the data is presented in Table 1. In six of the seven plantar flexed ankles the ATF tore: Three involved isolated ATF tears, in three others both the ATF and the CF tore. In one plantar flexed ankle an isolated CF tear was produced. The isolated CF and one of the isolated ATF tears were produced during mild plantar flexion. During dorsiflexion the ATF tore in only one case, that being an ankle in which all three lateral ligaments tore before the pressure was relieved. The ATF did not tear in six dorsiflexed ankles: and two isolated CF tears occurred. In four of the cases the bony attachments of the ligament avulsed rather than the ligament itself tearing. These were accepted as ligament tears.

Since the force required to cause a ligament to tear was not measured, no comparison could be made between the force required to tear ligaments while the ankle was in plantar and dorsiflexion. A subjective observation, however, was that more force was required while the ankle was dorsiflexed. In fact, in one ankle enough force could not be applied to tear a ligament while the ankle was dorsiflexed. After being placed in plantar flexion the ATF tore.

The data were analyzed with a chi Square with Yates correction. Except in the case where all ligaments tore during dorsiflexion as an ATF tear, a chi Square value of 4.57 was obtained; significant at the .05 level of confidence. It might be argued however, that since all three ligaments tore before pressure was relieved, that the one case should be rejected. With the removal of this one piece of data, the chi Square value increased to 6.41 (p .02).

Discussion

These data substantiate the opinions of clinicians (1,4,

5, 8, 11, 16, 22, 25) that plantar flexion is involved in the production of lateral or inversion ankle sprains. These data showed that forceful inversion of the plantar flexed ankle caused damage to the ATF ligament only, while forceful inversion of the dorse-flexed ankle caused damage to ligaments other than the ATF. Since the majority of ankle sprains involve the ATF ligament (3) it can be inferred that plantar flexion contributes to the majority of ankle sprains.

We can conclude nothing from these data, however, concerning the relationship between ankle sprains and the stability of the ankle. The data of Inman (13) seems to refute the theory that there is increased lateral play of the talus in plantar flexion as was suggested (2, 5, 8, 11, 16, 22). Further research must be conducted to establish the relationship between ankle stability and ankle sprains.

The aims and objectives of ankle taping and ankle wrapping must be examined in light of these findings. Libera (15) wrote that the intent of taping an ankle is twofold: First, to support the ligaments and tendons which prevent excessive inversion of the ankle, and secondly, to provide this support with little plantar and dorsal flexion restriction, which would hinder running. O'Donoghue (22), Quigley (24), Mayhew (17), and Mayhew and Ritter (18) wrote that ankle wraps restricted lateral motion while leaving plantar and dorsiflexion unhampered. Juvenal (14) reported that elastic tape would give good support, yet be elastic enough to allow maximal plantar and dorsiflexion.

In theory, restricting inversion while allowing maximal plantar flexion is correct. These present data indicate, however, that restricting plantar flexion will reduce tears to the anterior talofibular ligament, which is the most commonly sprained ankle ligament. It would appear, therefore, that consideration must be given to restricting some plantar flexion when taping or wrapping ankles to prevent inversion sprains. Further research must be conducted to establish how much plantar flexion should be decreased.

The methods of wrapping and taping ankles presented by Davies (6) and Felder & McNeeley (7), respectively, must be questioned. They advocated applying lateral heel locks in a distal to proximal manner in an effort to promote greater eversion. However, the distal to proximal heel lock also tends to force the foot into plantar flexion, which would predispose the ankle to inversion injury rather than prevent the injury.

Summary

The most frequently sprained ligament in the ankle is the anterior talofibular (ATF). It has been suggested that this ligament is torn when the foot is plantar flexed and inverted, however, heretofore no experimental evidence has been presented in support of this theory. Fourteen ankles on ten cadavers were used. All muscles of the lower leg were exposed and loose enough that they contributed to support to the ankle. The tendocalcaneus was incised to allow free dorsi-plantar flexion. The joint capsule and all medial and lateral ankle ligaments were intact. At random ankles were placed either in dorsiflexion or plantar flexion and forceably inverted until a tear was heard. The ankles then were inspected to determine the site of the damage. In six of seven plantar flexed ankles the ATF tore. The ATF tore in only one of the seven dorsiflexed ankles. (In this ankle all lateral ligaments tore before the pressure was released.) A Chi Square with Yates correction was significant (p .05). These data confirm the theory that both plantar flexion and inversion are required to tear the ATF ligament. Also, these data suggest that consideration be given to preventing some plantar flexion when taping the ankle as a protection against lateral ankle sprains.

Attention Certified Athletic Trainers!

The Professional Education Committee is making available to the membership of the National Athletic Trainers Association the Proceedings of its Professional Preparation Conference entitled "Basic Athletic Training Education" held in Nashville, Tennessee on January 7-8, 1978 prior to opening sales to all persons concerned with the prevention and care of athletic injuries. Since this publication is designed to communicate important principles concerned with the prevention and care of athletic trainers, those certified athletic trainers purchasing this text will automatically be awarded O.I.C.E.U.'s. The range of the material presented in this publication will appeal to all readers interested in athletic injuries and the field of athletic training. The thirteen articles appearing in this proceedings were presented at the aforementioned conference by the following leading American sports medicine specialists and athletic trainers:

- The Role of the Athletic Trainer in Sports Medicine - Present and Future Marcus Stewart, M.D.
- Muscle Physiology - Speed and Strength Training, An Update David Costill, Ph.D.
- Neurological Evaluation Joseph Maroon, M.D.
- Endurance Training - An Update on the Basics David Costill, Ph.D.
- Gynecology for the Athletic Trainer . . . Karl Giulian
- New Careers for the Athletic Trainer Al Proctor, A.T., C
Phil Callicut, A.T., C.
Dick Hoover, A.T., C.
- Medical and Legal Ethics and Responsibilities for Athletic Trainers Larry Graham
- Protective Equipment and Its Fit Dick Malacrea, A.T., C.
- Orthopedic Evaluations - Lower Extremities Arthur Ellison, M.D.
- Three Years of NAIRS John Powell, A.T., C.
- New Methods for Pain Management Larry Gardner, A.T., C.
- Orthopedic Evaluation - Upper Extremities and Trunk Arthur Ellison, M.D.
- Tissue Healing and Repair - An Update Alexander Kalenak, M.D.

To purchase these proceedings, send \$10.00 in cash or check to "Proceedings", 11 White Building, Penn State University, University Park, Pennsylvania 16802. If submitting payment by check, please make it payable to NATA Professional Education Committee. This is your last chance to purchase this publication before it is made available to other persons interested in the prevention and care of athletic injuries. Don't miss out! 1977 Proceedings sold out in less than six months after its first printing.

Bibliography

1. Anderson, K.J., LeCocq, J.F., Clayton, M.L.: Ankle injury to the fibular collateral ligament of the ankle. *Clin Orthop* 23:146-161, 1962.
2. Bonnin, J.G.: *Injuries to the ankle*. Darien, Conn: Hafner Publishing Co. (Reprint of 1950 edition) 1970.
3. Brostrom, L.: Sprained ankles III. Clinical observations in recent ligament ruptures. *Acta Chir. Scand.* 130:560-569, 1965.
4. Buck, R.L.: It's only a sprained ankle. *Am. Family Physician* 6(4):69-75, 1972.
5. Calleit, R.: *Foot and Ankle Pain*. Philadelphia: F.A. Davis Co., 1968 pp 117-120.
6. Davies, G.J.: The ankle wrap: variation from the tradition. *Athletic Training* 12:194-197, 1977.
7. Felder, C.R., McNeeley J.: Ankle taping: an alternative to the basketweave. *Ankle Training* 13:152-156, 1978.
8. Fowler, P.J.: Ligamentous anatomy and physical examination. *Am J. of Sports Med.* 5:229-230, 1977.
9. Garrick, J.G.: The injured ankle: a sports medicine nemesis. *Sports Med. Bull.* 10(1): 8 & 4, 1975.
10. Garrick, J.G.: Ankle injuries: Frequency and mechanism of injury. *Athletic Training* 10:109-111, 1975.
11. Gerbert, J.: Ligamentous injuries of the ankle joint, *J. Am. Podiatry Assoc.* 65:802-815, 1975.
12. Goldstein, L.A.: Tear of the lateral ligament of the ankle. *New York J. Med.* 48:199-201, 1948.
13. Inman, V.T.: *The Joints of the Ankle*. Baltimore: Williams & Wilkins Co., 1976. pp 24
14. Juvenal, J.P.: The effects of ankle taping on vertical jumping ability. *Athletic Training* 7:146-149, 1972.
15. Libera, D.: Ankle taping, wrapping and injury prevention. *Athletic Training* 7:73-75, 1972.
16. Mack, R.P.: Ankle injuries in athletics. *Athletic Training* 10:94-95, 1975.
17. Mayhew, J.L.: Effects of ankle taping on motor performance. *Athletic Training* 7:10-11, 1972
18. Mayhew, J.L., Riner, W.F.: Effects of ankle wrapping on motor performance. *Athletic Training* 9:128-130, 1974.
19. Mosley, H.F.: Traumatic disorders of the ankle and foot. *Clin. Symposia* 17:30-41, 1965.
20. Mullins, J.F.P., Sallis, J.G.: Recurrent sprain of the ankle joint with diastasis. *J. Bone J.T. Surg.* 40B:270-273, 1958.
21. Murray, C.R.: Discussion on Carothers R.G.: Sprained ankles, *Ann. Surg.* 115:654-657, 1942.
22. O'Donoghue, D.H.: *Treatment of Injuries to Athletes*. Philadelphia: W.B. Saunders Co. pp 615-624.
23. Outland, T.: Sprains and separations of the inferior tibiofibular joint without important fracture. *Am. J. Surg.* 59:320-329, 1943.
24. Quigley, T.B.: Fractures and ligament injuries of the ankle. *Am. J. Surg.* 98:477-483, 1959.
25. Zang, K.: *Traumatic Ankle Conditions*. Mt. Kisco, N.Y.: Futura Publishing, 1976 pp 40-51.

ANNOUNCEMENTS

Henry Schmidt Honored

District 8, Northern California section, is proud to acknowledge that retired trainers are not forgotten.

At the recent 54th Annual East-West Football Game and Pageant, Henry Schmidt, University of Santa Clara, retired, was honored at halftime with the Orin "Babe" Hollingberry award. This award was first presented to former President of the United States Gerald R. Ford, in 1974.

Henry is the first non-player recipient for his thirty years of dedicated service as head trainer for the East squad.



Henry Schmidt, Athletic Trainer at the University of Santa Clara in 1930.

Correction

In the Winter 1978 issue of *Athletic Training*, under "Index-Volume Thirteen," two separate articles were erroneously listed together. They should have read: *WALKER, B.* and *MUENCHEN, J.* Policies and Procedures Are Necessary in the Training Room, 211 (Winter); *SLOCUM, P.* Procedure Manual: A Management Concept, 212 (Winter). Please note this change.

Statement of Information

As a result of a meeting at the NATA National Convention in June of 1978, between members of the NATA

and the APTA, both organizations created a "joint task force" to discuss the model legislation which the NATA proposed to introduce at the State level concerning the licensure of trainers.

This joint task force met in Pittsburgh in August of 1978. At this meeting a line-by-line reading and discussion of the proposed legislation was had. The APTA members of the task force gave the NATA members a number of suggestions primarily in the area of the definition of the term athletic trainer and his scope of operation. In addition, suggestions were made as to prohibitive language in the proposed law which prevented a PT from practicing as an athletic trainer. Each group presented its points of discussion with the idea of meeting later and reviewing the progress of the model legislation.

In February of 1979, the joint task force met in San Francisco. At this time each group showed considerable cooperation and willingness to compromise. The NATA had made several changes in its model legislation to conform with the suggestions of the APTA. At this meeting additional suggestions were made in the refinement of the statute to conform to the wishes of the APTA.

The NATA members advised the APTA members of their wishes to have this model legislation "on the streets" in June. To that end, the members of the APTA task force agreed to present the wishes of the NATA task force to its Board of Directors at their June meeting.

1978 Proceedings Still Available

The Proceedings of the 1978 Professional Preparation Conference, which was held at the Opryland Hotel, Nashville, Tennessee, on January 6-8, 1978, is available for \$10.00. Continuing Education Units (0.5CEU) are available for purchasing this manual. Checks should be made to "N.A.T.A. Professional Education Committee" and sent to:

Sayers "Bud" Miller
131 White Building
Pennsylvania State University
University Park, PA 16802
(814) 865-9593

Certification Information

The schedule of upcoming N.A.T.A. Certification Examination sites and dates for 1979-80 is as follows:

January 20, 1980, - Regional

New York area (E.A.T.A.)	Palo Alto, CA
Valparaiso, IN	Eugene, OR
Fort Worth, TX	Tampa (tentative)
Nashville, TN	(all sites subject to change)
Deadline for requesting application - Oct. 15, 1979	
Deadline for returning application - Dec. 1, 1980	

March 16, 1980 - Regional

District 5 Meeting (site and time to be announced)	
Tucson, AZ	West Chester, PA
Raleigh, NC	Ann Arbor, MI
Pullman, WA	
Odessa, TX	
Deadline for requesting applications - Dec. 15, 1979	
Deadline for returning applications - Feb. 1, 1980	

Contact:

Rod Moore ATC
Athletic Dept.
Valparaiso University
Valparaiso, Indiana 46383

Continued on next page

Continuing Education

Continuing Education for the National Athletic Trainers Association is under way. While it is slow getting started there is one important item the membership can help us with.

As of this year we all have a six (6) digit membership number as well as our certification numbers. It is the six digit number that goes to the computer so please put this number on all reporting forms you send in for CEU. Without this information, the recording process is slowed considerably.

Many of you have raised questions concerning CEU, many of them valid. Keep two things in mind: (1) re-read the initial information and some of your questions will be answered and (2) this is our initial endeavor and we are aware that at the conclusion of the initial three-year period review and revision will be necessary.

At this point we are doing our best to keep all members in all levels of employment in mind and will keep your best interest in mind where professionalism is concerned.

Thank you,
Jack Redgren
NATA Sub-Committee
Continuing Education

GUIDE TO CONTRIBUTORS

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

1. One original and five copies of the manuscript should be forwarded to the editor and each page typewritten on one side of 8½ x 11 inch plain paper, double spaced with one inch margins.
2. The first page of the manuscript should include title of paper, full name of author(s), academic degrees, name of the department and institution of author(s).
The second page should contain a brief biographical sketch of each author, suitable for publication with the article. A recent photograph of each author is also requested, but not mandatory.
The text of the article should begin on page three and is to be followed by the bibliography, tables, and illustrations and legends to illustrations in that order.
3. Photographs should be glossy black and white prints unless color is absolutely necessary to indicate detail. Graphs, charts, and figures should be of good quality and clearly presented on white paper with black ink, in a form which will be legible if reduced for publication. Legends to illustrations should be typed separate from the illustrations on a page following the last illustration. Copies of all illustrations should accompany each of the five copies of the manuscript.
4. It is the understanding of the editor of *Athletic Training* that manuscripts submitted will not have been either previously published or simultaneously submitted to another journal. The author accepts

A Timely Reminder...

Your contributions and continuing support to the NATA Scholarship Fund are always welcome and are necessary so that the endowment goal of \$500,000 can become a reality. Please remember that our program of financial assistance is a four-fold one that offers scholarships, loans, grants and part-time employment. Organizational support from the NATA to the Fund continues, but your individual contributions are vital to the Scholarship Fund's ultimate success. All contributions are tax deductible. Won't you consider now the importance of your participation in the NATA Scholarship Fund? Make your checks payable to Scholarship Program, and mail them to this address: **William E. Newell, Purdue University Student Hospital, West Lafayette, Indiana 47907.**

Brochure Requests

All requests for the brochure entitled "Careers in Athletic Training" should go to **Charles O. Demers, A.T., C. Chairman, NATA Career Information Services, Athletic Department, Deerfield Academy, Deerfield, MA 01342.**

responsibility for any major corrections of the manuscript as suggested by the editor.

5. For reprints, authors are authorized to reproduce their material for their own use or reprints can be reproduced at time of initial printing if the desired number of reprints is known.
6. References should be typewritten (double spaced) beginning on the first page following the manuscript. They must be alphabetized and numbered consecutively. Citations in the text of the manuscript should take the form of a number in parenthesis (7) directly after the name of the author being cited, or after the reference if the author's name is not used. The style of the references is that of Index Medicus. Examples of references to a journal, book, chapter in an edited book, and presentation at a meeting are illustrated below:
 1. Knight K: Preparation of manuscripts for publication. *Athletic Training* 11(3):127-129, 1976.
 2. Klafs CE, Arnheim DD: *Modern Principles of Athletic Training*. 4th edition. St. Louis, CV Mosby Co. 1977 p. 61.
 3. Albohm M: Common injuries in womens volleyball. *Relevant Topics in Athletic Training*. Edited by Scriber K, Burke EJ, Ithaca NY: Monument Publications, 1978, pp. 79-81.
 4. Behnke R: Licensure for athletic trainers: problems and solutions. Presented at the 29th Annual Meeting and Clinical Symposium of the National Athletic Trainers Association. Las Vega, Nev, June 15, 1978.
7. Potential authors are referred to reference 1 above, for help in preparing their manuscripts.
8. Unused manuscripts will be returned, when accompanied by a stamped, self-addressed envelope.
9. Manuscripts not following the preceeding procedures will be returned to the author.

Address all manuscripts to:

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

Treatment of Pain in Athletes By the Use of Transcutaneous Nerve Stimulation

JOE GIECK, Ed.D., ATC, RPT
Head Athletic Trainer
University of Virginia

RICHARD FRISCIA
JIM BARTLEY
University of Virginia
Master's Students,
Athletic Training

Pain

Throughout history the word "pain" has attained a plethora of meanings. For example, two thousand years ago Aristotle described pain as "passion of the soul". Philosophers of the Middle Ages thought of it in the theological terms, either as a test of spiritual strength or as punishment of sin. "The Son of God suffered unto the death, not that men might not suffer, but that their suffering might be like His". (1) Neurology professors of a generation ago taught their students that there were four kinds of pain: pricking, aching, clear pain, quick pain. By the 1970's their successors could name more than 100 different types of pain.

Interest in an in-depth examination of pain has reached such new heights that a new word has been coined to describe the study of pain: dolorology.

Pain, however, is an obviously needed function of the body. It warns us of injury and disease. Without pain, the body would not know of any harm being done to itself. Biologically, pain is a protective mechanism; physiologically, it is a sensory signal which can be monitored to some extent; and psychologically, pain is an unpleasant sensation.

When one speaks of physical sensations, pain is perhaps one of the most complex, ranging from the slight twinge of an earache to the acute pulsating sensation of *tic douloureux*, a nerve disease of the face affecting older people. "Despite our amazing technology," says Dr. S. Freese, "we have yet to attain the stage of knowledge and understanding of pain that the Wright Brothers had of powered flight when they first flew. We find new ways to relieve pain, but we still don't understand how we hurt or why". (2)

In the field of sport, pain is a sensation with which many athletes are familiar. Very few athletes traverse an entire season without being subjected to some type of injury. An athlete competing in interscholastic, intercollegiate, or professional sport (5) must at many times play with pain. "The pain threshold", says Dr. Robert Kerland, "is high among superstars or high-level athletes. I don't know if these athletes can accept more, but they definitely don't feel pain as much. Whether this is acceptance, or the way they're put together, we don't know. I think it has a lot to do with the way an athlete is put together. You have to have a high pain threshold to play football, hockey, and definitely for boxing". (3)

One can easily initiate an argument over whether an athlete should or should not play with an existing injury which could be compounded, possibly causing detrimental damage. But the present monetary conditions of professional and, in some big-time collegiate teams — not to mention our own societal attitudes toward victory — dictate that a player be available for competition.

There are times, though, when pain is neither necessary nor useful. Such times are when pain disrupts thinking and consciousness, and when pain is long-termed. (4) There are also times when pain limits exercise and joint mobility thereby inhibiting rehabilitation. (5) Furthermore, there are times when pain is present, but the condition causing it is not severe enough to demand limitations of activities. (6)

Acute Versus Chronic Pain

There are two major types of pain — Acute and Chronic. Both types of pain are treated differently. Unfortunately, there are too many doctors who try to treat chronic pain as acute pain and get their patient into trouble. (7) The following are the differences between acute and chronic pain. (4)

ACUTE

1. Pain is a symptom
2. Pain is useful
3. Anxiety, high heart rate, and blood pressure are increased
4. Narcotics generally useful
5. Little addiction
6. Pathology generally recognized
7. Cure and relief is likely

CHRONIC

1. Pain is a disease
2. Pain is biologically not useful
3. Depression
4. Narcotics are contraindicated
5. Addictive
6. Pathology is a complex interaction of the physical and the psychological
7. Cure and relief is not likely

From the preceding, it is obvious that there are major differences between acute and chronic pain. Therefore, their management must not be one and the same. When dealing with a patient in pain, the type of pain must be identified. At that point, the method of treatment and the therapeutic plan may be considered and administered properly.

As noted, treatment of chronic pain as acute pain may be detrimental to the patient, but the reverse is also true. Improper handling and treatment of an acute injury may develop into a chronic pain. (8)

Chronic pain is generally more involved than acute pain, and is less well-known and understood. Nonetheless what is understood is that it is necessary to have proper management of the acute injury to prevent it from becoming a chronic injury accompanied by chronic pain. There are many modalities, both old and new, that a trainer can choose between.

Pain Control

With the care, treatment, and rehabilitation of athletic injuries, the athletic trainer attempts to relieve pain. Drugs, of course, play an important role in the treatment of pain. Morphine, derived from the opium poppy, was discovered in 1806 and named after Morpheus, the Greek god of dreams. Almost two centuries later, despite all its drawbacks, it still remains one of our most effective analgesics.

There are many benefits to be gained from the use of drugs, but continual use of even the mildest drugs can cause detrimental side effects. With more potent drugs, addiction is always a possibility.

Cryotherapy, the use of cold, has for many years been a method of trainers for treating pain. Its easy accessibility and minimal cost make it very worthwhile. Also, its potentially harmful effects on the body are very slight.

Thermotherapy, use of heat, is also an inexpensive and safe way of treating pain. Heat increases the exchange of oxygen and blood in areas where an injury has taken place. The trainer is, of course, cognizant of the fact that heat during the acute stages of injury is contraindicated.

Ultrasound and diathermy can also be used by the trainer to treat pain, more specifically, muscle pain.

Factors Influencing Pain Behavior

It has long been recognized that the interpretation, sen-

sation, and the amount of dysfunction due to pain varies from one individual to another. A similar stimulus given to two different people may elicit two totally different reactions, and they may interpret the pain differently. There are also times when a similar stimulus, given to the same person at two separate times, may result in different reactions and interpretations. Such is the example of the athlete who may be injured in competition, but may not feel the pain until afterwards. But given the same injury in another situation, the immediate response may be much different.

These are five influencing factors to be considered in pain behavior(4):

1. *The State of Involvement of the Injury and the Probabilities of the Outcome.* The degree of actual injury and the extent of damage which may result is a determining factor of the pain behavior.
2. *Ethnic and Cultural Influence.* It is known that certain societies experience more pain than others.
3. *Past Experience.* Knowing what the pain is like from previous experience will influence response.
4. *Secondary Gain.* For some people there may be secondary gain to their behavior of pain. Such examples are of money and sympathy from other people.
5. *Psychological Makeup.* There are times when a person may psychologically feel more pain than others, or the same person may feel more pain from time to time.

These five factors, clearly showing that there is a wide variety in perception of pain, have led researchers to suspect that there are mechanisms in the body as well as the mind that alleviate pain or, conversely, make pain worse — and that operate totally without regard to the specific source of pain.(7)

In an attempt to understand the mechanism of pain

NEW

AIR FLITE CUSHIONED HEEL CUPS

WEIGH LESS THAN 5 GRAMS

**MOLDED OF HIGH DENSITY
CROSS-LINKED POLYETHYLENE—
SHOCK ABSORBING—MICROPOROUS
BREATHABILITY—WASHABLE—
USEFUL IN THE TREATMENT AND
PREVENTION OF FOOT INJURIES.**



ECONOLINE PRODUCTS, INC.

POST OFFICE BOX 26774

TELEPHONE 704-596-6842

CHARLOTTE, N.C. 28213



**\$10.00 per Dozen
Delivered**

three theories have been suggested. The *Specificity Theory* that there is a fixed, direct-line communication system from the skin to the brain.(21) The *Pattern Theory* suggests that the nerve impulse pattern for pain is produced by intense stimulation of non-specific receptors.(21) The *Gate Control Theory* proposes a mechanism at the spinal level which affects the perception of pain by the comparative activity of large-diameter A-fibers and specific pain C-fibers in cutaneous afferent nerves.(9) All of these theories are questioned, in part, by some clinical observations.(21)

The Specificity Theory

This theory holds that the sensation of pain is the result of specific peripheral nerve excitation. The pain impulse is then transmitted in a manner similar to touch, cold, and warmth. Free nerve endings have been considered the most probable pain "end organ". Once stimulated, the free nerve endings transmit the impulses by the A-delta and C-fibers in peripheral nerves, and the lateral spinothalamic tract in the spinal cord to the thalamus at the base on findings that different sensations from an area such as the cornea of the eye can be appreciated, while end organs usually identified with cold and heat are not visible microscopically. Also, calling a nerve receptor a "pain receptor" implies that stimulation of one type of receptor elicits a single physiological or psychological response. This has not been borne out clinically or physiologically since, for example, the theory does not explain why pain persists after nerve tracts have been destroyed.(21)

The Pattern Theory

This theory suggests that the intensity of the stimulus evokes a specific "pattern" and is subsequently interpreted by the brain as pain. The theory proposes the existence of a rapidly conducting fiber system which inhibits synaptic transmission in a more slowly conducting fiber system that carries the signal for pain. Under pathological conditions the slow conducting system established dominance over the fast with slow, diffuse burning pain as the result. This could explain how extremes of heat and cold evoke painful responses. The end result is not the stimulation of a specific end organ, but the result of intensity and frequency of stimulation of a non-specific end organ. The theory has been challenged partly because it is too general and does not explain the

physiological evidence that a high degree of receptor-fiber specialization occurs.(21)

The Gate Theory of Pain

According to Roth(9) the Gate Theory of pain was developed by Ronald Melzack and Patrick Wall in 1965. They proposed that there are two types of pain: 1) Touch, or prick, pain which is transmitted by large, fast A-fibers, and 2) *Burning pain* which is transmitted by small, slow C-fibers.

The touch pain is short and non-lasting while the burning is long lasting. The following is a schematic diagram of the Gate Theory (Figure 1).(4)

In this diagram the T-cell is the Transmission cell which will elicit pain to the brain and the substantia gelatinosa is the "gate". If the large fibers are stimulated (by a light stimulus) it is believed that pain will be felt at first because of the one synapse to the T-cell, but at the same time the substantia gelatinosa is stimulated which will "close" the gate and inhibit transmission. Therefore the pain will start and stop quickly.

If the small fibers are stimulated there is no inhibition of the substantia gelatinosa, which means the gate is "open", and there is a direct stimulation of the T-cell. This is what happens when a strong stimulus is applied.

The gate can also be controlled by the higher centers of the central nervous system, mainly due to the factors that influence pain behavior. Although this is still not clearly understood, it is believed that the mind will somehow control the gate from its end.

If the gate is open due to a strong stimulus, it is believed that the gate can still have a chance to be closed down again. In other words, it is believed that if both the large, fast fibers, and the slow, small fibers are simultaneously stimulated, the quicker traveling impulse of the large nerve cells will close down the gate thereby stopping the transmission of pain. This theory of the gate has led to the use of Transcutaneous Nerve Stimulation (TNS) devices.

Electrical Stimulation

The use of electrical stimulation to relieve pain is not new. In fact

electrical stimulation as a force or name was not described until 1600. Nonetheless the ancients recognized that the electric eel or torpedo gave

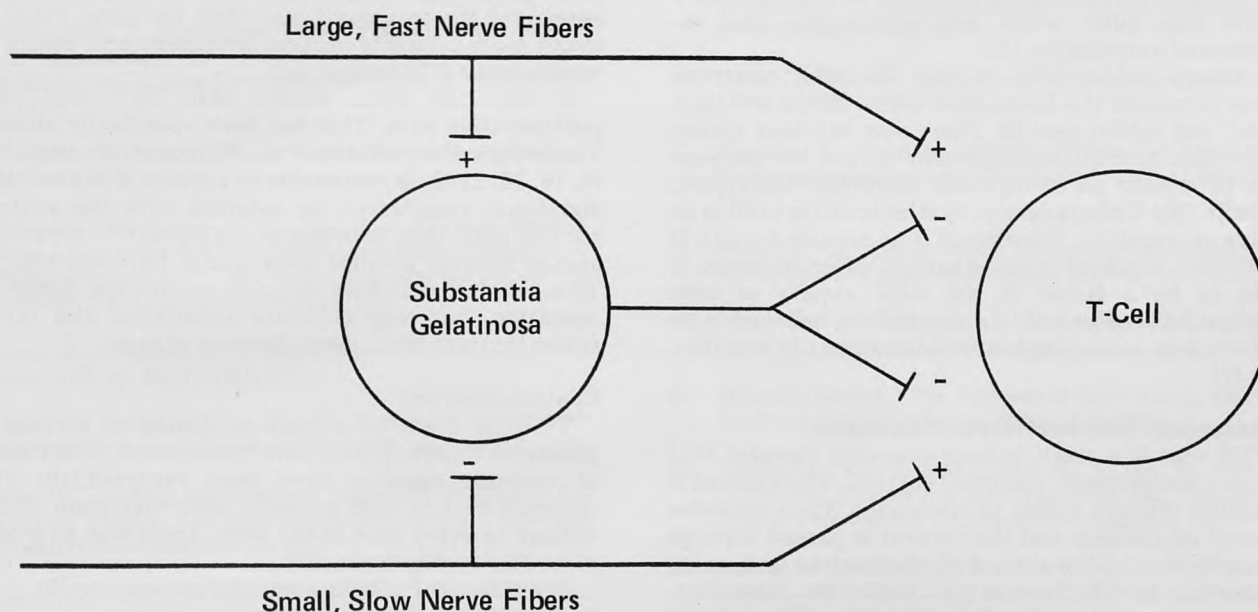


Figure 1

forth an energy which relieved pain. Electrical stimulation was also known in time of Galen but subsequently forgotten or discarded.(2)

So the use of electrical stimulation is not a recent breakthrough — merely a revival. The Gate Theory, though being challenged, has led to the revival of electrical stimulation and TNS.(2)

Researchers led by Dr. Candance Pert and Dr. Solomon Snyder of the National Institute of Mental Health, found that some animal brain cells had distinctive areas to which opiate drugs, such as morphine, would fit perfectly, just as a key would fit into a lock. These opiate receptors were later found to also exist in human brains. The initial question the research team asked was "why should the brains of humans and animals have evolved with 'locks', whose only keys were drugs that many would later invent?"(11)

In 1975, Dr. John Hughes and Dr. Hans W. Kosterlitz of the University of Aberdeen in Scotland discovered that the human body produced its own chemicals to fit these opiate receptors. These chemicals were named enkephalin, a Greek word meaning head. They are believed to be produced and to act specifically in the brain. Their chemical composition consists of five amino acids.

At a later date, another similar substance was also discovered. These substances have been named endorphines, meaning "the morphine within".

Researchers are now asking a variety of questions. For example, "perhaps the stoic who withstands torture is simply a person endowed genetically with unusually copious production of natural pain killers. Perhaps the person susceptible to drug addiction is one born with a natural deficit of the chemicals."(11) Doctors also believe there exists a link between mood, emotions, and behavior and the presence or lack of endorphines or enkephalins.

With the discovery of these chemicals, physicians are surmising that if the body produces its own pain killers then of course they should not be addicting or cause harmful side effects the way our present manmade opiate pain killers do. But drug manufacturers have been attempting to synthetically emulate these chemicals and so far have only produced a substance which presently is even more addicting than morphine. But, physicians and drug manufacturers are getting close. According to Dr. Harold Carron, head of the University of Virginia Pain Clinic, within five years, researchers should be able to produce a synthetic pain killer which will parody our own endorphines and enkephalins.(12)

The theory behind TNS is that its mild, electrical currents stimulate the large, fast nerve fibers to "close the gate" and inhibit pain.(2) There also has been recent evidence that neurostimulators may induce the nervous system to release an endogenous morphine equivalent, enkephalin.(10) Unfortunately, synthetic enkephalin is as addictive as morphine, therefore it is no miracle drug.(4,7) Nevertheless, the level of enkephalin in different people is thought to be a factor in the wide variety of pain discrimination.(4) The lack of enkephalin is believed to be the reason why some people are extraordinarily sensitive to pain.(7)

Transcutaneous Electrical Nerve Stimulation

A TNS unit is a small battery-operated compact that produces a low intensity electrical current. This current is transmitted through cables to electrodes. The electrodes are placed on the skin and the current is passed through the pads by way of the skin. A slight tingling or buzzing sensation may be felt. Several models now have two channels which means there are four cables leaving the unit. Each channel may be controlled separately. Most of the modules have control for intensity, duration, and width of the current. The electrodes are usually held in place by

straps or adhesives. A conductive gel is used between electrode and skin. More recently, there has been the production of gel-less electrodes that adhere to the body by themselves. The cost of a unit is usually \$300 or more.

TNS Research

In all research reviewed by the authors, TNS has been judged to be of significant value in the relief of pain. Shealy reported on the use of TNS in 750 patients treated.(5) Patients with acute pain (including surgical wounds, fractures, sprains, etc.) achieved eighty per cent excellent control and still another sixty per cent of patients with chronic pain had partial but adequate relief. Loeser et. al. reported sixty-eight per cent of their patients with significant relief, and only thirty-two per cent with no significant relief.(13) Cooperman et. al. and VanderArk et. al. similarly showed seventy-seven per cent of their patients to have significant relief.(14,15) Long showed twenty-five to thirty per cent relief as a long-term therapy.(16) Melzack has shown seventy-five per cent relief from phantom limb pain, and sixty per cent relief from low back pain.(17) Banerjee reported that in five spinal injury patients, all five reported significant relief of pain through TNS.(18) Steig reported that with acute and chronic pain patients, combined results were fair to excellent relief eighty-three per cent.

Duration of Relief

Though there is no explanation as yet, there have been reports of pain relief after stimulation from TNS. Burton reports that often there is a period of sustained relief (minutes to hours) following stimulus.(10) Johnson also reported that relief can continue afterwards.(2) Melzack showed that duration of relief infrequently outlasted the period of stimulation by several hours and occasionally for days or weeks.(20) Loeser et. al. reported that thirteen per cent received long-term relief from stimulation.(13) From this it can be seen that the duration of relief may far surpass the duration of stimulation. Empirical experience by the present authors indicates better results with suggestive athletes. For this reason, prior to treatment it is necessary to explain to the athlete that TNS has electrical energy that has been effective in many types of pain; that several treatments may be necessary to determine the position of electrode placement that will result in maximum pain relief. Explained also is that the athlete's active participation and cooperation are important for the success of the treatment, and that, for some, relief may result from a twenty minute treatment and others may need to wear it 24 hours a day.

It has also been shown that TNS will relieve postoperative pain. This has been specifically shown by VanderArk, Cooperman, et. al., Hymes et. al., and Shealy. (5, 14, 15, 21) It is reasonable to assume, however, that if significant results can be obtained with the acute and chronic pain, then pain due to postoperative surgery will also be relieved because it does fall in the acute type pain. This relief of pain may not only reduce the agony after operation, but may facilitate ambulation and rehabilitation that was limited only because of pain.

Contraindications

To date, there have been no deaths or serious complications reported. Only skin reactions of 1.6% incidence of cosmetic reaction have been reported.(10) Shealy reported that in 2000 patients, with maximum tolerable voltage to every part of the body, there was no evidence of cardiac dysrhythmia.(20)

According to Roth the contraindications are:(9)

1. *Pacemaker*. Allowed as long as current does not pass through the heart.
2. *Pregnant Women*. There is not enough research to date.

3. *Cancer*. May stimulate more growth of the cancer cells. May use only if patient has a short time to live.
4. *Do not use if pain interferes with pathology*.
5. *Acute Rheumatoid Arthritis Attack*. The patient will need feedback.
6. *Do not use stimulus if it is more uncomfortable than the pain itself*.
7. Another contraindication is of placement of electrode over carotid sinuses in order to avoid vagovagal reflexes.

The Use of TNS in Athletics

To date in a preliminary report on the use of TNS in sports medicine, it has been suggested that there are occasions when pain is present, but the condition causing it is not severe enough to demand limitation of activities.⁽²²⁾ This is very important to the college, professional, or world-class athlete who must participate when only pain and not injury is hindering his performance.

One author experimented with TNS using 31 athletes for whom a carefully documented method of use and response were recorded.⁽⁶⁾ Seventy-two other athletes were used but with incomplete documentation, for a total of one hundred and three patients. No athlete with serious injury or potential disabling conditions was included in this study. The report showed that all of the patients demonstrated a positive response to the treatment. This varied from mild pain relief during treatment to dramatic cures.

The following is a list of the conditions that were reported being used by TNS in the above sports medicine program⁽⁶⁾ although they believe there could be more: 1) hip pointer; 2) elbow epicondylitis - medial or lateral; 3) mild knee ligament sprains - medial or lateral; 4) acromioclavicular sprains; 5) shoulder contusions (poin-

ters) and trapezius insertion strains; 7) low back strains and contusions; 8) "jumper's knee" - tendonitis of quadriceps tendon or patellar ligament; 9) cervical muscle strain; 10) tendonitis about the leg and foot; 11) acute bicipital tendonitis; 12) rib contusions, mild costochondral separations; 13) mild shoulder rotator cuff sprains. The authors have found TNS useful to relieve acute pain during rehabilitation exercises.

Conclusion

TNS has a place in sports medicine as a therapeutic modality. It may facilitate the treatment of an injury, thus enhancing rehabilitation in order to return an athlete to practice. As the research has shown TNS to be useful in the relief of pain for non-athletes, then it is reasonable to assume that it can be of value in sports medicine.

Despite the rather primitive and empirical nature of TNS devices, they are worthy of serious consideration by the practicing physician and athletic trainer today, and are likely to be of even greater clinical value in the near future.⁽¹⁰⁾ Research has clearly shown TNS to be worthy of this consideration. Benson et. al. have reported that even the placebo effect on TNS is considered to be a real phenomenon and unquestionably of some clinical value.⁽²³⁾ Shealy believes that TNS should be in every emergency room and in the near future it will become a common picture in the operating room.⁽⁵⁾ He also states that they are safer than aspirin and should generally be used before any drugs are tried.⁽⁵⁾

The Gate Theory of pain has led to TNS, although the Gate Theory is presently being challenged. Nonetheless, even though TNS is only theoretically explainable, it does work. More experimentation is needed, especially in the field of sports medicine, in order to further our knowledge. The more we can learn about the facts of pain, the more we can attempt to treat pain patients.

Bibliography

1. Lewis, C.S., *The Problem of Pain*. New York, McMillan Co., 1944.
2. Johnson, I., "TNS", *Journal of Neurosurgical Nursing*, pp. 87-90, Dec. 1975.
3. Krom, Mark, "The Face of Pain". *Sport's Illustrated*. March 8, 1976.
4. Bennet, Gary J., Rowingson, John, "Pain Present Theories and Approaches to Treatment", Physical Therapy Association of Virginia Continuing Education Activities, Oct. 22, 1977.
5. Shealy, C. "TNS for Control of Pain", *Clinical Neurosurgery*, 21: 269-77, 1974.
6. Waldomar, M., Roeser et. al., "The Use of Transcutaneous Nerve Stimulation for Pain Control in Athletic Medicine. A Preliminary Report". *The American Journal of Sports Medicine*, Vol. 4, Oct. 1977, No. 5, pg. 210.
7. Clark, M., Shapiro, D., Bosnall, M., "The War on Pain", *Newsweek*, pp. 48-57, April 1977.
8. Klafs, C., Arnheim, D., *Modern Principles of Athletic Training*, St. Louis, C. V. Mosby Co., 1973, pp. 190-205.
9. Roth, M., "TENS: Rational and Workshop on Clinical Application" Virginia Physical Therapy Association, Continuing Education Activities, Oct. 23, 1977.
10. Burton, C., "TENS to Relieve Pain: *Postgraduate Medicine*, 59: 105-8, June 1976.
11. Schemck, Harold, "Opiate-Like Substance in Brain May Hold Clue to Pain and Mood". *New York Times*. Oct. 2, 1977.
12. Carron, Harold, Personal Interview.
13. Loeser, J., Black, R., Chritman, A., "Relief of Pain by TNS", *Journal of Neurosurgery*, 42:308-14, March, 1975.
14. Cooperman, A., Hall, B., Sader, E., Hardy, R., Jr., "The Use of TNS in Control of Post Operative Pain", *Surgical Forum*, 26:77-8, 1975.
15. Vanderark, Gary, "Transcutaneous Electrical Stimulation in Treatment of Post Operative Pain". *The American Journal of Surgery*. September 1975.
16. Long, D., "Recent Advances in the Management of Pain", *Minnesota Medical*, 57: 705-9, 1974.
17. Melzack, R., "Prolonged Relief of Pain by Brief, Intense Transcutaneous Somatic Stimulation", *Pain*, 1:357-73, Dec. 1975.
18. Banerjee, T., "Letter: TNS for Pain After Spinal Injury", *New England Journal of Medicine*, 291:796, Oct. 10, 1977.
19. Stieg, R., Presentation at the Annual Meeting of the American Academy of Neurology, Toronto, April, 1976.
20. Melzack, Ronald, "The Problem of Biofeedback, Don't Hold the Party Yet", *Psychology Today*, July 1975.
21. Hymes, A., Yonchiro, O., Raab, O., Nelson, G., Printy, A., "Electrical Stimulation for Treatment and Prevention of Ileus and Atelectasis", *Surgical Forum*, 25:222, 1974.
22. Roeser, W., Meeks, L., Venis, R., Strickland, G., "The Use of TNS for Pain Control in Athletic Medicine. A Preliminary Report", *AJSM*, 4:210-13, Oct. 1976, No. 5.
23. Benson, H., Epstein, M., "The Placebo Effect: A Neglected Asset in the Care of Patients", *JAMA*, 232: 1225-1227, 1975.

BY-LAWS OF THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

ARTICLE I PRESIDENT OF THE NATIONAL ATHLETIC TRAINERS' ASSOCIATION

Section 1

Selection: Elected by majority popular vote of Certified NATA membership. Board of Directors serves as the nominating committee. The Board will nominate two candidates with biographies of the two candidates published in *Athletic Training-The Journal of the National Athletic Trainers' Association* in the first issue after the winter meeting of the Board of Directors prior to the popular vote. Candidates must have served as a member of the Board of Directors at some time during the four years immediately preceding beginning date of term of office.

Section 2

Term of Office: Two years. May not serve more than two consecutive terms.

Section 3

Functions and Responsibilities:

1. Serves as the official spokesman for the Board of Directors and the Association concerning public relations and speaking engagements for the membership.
2. Maintains communications with the Executive Director in all matters pertaining to the coordination, management and supervision of the Association's affairs.
3. Calls all meetings of the Board of Directors as deemed necessary and advisable.
4. Presides over all meetings of the Board of Directors.
5. Presides over all National Business meetings.
6. Represents a tie-breaking vote on the Board of Directors and votes only in the event of impasse.
7. Keeps the Board of Directors informed about Association affairs between Board meetings.
8. This is a non-paying position; however, all traveling expenses are paid by the NATA.
9. Serves as ex-officio member of all Association committees.
10. Appoints with agreement of Executive Director and with the approval of the Board of Directors, all committee chairmen.
11. Appoints with agreement of Executive Director and with the approval of the Board of Directors, representatives of NATA to allied organizations.

ARTICLE II VICE PRESIDENT

Section 1

Selection: The district director from one of the ten districts shall be elected to the office of vice president by the board of directors, election shall be by majority vote.

Section 2

Term of Office: One year and may be re-elected.

Section 3

Functions and Responsibilities: The vice president has no duties except to assume the office of president as prescribed in the Constitution of the National Athletic Trainers' Association.

ARTICLE III BOARD OF DIRECTORS

Section 1

Selection: Elected representatives of the ten (10) NATA Districts plus a president elected by popular vote of the Certified membership. Each representative must be a Certified member of the Association.

Section 2

District Geographic Areas:

- District 1-
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, Quebec, New Brunswick, Nova Scotia
- District 2-
Delaware, New Jersey, New York, Pennsylvania
- District 3-
Maryland, North Carolina, South Carolina, Virginia, West Virginia, District of Columbia
- District 4-
Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin, Manitoba, Ontario
- District 5-
Iowa, Kansas, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, University of Colorado

District 6-

Arkansas, Texas

District 7-

Arizona, Colorado, New Mexico, Utah, Wyoming

District 8-

California, Nevada, Hawaii

District 9-

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

District 10-

Alaska, Idaho, Montana, Oregon, Washington, Alberta, British Columbia, Saskatchewan

Section 3

Terms of Office: Three (3) years for elected representatives to the board.

Districts 1, 4, 7

1971 and every third year thereafter

Districts 2, 5, 8

1972 and every third year thereafter

Districts 3, 6, 9, 10

1973 and every third year thereafter

Section 4

Functions and Responsibilities:

1. Meets at the National Convention and at any other time during the year the president determines it necessary to call a board meeting.
2. Serves as the official legislative body of the Association.
3. Approves appointment of all committee chairmen and standing committee members.
4. Approves the appointment of all special committees deemed necessary for the conduct of special Association projects of study.
5. Appoints all executive officers of the Association.
6. Serves as the nominating committee for the position of President, of the Board of Directors. Will nominate two candidates with biographies of the candidates published in *Athletic Training-Journal of the National Athletic Trainers Association* prior to the popular vote.
7. Continually evaluates and defines the roles and functions of all Association officers, standing committees and special committees.
8. Receives recommendations, suggestions and requests from Association districts and makes recommendations to the President for their inclusion in the agenda of Board of Directors' meetings.
9. Continually re-evaluates the goals and objectives of the Association and accepts primary responsibility for progress toward these goals.
10. Meets in a private session at the annual NATA convention for the purpose of reviewing personal performances and appointing persons to all positions open or deemed necessary. A majority vote of the board is necessary to terminate the office of an appointed person; this will be done by secret vote and counted by the president and one other board member.
11. Receives and acts on recommendations of the Ethics Committee in regard to matters of unethical conduct. Notifies the accused person of charges pending and advises him of his right to appear before the board prior to board action on the charges. The decision of the Board of Directors in Code of Ethics matters is final, except that if the decision is to initiate cancellation of membership such cancellation shall be done as prescribed in ARTICLE VI., Sections 1 and 2 of the Constitution.
12. Approves recommendations of Board of Certification for certificate of candidates.
13. Acts as an auditing committee for NATA financial affairs and approves financial statement of Executive Director.

ARTICLE IV EXECUTIVE DIRECTOR

Section 1

Selection: Appointed by the Board of Directors.

Section 2

Term of Office: Subject to yearly review by the Board of Directors.

Section 3

Salary: To be determined by the Board of Directors.

Section 4

Functions and Responsibilities:

1. Implements the mandates and policies of the Association, as determined by the Board of Directors.

2. Between meetings of the Board of Directors, enforces policy on behalf of the Association as is consistent with the mandates and legislation enacted by the Board of Directors.
3. Possesses full power and complete responsibility to transact all business for and on behalf of the Association and to manage all property, affairs, and activities of the Association subject to the provisions of the Constitution and By-Laws and the resolutions and enactments of the Board of Directors.
4. To commit the Association to no financial obligation in excess of its available financial resources.
5. Provides for the maintenance of an Association headquarters which shall serve as the center of all official activities of the Association.
6. Serves as the official spokesman concerning business and governmental affairs for the Association.
7. Serves as the custodian of all records, books and papers belonging to the Association.
8. Secures the minutes of all Board of Directors' meetings from the Administrative Assistant and distributes the minutes to all board members within a reasonable time subsequent to each meeting.
9. Submits a written report of the Association's progress to the Board of Directors of each annual meeting and upon the request of the Board.
10. Conducts the official correspondence of the Association including such matters as notifying members of meetings, officers of their election, committee members of their appointments, and all notices as required by the By-Laws or as requested by the Board of Directors.
11. Handles all financial matters of the Association with the assistance of the Administrative Assistant.
12. Maintains a current and accurate mailing list and an official record of the Association membership.
13. Coordinates the activities of the Association and acts as liaison between the districts and the National office and polls the District Directors at least one month in advance of the annual board meeting for suggestions on board agenda.
14. Maintains liaison with allied organizations in conjunction with NATA representative to such organizations.
15. Maintains communication and records of all committee chairmen, committee members and members of the Board of Directors.
16. Submits an audited financial report to Board of Directors prior to the Annual Meeting.
17. Prepares the annual budget and presents this budget to the board for approval.
18. Serves as ex-officio member of all Association committees.
19. Continually reviews the Association Constitution and By-laws in terms of newly enacted legislation and makes recommendations to the Board of Directors for revisions, deletions or additions.
20. Maintains an accurate and current record of newly enacted legislation and incorporates it into the Constitution and By-Laws and as instructed by the Board of Directors.
21. Supplies the Board of Directors with an accurate record of all Constitution and By-Laws revisions, deletions or additions at their annual meeting.
22. Conducts, at regular three year intervals, a comprehensive review of the Constitution and By-Laws and makes recommendations to the Board of Directors

for reprinting if deemed necessary.

ARTICLE V ASSISTANT EXECUTIVE DIRECTOR(S)

Section 1

Selection: Appointed by the Executive Director from the Certified membership of the Association with the approval of the Board of Directors.

Section 2

Term of Office: Subject to yearly review by the Board of Directors.

Section 3

Salary: To be determined by the Board of Directors.

Section 4

Functions and Responsibilities:

1. To assist the Executive Director in functions and responsibilities as designated by the Executive Director.

ARTICLE VI ADMINISTRATIVE ASSISTANT(S)

Section 1

Selection: Appointed by the Executive Director with approval of the Board of Directors.

Section 2

Term of Office: Subject to yearly review by the Board of Directors.

Section 3

Salary: To be determined by the Board of Directors.

Section 4

Functions and Responsibilities:

1. Assists Executive Director in all functions and responsibilities of the National Office.

*See Functions and Responsibilities of Executive Director.

ARTICLE VII PARLIAMENTARIAN

Section 1

Selection: Appointed by President with agreement of Executive Director and approval of Board of Directors.

Section 2

Term of Office: Subject to yearly review by the Board of Directors.

Section 3

Functions and Responsibilities:

1. Should be a Certified member of the NATA and must have a thorough knowledge of parliamentary procedure. If no such individual is available within the Association the NATA must hire a qualified expert from outside the Association.
2. Is in charge of keeping the Board of Directors and annual business meetings operating under parliamentary procedure as prescribed by the Roberts' Rules of Order.

A Good Save!

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



Allow three weeks for delivery.

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

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

Name

Address

City

State

Zip

ARTICLE VIII ADVISORY COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of Executive Director and approval of Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: One year and may be reappointed with approval of the Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the President and Executive Director.

Section 4

Selection of Committee Members: Appointed by the President with agreement of Executive Director and approval of Board of Directors.

Term of Office: One year and may be reappointed.

Section 5

Term of Office: One year and may be reappointed.

Section 6

Functions and Responsibilities:

To advise the President and Executive Director, at their request, on matters needing specific information in the respective speciality fields of the committee members.

ARTICLE IX AUDIO-VISUAL AIDS COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of Executive Director and approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed with approval of the Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the committee Chairman to form a workable group.

Section 4

Selection of Committee Members: Recommended by the Chairman and appointed by the President with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed.

Section 6

Functions and Responsibilities:

1. Maintains a bibliography and sources of audio-visual aids available to Association members.
2. Cooperates with individuals, manufacturers, companies, etc. as advisor in audio-visual projects.
3. Investigates and recommends to Board of Directors the advisability of sponsorship, co-sponsorship, authorship, etc. of audio-visual aids. The Committee is given authority to approve audio-visual projects for further development, but not to give final approval.
4. Coordinates and supervises all Board approved audio-visual aid projects.
5. Establishment of and maintenance of an audio-visual aid loan library for the membership of the Association.
6. Cooperates with all standing committees in audio-visual aids relative to their findings and needs.
7. Cooperates with President in development of audio-visual aids for his use as the official spokesman for the Board of the membership concerning public relations.

ARTICLE X CAREER INFORMATION AND SERVICES COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of the Executive Director and approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed by the Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the committee Chairman to form a workable group.

Section 4

Selection of Committee Members: Recommended by the Chairman and appointed by the President with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed with approval of the Board of Directors.

Section 6

Functions and Responsibilities:

1. Answers correspondence, inquiries and requests for guidance and counseling concerning the professional preparation of athletic trainers.
2. Investigates the use of films, slides, and filmstrips for recruitment purposes and makes recommendations to the Board of Directors.

ARTICLE XI CERTIFICATION COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of Executive Director and approval of the Board of Directors from the Certified membership of the Association. The Chairman shall also serve as Chairman of the Board of Certification.

Section 2

Term of Office: Two years and may be reappointed with approval of Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the committee Chairman to form a workable group.

Section 4

Selection of Committee Members: Recommended by the Chairman appointed by the President with approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed with approval of Board of Directors.

Section 6

Functions and Responsibilities:

1. Cooperates with the Professional Education Committee in the establishment of certification requirements and procedures for certification.
2. Assists in the construction and revision of appropriate certification examinations.

ARTICLE XII BOARD OF CERTIFICATION

Section 1

Selection of Chairman: Chairman of Board of Certification is the Certification Committee Chairman.

Section 2

Board Members: The members will be the same as Certification Committee plus consultants.

Section 3

Selection of Board Members: Recommended by the Chairman appointed by the President with the approval of the Board of Directors from the Certified membership of the Association. Consultant members of Board of Certification need not be Certified members of the Association. The ratio shall be three Certified members to one consultant.

Section 4

Term of Office: Two years and may be reappointed by the Board of Directors.

Section 5

Functions and Responsibilities:

1. Receives and reviews all applications for certification.
2. Coordinates and supervises the administration and grading of all certification examinations.
3. Ascertains the fulfillment of Certification requirements and makes recommendations to the Board of Directors for final approval.

ARTICLE XIII DRUG EDUCATION COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of the Executive Director and the approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed with approval of Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the committee Chairman to form a workable group.

Section 4

Selection of Committee Members: Recommended by the Chairman appointed by the President with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed with approval of Board of Directors.

Section 6

Functions and Responsibilities:

1. To develop drug education material for use and distribution by the Association.
2. To maintain a bibliography on resource material pertaining to drug education.

ARTICLE XIV ETHICS COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of the Executive Director and the approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed with approval of Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the committee Chairman to form a workable group.

Section 4

Selection of Committee Members: Recommended by the Chairman appointed by the President with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed with approval of Board of Directors.

Section 6

Function and Responsibilities:

1. Accepts and investigates reports of violations of the Association Code of Ethics.
2. Reports to Board of Directors Committee findings and recommendations.

ARTICLE XV GRANTS AND SCHOLARSHIP COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of Executive Director and approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed with approval of the Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the committee Chairman to form a workable group.

Section 4

Selection of Committee Members: Recommended by the Chairman and appointed by

the President with the approval of the Board of Directors.

Section 5

Term of Office: Two years and may be reappointed.

Section 6

Functions and Responsibilities:

1. Promote and encourage scholarship through gifts, loans, and grants-in-aid.
2. Establish guidelines and criteria for the awarding of educational grants and scholarships.
3. Stimulates and develops scholarships sponsored by industry, individual donors, service clubs, minority groups, associations, athletic conferences, and professional sports leagues.
4. Formulates recommendations for rules and administration of self-help programs, either loan or job, to include college loan, National Defense loan, Education Act loan, and State Guaranteed or Federal Insured loan.
5. Receives, reviews and screens all applications prior to April 1 and makes recommendations to Board of Directors for Association approval or rejection.

ARTICLE XVI

HISTORICAL AND ARCHIVES COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of the Executive Director and approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed with approval of Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the committee Chairman to form a workable group.

Section 4

Selection of Committee Members: Recommended by the Chairman appointed by the President with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed with approval of Board of Directors.

Section 6

Functions and Responsibilities:

1. Compiles history of the Association.
2. Establishes a plan for maintenance of historical records of the Association and preserving important archives.

ARTICLE XVII

HONORS AWARDS COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of Executive Director and the approval of the Board of Directors from the Certified membership of the Association. The Chairman of the Honor Awards Committee will be Chairman of the N.A.T.A. Hall of Fame Committee.

Section 2

Term of Office: Two years and may be reappointed with the approval by the Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the committee Chairman to form a workable group.

Section 4

Selection of Committee Members: Recommended by the Chairman and appointed by the President with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed with approval by the Board of Directors.

Section 6

Functions and Responsibilities:

1. Coordinates and supervises the establishment and disbursement of all special recognitions and awards presented under the auspices of the Association.
2. Receives, prior to February, reviews and screens all candidates for the 25 Year Award, Honorary Members Award, and Helms Award and makes recommendations to the Board of Directors prior to March 15.
3. Receives and reviews all proposals for the initiation of new or additional honor awards and makes recommendations to the Board of Directors for Association approval or rejection.
4. The Citizens Savings Athletic Foundation (formerly Helms Hall of Fame), N.A.T.A. Hall of Fame Committee will function under the Honor Awards Committee, but the committee will remain secret.

ARTICLE XVIII

INTERNATIONAL GAMES TRAINER NOMINATION COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of the Executive Director and the approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed with approval of Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the committee Chairman to form a workable group. The committee will remain secret.

Section 4

Selection of Committee Members: Recommended by the Chairman, appointed by the President with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed with approval of Board of Directors.

Section 6

Functions and Responsibilities:

1. Formulates procedures for NATA members to apply for nomination to athletic training staff for international games and submit such procedures to Board of Directors for approval.
2. Conduct process of nominating the applicants to the Medical Service Committee of International Games.

ARTICLE XIX

JOURNAL COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of the Executive Director and approval of the Board of Directors from the Certified membership of the Association. The Chairman also serves as the Editor-in-Chief of *Athletic Training - The Journal of the National Athletic Trainers' Association*.

Section 2

Term of Office: Two years and may be reappointed with approval of the Board of Directors.

Section 3

Committee Members: The number of committee members shall be determined by the committee Chairman to form a workable group.

Section 4

Selection of Committee Members: Recommended by the Chairman and appointed by the President with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed with approval or the Board of Directors.

Section 6

Function and Responsibilities:

1. Serves as the editorial committee for *Athletic Training*.
2. Selects a printer, with approval of the Board of Directors to produce and distribute *Athletic Training*.
3. Solicits and sells advertising space in *Athletic Training* at rates determined by the committee.
4. Establishes and maintains a written statement of the editorial policies of *Athletic Training* subject to review and approval by the Board of Directors.

ARTICLE XX

MEMBERSHIP COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of the Executive Director and approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed with approval of the Board of Directors.

Section 3

Committee Members: The Committee members shall be the ten District Secretaries. District Secretary shall be a Certified member.

Section 4

Term of Office of Committee Members: For the time the person is the District Secretary.

Section 5

Functions and Responsibilities:

1. Cooperates with National and District Offices regarding opinions and clarification of matters relating to qualifications for membership.
2. Periodically reviews the various membership classifications and makes recommendations to the Board of Directors for changes.
3. The Membership Committee is responsible to the Executive Director.
4. Cooperates with Professional Education Committee, Certification Committee and Board of Certification in relation of Continuing Education, Membership and Certification.

ARTICLE XXI

NATIONAL ANNUAL MEETING AND CLINICAL SYMPOSIUM COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of the Executive Director and approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed with approval of the Board of Directors.

Section 3

Committee Members: The number of committee members shall be determined by the Chairman to form a workable group.

Section 4

Selection of Committee Members: Recommended by the Chairman, appointed by the President with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years (except host district and local committees) and may be reappointed with the approval of the Board of Directors.

Section 6

Functions and Responsibilities:

1. Selects sites and hotels for the Annual Meeting and Clinical Symposium according to guidelines set by the Board of Directors.
2. Supervises all plans and arrangements for the Annual Meeting and Clinical Symposium.
3. Coordinates all programs and functions at the Annual Meeting and Clinical Symposium.
4. Forms appropriate sub-committees in cooperation with the host district and city. Such sub-committees shall have duties and responsibilities as designated by the Chairman of the National Committee.
5. Keeps the Executive Director informed on all Annual Meeting and Symposium plans and reports to the Board of Directors at each scheduled meeting.

ARTICLE XXII

PLACEMENT COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of the Executive Director and approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed by the Board of Directors.

Section 3

Committee Members: There shall be one committee member from each district.

Section 4

Selection of Committee Members: Recommended by the Chairman and appointed by the President with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed with approval of the Board of Directors.

Section 6

Function and Responsibilities:

1. Serves as the official job placement agency of the Association.
2. Receives notification of job vacancies from high schools, colleges and universities, and professional teams, and maintains a current listing of all vacancies.
3. Receives requests from Association members for information on available position vacancies.
4. Informs only NATA members of available positions and informs employers of prospective NATA applicants.
5. Arranges for and maintains a job placement service at the National meeting, (1) posting of current job vacancies, (2) posting a list of Association members desiring placement, (3) assistance in interview arrangements.

ARTICLE XXIII

PROFESSIONAL EDUCATION COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of the Executive Director and approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed with approval of the Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the committee Chairman to form a workable group.

Section 4

Selection of Committee Members: Recommended by the Chairman and appointed by the President with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed with approval of the Board of Directors.

Section 6

Functions and Responsibilities:

1. Investigates and studies all possibilities for the professional education and advancement of the Association, its members, and the athletic training profession and makes recommendations to the Board of Directors.
2. Confers with appropriate consultants regarding recommendations for professional advancement.
3. Makes recommendations to the Board of Directors for the accreditation of schools offering graduate and undergraduate preparation in athletic training.
4. Establishes and supervises the enforcement of professional education standards and criteria for all association certified athletic trainers.
5. Cooperates with the Certification Committee in the establishment of certification requirements and criteria.
6. Investigates and recommends opportunities for in-service training and continuing education for Association members.
7. Serves as a consulting and liaison agency between the Association and educational institutions providing or preparing to provide professional preparation for athletic trainers.
8. Sends educational requirements and any future changes in educational standards, to all Recruitment Committee members.

Section 7

Sub-Committee for Graduate Education

1. *Selection of Chairman:* Recommended by the Chairman of the Professional Education Committee and appointed by the President with agreement of the Executive Director and approval by the Board of Directors from the Professional Education Committee members.
2. *Term of Office:* Two years and may be reappointed with approval of the Board of Directors.
3. *Sub-Committee members:* The number of sub-committee members to be determined by the sub-committee Chairman to form a workable group.
4. *Term of Office:* Two years and may be reappointed with approval of the Board of Directors.
5. *Functions:* To work in the area of graduate education and make recommendations to the Professional Education Committee as a whole.

Section 8

Sub-Committee for Continuing Education

1. *Selection of Chairman:* Recommended by the Chairman of the Professional Education Committee and appointed by the President with agreement of the Executive Director and approval by the Board of Directors from the Professional Education Committee members.
2. *Term of Office:* Two years and may be reappointed with approval of the Board of Directors.
3. *Sub-Committee members:* The number of sub-committee members to be determined by the sub-committee Chairman to form a workable group.
4. *Term of Office:* Two years and may be reappointed with approval of the Board of Directors.
5. *Functions:* To work in the area of continuing education and make recommendations to the Professional Education Committee as a whole.

ARTICLE XXIV

PUBLIC RELATIONS AND INFORMATION COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of the Executive Director and approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed by the Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the committee Chairman to form a workable group.

Section 4

Selection of Committee Members: Appointed by the Chairman with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed with approval of the Board of Directors.

Section 6

Functions and Responsibilities:

1. Establishes and maintains an effective public relations program for the Association by preparing and distributing appropriate news releases, feature stories, etc. to the various news media, radio, television and newspapers.
2. Investigates and recommends to the Board of Directors possible avenues through which the Association may enhance its professional image and interpret its purposes and objectives to allied associations and professional, high schools, colleges and universities, and the general public.

ARTICLE XXV

RESEARCH AND INJURY COMMITTEE

Section 1

Selection of Chairman: Appointed by the President with agreement of the Executive Director and approval of the Board of Directors from the Certified membership of the Association.

Section 2

Term of Office: Two years and may be reappointed by the Board of Directors.

Section 3

Committee Members: The number of committee members will be determined by the committee Chairman to form a workable group.

Section 4

Selection of Committee Members: Recommended by the Chairman and appointed by the President with the approval of the Board of Directors from the Certified membership of the Association.

Section 5

Term of Office: Two years and may be reappointed with approval of the Board of Directors.

Section 6

Function and Responsibilities:

1. Coordinates all research efforts conducted under the auspices of the Association.
2. Receives and evaluates all research proposals from Association members, schools and other institutions and makes recommendations to the Board of Directors for research projects worthy of Association support and sponsorship.
3. Makes recommendations to the ten association districts for presentation of research findings at regional and district meetings.
4. Makes recommendations to the Board of Directors, the National Convention Chairman, and the National Program Committee for presentation of research findings at annual national meetings.
5. Prepares and submits the results of Association research to Journal Committee for possible publication in *Athletic Training Journal* of the National Athletic Trainers' Association and other Association sponsored publications.

ARTICLE XXVI

MEMBERSHIP PROVISIONS AND DUES

Section 1

Membership Classes

1. CERTIFIED CODE 1

Qualifications for Membership:

Must be a Certified Athletic Trainer (A.T.,C.).

Dues: \$25.00 per year plus District Dues.

Certified and Retired Certified members only are entitled to vote on N.A.T.A. affairs and to hold N.A.T.A. office.

Provisions for maintaining Certification:

A person who is once certified as an Athletic Trainer (A.T.,C.) remains certified as long as he or she meets the minimum requirements for continuing professional education and only as long as such requirements are met.

Continuing Professional Education Units (CPEU) shall be defined and designated by the Professional Education Committee and approved by the Board of Directors.

To maintain certification, a minimum of six (6) Continuing Professional Education units (CPEU) shall be accumulated every three (3) calendar years. The three year intervals shall be determined by the Board of Directors.

A Certified Athletic Trainer is responsible for sending to the N.A.T.A. National Office an approved statement of any Continuing Professional Education Units (CPEU) to be entered on record. Such a statement must be sent to the National office within 30 days after the date of acquiring such units.

A Certified Athletic Trainer who does not accumulate a recorded number of CPEU's every three (3) calendar years equal to at least the minimum requirement shall have his/her certification suspended. The person has the right to appeal.

If the person whose certification is suspended does not accumulate sufficient CPEU's to meet the minimum requirements within two (2) years after the date of his suspension his/her certification shall be cancelled.

A person whose Certified Membership was cancelled or changed to a different class of membership because of the application of the "Actively Engaged" definition and requirement and who wishes to have his/her Certification reinstated shall apply to the Director and Secretary of the District in which he/she held Certified membership for reinstatement. If the district officers agree that the person is entitled to reinstatement they should approve the application and forward the decision to the N.A.T.A. National Office. An application for reinstatement under the provisions of this paragraph must be received by the proper district officers before May 30.

2. ASSOCIATE CODE 2

Qualifications for Membership:

Bachelor's degree from an accredited college or university.

Proof of successful completion of an athletic training course (minimum 2 semester hours or 3 quarter hours credit) from an accredited college or university. Convention courses shall not count.

Proof of current certification in standard first aid and cardio-pulmonary

resuscitation (CPR) or equivalent. Emergency medical technician certification may be substituted for first aid and CPR.

Proof of athletic training room work experience of at least 600 clock hours (not more than 300 clock hours during one calendar year will be accepted) under the direct supervision of a Certified Athletic Trainer. The work experience shall include: preventive and protective taping, recognition of injuries, immediate care of injuries and the use of usual training room modalities. The Certified Athletic Trainer under whom the person worked shall sign a record verifying the work experience.

Must be actively engaged in athletic training and continue to be actively engaged for the maintenance of Associate membership. The N.A.T.A. definition of "actively engaged" in Athletic Training is as follows:

A person who is on a salary basis (not a fee for service basis), employed full-time by an educational institution, professional athletic organization, or other bona fide athletic organization for the duration of the institution's school year or the athletic organization's sport season and who performs the duties of athletic trainer as a major responsibility of his/her employment.

An Associate member in good standing for the calendar year of 1978 (before June 10, 1978) is not bound by the "actively engaged" requirement.

To be eligible for continuance of Associate membership the person must accumulate at least six (6) Continuing Professional Education Units (CPEU) every three (3) calendar years. (The effective date of this paragraph shall be January 1, 1982).

Continuing Professional Education Units (CPEU) shall be defined and designated by the Professional Education Committee and approved by the Board of Directors.

An Associate member is responsible for sending to the N.A.T.A. National Office an approved statement of any Continuing Professional Education Units (CPEU) to be entered on record. Such a statement must be sent to the National Office within 30 days after the date of acquiring such units.

An Associate member who does not accumulate a recorded number of CPEU's every three (3) calendar years equal to at least the minimum requirement shall have his/her membership suspended. The person has the right to appeal.

If the person whose Associate membership is suspended does not accumulate sufficient CPEU's to meet the minimum requirement within two (2) years after the date of membership suspension, his/her membership shall be cancelled.

Associate members are not entitled to vote on N.A.T.A. affairs or to hold N.A.T.A. office.

Dues: National — \$25.00 plus District dues.

3. RETIRED

Retired, Certified — Code 3

Retired, Non-Certified — Code 9

A Certified member or an Associate member who retires because of age shall have the privilege of continuing in the class of membership held at the time of retirement without further payment of dues.

A Certified or Associate member who is eligible for Retired status and who wishes to continue membership in the N.A.T.A. in the Retired class must request change to this class through the Secretary of the District in which he/she is a member.

A Retired-Certified member shall continue to have the privilege of voting on N.A.T.A. affairs and to hold N.A.T.A. office.

4. STUDENT CODE 4

Note: Revision of June 11, 1976 eliminated high school students for new memberships. A high school student in good standing at that time is allowed to continue student membership.

Qualifications for Membership:

A person who is a full time student (graduate or undergraduate) in a college or university and who is performing the duties of a student athletic trainer under the direct supervision of a Certified Athletic Trainer and is preparing for the profession of athletic training is eligible for Student membership. The student must be recommended by the Certified Athletic Trainer under whom the student is working. A student who is enrolled in an approved N.A.T.A. curriculum and has not yet progressed to clinical work may be approved by the Certified Athletic Trainer who is the program director.

If a person ceases to be a full time student he/she is not eligible for Student membership after December 31st of the year during which he/she ceased to be a full time student, except for the provisions of the following two paragraphs.

A Student member who is awarded a degree (bachelor's or graduate) and who ceases to be a full time student and who does not become Certified and does not obtain a job as an actively engaged athletic trainer may continue membership in the Student class for one (1) year after the degree is awarded.

A Student member who transfers to a school (as a full time student) at which he/she is unable to satisfy the requirement of performing athletic training under direct supervision of a Certified Athletic Trainer may continue membership in the Student class provided he/she has had a minimum of 600 hours of acceptable athletic training experience under direct supervision of a Certified Athletic Trainer.

The time during which a person is a Student member shall not count as time engaged in athletic training for purposes of determining the number of years in the profession.

Student members are not entitled to vote on N.A.T.A. affairs or to hold N.A.T.A. office.

Dues: National — \$10.00 plus District dues.

5. AFFILIATE CODE 5

This membership class is open to individuals who are interested in the relationships of athletic training to education, biological sciences, psychology, athletics or sports medicine but who at the time are not directly related to athletic training.

Qualifications for membership:

Bachelor's degree from an accredited college or university or certification in physical therapy.

Professionally working in education, athletics, research or medicine.

Note: Physicians who are team physicians should be N.A.T.A. members in the Advisory class.

Affiliate members are not entitled to vote on N.A.T.A. affairs.

Dues: National \$25.00 per year plus District dues.

6. ADVISORY CODE 6

Qualifications for membership:

Physicians (MD or DO) who are directly associated with a sports program and are providing medical care and advice to members of the teams and advising the athletic trainer in regard to his/her duties are eligible for membership in this class.

A Certified or Associate member must nominate a prospective candidate for this membership. The nomination shall then be presented to the District Secretary for approval.

Advisory members are not entitled to vote on N.A.T.A. affairs or to hold office.

Dues: National - \$25.00 per year plus District dues.

7. ALLIED CODE 7

This membership class is open to individuals whose business interest is related to athletic training or athletics in general.

Allied members are not entitled to vote on N.A.T.A. affairs or to hold office.

Dues: National - \$25.00 per year plus District dues.

8. HONORARY CODE 8

An individual may be awarded Honorary membership through the National organization only. A person who, by virtue of his/her acts and speech, shows profound interest in the athletic training profession and in enhancing its service to those in athletics shall be eligible for membership in this class.

Nominations may be made only by a Certified member through his/her district director who will then forward the nominee's name and resume to the Chairman of the Honor and Awards Committee. The committee will make recommendations to the Board of Directors for its approval.

Honorary members are not entitled to vote on N.A.T.A. affairs or to hold office.

There are no dues for Honorary members.

Section 2

APPROVAL OF APPLICATIONS FOR MEMBERSHIP

1. Membership in the N.A.T.A. must come through a district and is subject to the district secretary's approval. In cases of doubt regarding an applicant's qualifications for membership, the National Membership Committee shall be consulted.
2. Candidates for membership (except Honorary) shall be recommended by at least one (1) Certified member of the district in which the candidate is located. Two (2) copies of the application for membership shall be sent to the district secretary. If the candidate is accepted (class of membership designated) the membership is recorded for the district and a copy of the approved application with National dues is sent to the National office.
3. A person who is a member of one of the N.A.T.A. districts must be a National member and pay both National and District dues.
4. An N.A.T.A. member must hold district membership. The district membership shall be in the district in which the member is employed (except members in military service and Student members). Student members address of record shall be the member's permanent home address.

Section 3

DUES

1. National dues for each class of membership are as set by the Board of Directors. District dues are set by the district.
2. Dues become payable on January 1st for the calendar year. If dues are not paid by March 1st the member becomes delinquent. If dues are not paid by April 1st the member is suspended and must apply for reinstatement. A fee of \$10.00 (payable to the National Office) is charged for reinstatement. (Effective Jan. 1, 1978).
3. The National Membership Committee should consider the circumstances of non-payment of dues and make a judgement as to the reinstatement of a suspended member to the previous class of membership later in the year. However, if a member is suspended for non-payment of dues for a full year (the calendar year for which dues are first not paid) or more he/she must apply for membership as a new member and meet the current qualifications for membership in the class of membership for which he/she is applying.
4. The time for which suspension is in effect, year or more, shall not count as time qualifying a person for certain classes of membership or as time engaged in the profession.

Section 4

CHANGE OF MEMBERSHIP CLASS

1. If a member wishes to change his/her membership class and believes that he/she is eligible for such a change, a "Change of Membership Class Form" should be requested from the district secretary. This form (2 copies) should be completed and returned to the district secretary for review and action. If approved, the change is recorded and the form sent to the National Office for final approval.
2. If a member is found by the National Office to be in the wrong membership class, he/she will be reclassified by the Executive Director. This will be done without the member making a request for a change. Should a change be made in this way, the Executive Director will notify the member, the district director, the district secretary and the membership committee.

Section 5

INTER-DISTRICT TRANSFER OF MEMBERSHIP

1. A member of the Association in good standing who moves into a district other than the one in which he holds membership must transfer his/her membership to district into which the move is made. This is done by filing an "Application for District Transfer" request with the secretary of district which he/she is leaving (moving from).

PROCEEDINGS OF THE BOARD OF DIRECTORS NATIONAL ATHLETIC TRAINERS' ASSOCIATION

MID-YEAR MEETING

February 3, 1979
Stouffers Riverfront Hotel
St. Louis, Missouri

SUMMARY OF ACTIONS

The following matters were discussed and actions as indicated taken at the meeting of the Board of Directors of the NATA held at St. Louis, Missouri, on February 3, 1979. The following were present:

Mr. William Chambers, President.
Mr. Otho Davis, Executive Director.
Mr. Bruce Melin, Parliamentarian.
Mr. Wesley Jordan, District 1.
Mr. Dick Malacrea, District 2.
Mr. Herman Bunch, District 3.
Mr. Gordon Stoddard, District 4.
Mr. Frank Randall, District 5.
Mr. Cash Birdwell, District 6.
Mr. Troy Young, District 7.
Mr. Don Chu, District 8.
Mr. Bobby Barton, District 9.
Mr. Larry Standifer, District 10.

I. AUDIOVISUAL AIDS:

December 8, 1978

Mr. Otho Davis
Executive Director
N.A.T.A.
112 South Pitt St.
P.O. Box 1865
Greenville, NC 27834

Dear Otho:

This year the Audio-Visual Committee has been working on developing a National Trainers' Directory. We have been attempting to develop this with the help and hard work of Mr. Hugh Grubiss of Cramer Chemical Company. Hugh should by this date be in possession of the computer list of mailing addresses of the membership and I expect to hear from him shortly in this regard.

We have also been keeping on top of mailing our A-V bibliography to those who request a copy.

Here's hoping that you and yours enjoy a happy holiday season.

Sincerely,

Bob Burkardt
Director of Physical Education
Certified Athletic Trainer

II. CAREER INFORMATION AND SERVICES COMMITTEE:

MEMORANDUM TO: N.A.T.A. Board of Directors
FROM: C.O. Demers, Chairman, Career Information & Service Committee
SUBJECT: Semiannual Report

1. Individual requests for Career Information continues to be heavy.
2. As anticipated, requests for bulk supply of brochures has decreased since our policy of charging for the same has been adapted.

3. This situation has resulted in our last printing being able to cover a longer period of time than had been anticipated.
4. Consequently due to personnel changes in N.A.T.A. district officers and committee chairmanships along with minor changes in the list of schools having approved curricula, we are forced to distribute a brochure which is somewhat outdated.
5. To compensate for this undesirable situation, I plan to take the following action:
 - a. Attempt to efficiently move a greater volume of our present brochures by supplying all officers, committee chairman and approved schools for their use.
 - b. Publish a one panel insert listing the corrections to the brochure.
6. To eliminate this problem in the future, I suggest the following:
 - a. Limit the initial printing to 10,000 copies.
 - b. Restrict all material which might tend to be superceded to the brochure insert. This would allow for the brochure to be timely for a longer period and allow for greater ease in updating the material.

ACTION:

Motion by District 8, seconded by District 4 and carried to approve the limitation of the Career Information Services brochure to an initial printing of 10,000 copies and to restrict all material which might tend to be superceded to the brochure insert; this to allow for the brochure to be timely for a longer period and allow for greater ease in updating the material.

III. CERTIFICATION:

BOARD OF CERTIFICATION
NATIONAL ATHLETIC TRAINERS ASSOCIATION
REPORT TO THE BOARD OF DIRECTORS
JANUARY 1979
RODERICK G. MOORE II
CHAIRMAN
VALPARAISO UNIVERSITY

COMMITTEE MEMBERSHIP

MARJORIE ALBOHM, Indiana University
JOHN ANDERSON, M.D., Bowdoin College (advisory)
FREDERICK BEHLING, M.D., Palo Alto, California (Advisory)
MICHAEL J. CAPPETO, Columbia University
JAMES DODSON, Midland High School, Texas
JOE GIECK, Ed.D., University of Virginia
BUFORD HARMON, Mt. San Antonio Junior College, California
RICHARD F. IRVIN, Ed.D., Oregon State University
CARL KREIN, Central Connecticut State College
CHARLES KRPATA, Cupertino, California
RUSSELL MILLER, (On leave 1977-1979)
STEVE MOORE, Tennessee Tech University
EDWARD J. PHILLIPS, United States Military Academy

MEETINGS

The Committee met June 11, 1978, in Las Vegas, Nevada. Complete minutes of that meeting are available upon request from the committee chairman. The next full meeting of the Committee is scheduled for January 4, 1979, in Nashville, Tennessee.

ACTIVITIES AND ACCOMPLISHMENTS - June 1978 to December 1978

1. EXAMINATIONS

Sixty-five candidates were examined June 12, 1978, in Las Vegas, Nevada. Of

andidates opted to take the off-site oral-practical

lates were tested regionally in Iowa, California, Pen-
Indiana, Oregon, Tennessee and Connecticut. Of this
take the off-site oral-practical examination.

athletic trainers were involved in the examination
ners. 102 certified athletic trainers have been trained
these athletic trainers administered from one to five

ations were administered during 1978. Fourteen can-
m. The average raw score of 40.92 was 5.17 points
core of the on-site examination.

candidates are scheduled to be examined at the
1979. Additional sites may be needed for regional
of 1979 sites, dates and deadlines is included as At-

rbor to Valparaiso went well but there are still many
ive assistant was sick for several weeks during the
uch time as needed. Hopefully that stage is past. One
September but released in December. A new part-
nd week of January, 1979.

strative procedures were realized as necessary to cut
k involved. There is now a separate application for
andidate applies under. This has eliminated much of
s of the application needed to be completed. Now each
ly filled out. A re-examination application has also
confusion failing candidates have found in the in-
them. See Attachments B, C, D, E, F.

regular certification account and the plaque account
as soon as possible after the books are closed Decem-
is a copy of the 3rd Quarter Statement which has
e Board of Directors.

depleted so 500 more were ordered and have been
as developed with the mailing cartons. The mailing
re the wrong ones - an admitted company mistake -
nt. Several phone calls have righted the situation and
og of orders can be sent out.
have been returned due to damage in transit or
s printing.

ed through the year to solicit new questions for the
ded this drive.

EXAMINATION

already been mentioned. Richard Irvin has prepared
which can be used to develop alternate forms of the
to be used in 1979. Attachment H is a list of approved

at this time as the Chairman is still gathering input
id-West as to the needs of the areas and qualifications
board of Certification. Specific recommendations will

ited States Military Academy, will be retiring from
79. He was appointed to the original Board and our
the tremendous job he has done over the past eleven

to the Board of Directors for their consideration at

y District 7 that the report as presented by accepted.

y District 7 and carried that the President notify Mr.
e Board of Certification that the examination be ad-
ho were deprived of taking the examination at Palo
going to the test or that individuals be given com-
t spring examination site, this action to take place

by District 7 to have Mr. Moore explain why there is
results. Motion carried.

were referred to the Fiesta Bowl Committee which

s of the Chairman of the Drug Education Committee
sity to Mars Hill College, and due to the change in
wo institutions, a budgetary request of \$100.00 is
drug education materials and publications. While at
these materials could be ordered through the Health
at Mars Hill College, the Drug Education Chairman is
ine and the fund for drug education materials is not
Health Education at Louisiana State University, the
ould receive examination copies of drug education
ons copies are no longer made available.

ee would like to go on record in support of the Board
Athletic Trainer's Association in their discussion on
1978, to retain the title of *Chairman* as opposed to

ACTION:

Motion by District 9, seconded by District 2 and carried to approve the budgetary request of \$100.

With regard to the use of the Term of "Chairman", Mr. Chambers to write to the Committee Chairman and indicate to him that in order to be consistent with the bylaws the term "Chairman" should be left as is.

V. ETHICS:

Report accepted as information with no other action taken by the Board.

VI. GRANTS AND SCHOLARSHIPS:

Moved by District 7, seconded by District 2 that the association will contribute \$500 for the Pinky Newell scholarship with the President to write to Cramer Products requesting that they increase their contribution to \$500, indicating to them their other choices as to the disposition of their donation in the event they did not desire to go to this amount. Motion carried

VII. HISTORY AND ARCHIVES:

Correspondence received noted as information with the Board taking no other action.

VIII. HONOR AWARDS:

It has been requested that a more suitable 25 year award be presented. Mr. Young suggested that instead of the present certificate that perhaps a plaque could be made; he then suggested how this might be done. If was the consensus that Mr. Young look further into this matter and report his subsequent findings to Mr. Davis. Mr. Chambers, in the meanwhile was to let Mr. Sullivan know was happening in this regard, with no other official action being taken.

IX. JOURNAL:

Moved by District 3, seconded by District 6 and carried that the interest of Mr. Thompson in resigning as editor or any action thereon be denied until further information is received from Mr. Thompson.

Moved by District 6, seconded by District 3 to deny the request of Mr. John Maley of Chattanooga Pharmacal Company to sponsor a writing contest for NATA members. Motion carried

Moved by District 8, seconded by District 7 that the Board members, through their districts lend their help to John Wells in connection with his abstracts for the Journal. Motion carried

Moved by District 2, seconded by District 10, that a \$50 honorarium be paid to all individuals having original, unpublished articles published in the journal. After a discussion concerning this practice among other Journals, the motion was voted upon, with Districts 2, 4, 5 and 10 being in favor; Districts 1, 3, 6 and 7 being against, District 9 being against and District 8 abstaining, the motion thereupon being declared as Lost.

X. MEMBERSHIP:

Attention was called to the request concerning the matter of Mr. Joe Donovan by Mr. Malacrea, with Mr. Malacrea, after explaining the situation in detail, then moving that Mr. Donovan be given special consideration and granted certification through executive procedure. There being no second to the motion, the motion was then declared to be dead for lack of a second.

Moved by District 9, seconded by District 4 that reinstatement of R. Scott Teets to certification and certified membership NOT be approved.

XI. NATIONAL CONVENTION:

Report as to present arrangements received as information with no other official actions taken by the Board.

CONVENTION SITES: The Board considered the request of Orlando in lieu of the contemplated Seattle forthcoming convention site. After a brief discussion and there being indicated an apparent discrepancy in feelings as to this matter, it was moved, seconded and carried that further action on this matter be tabled until Mr. Hoover had an opportunity to investigate both cities and could subsequently present some report on this matter at the June board meeting.

XII. PLACEMENT COMMITTEE:

To: Otho Davis

From: Rod Poindexter

Re: Placement Committee Mid-Year Report

Date: December 15, 1978

Request for Board Approval of New Placement Committee Members.

District 1

Phil Mateja

University of Maine Orono

Orono, ME 04473

District 10

Mark Smaha

Washington State University

Pullman WA 99164

These changes are requested to replace former members that are unable to continue on the committee because of other commitments.

The NATA Placement Committee has published five notices from June 28, 1978-December 12, 1978. These notices included 94 position vacancies. The services of the committee are used by over 700 NATA members

ACTION:

Upon the recommendation of the committee, it was moved by District 4, seconded by District 10 and carried to approve the addition of Phil Mateja, Mark Smaha and John Sciars to the committee.

XIII. PROFESSIONAL EDUCATION:

Mr. Redgren and Mr. Schrader appeared for the committee, indicating the activities of the committee since its last report to the Board. After being questioned in detail by the various board members concerning special matters concerning professional education and the departure of both Mr. Redgren and Mr. Schrader, the Board, after further brief discussion, acted as follows:

On the matter of having the same individual on two committees, the consensus was that the Directors discuss this matter further with their respective districts and that the matter be put on the agenda for the June board meeting for further discussion and/or action.

PROCEEDINGS OF THE BOARD OF DIRECTORS NATIONAL ATHLETIC TRAINING ASSOCIATION

MID-YEAR MEETING

February 3, 1979
Stouffers Riverfront Hotel
St. Louis, Missouri

SUMMARY OF ACTIONS

The following matters were discussed and actions as indicated taken at the meeting of the Board of Directors of the NATA held at St. Louis, Missouri, on February 3, 1979. The following were present:

Mr. William Chambers, President.
Mr. Otho Davis, Executive Director.
Mr. Bruce Melin, Parliamentarian.
Mr. Wesley Jordan, District 1.
Mr. Dick Malacrea, District 2.
Mr. Herman Bunch, District 3.
Mr. Gordon Stoddard, District 4.
Mr. Frank Randall, District 5.
Mr. Cash Birdwell, District 6.
Mr. Troy Young, District 7.
Mr. Don Chu, District 8.
Mr. Bobby Barton, District 9.
Mr. Larry Standifer, District 10

I. AUDIOVISUAL AIDS:

December 8, 1978

Mr. Otho Davis
Executive Director
N.A.T.A.
112 South Pitt St.
P.O. Box 1865
Greenville, NC 27834

Dear Otho:

This year the Audio-Visual Committee has been working on developing a National Trainers' Directory. We have been attempting to develop this with the help and hard work of Mr. Hugh Grubiss of Cramer Chemical Company. Hugh should by this date be in possession of the computer list of mailing addresses of the membership and I expect to hear from him shortly in this regard.

We have also been keeping on top of mailing our A-V bibliography to those who request a copy.

Here's hoping that you and yours enjoy a happy holiday season.

Sincerely,

Bob Burkardt
Director of Physical Education
Certified Athletic Trainer

II. CAREER INFORMATION AND SERVICES COMMITTEE:

MEMORANDUM TO: N.A.T.A. Board of Directors
FROM: C.O. Demers, Chairman, Career Information & Service Committee
SUBJECT: Semiannual Report

1. Individual requests for Career Information continues to be heavy.
2. As anticipated, requests for bulk supply of brochures has decreased since our policy of charging for the same has been adapted.

3. This situation has resulted in our last printing being time than had been anticipated.
4. Consequently due to personnel changes in N.A.T.A. chairmanships along with minor changes in the curricula, we are forced to distribute a brochure.
5. To compensate for this undesirable situation, I propose:
 - a. Attempt to efficiently move a greater volume of material by supplying all officers, committee chairman and a
 - b. Publish a one panel insert listing the correct
6. To eliminate this problem in the future, I suggest:
 - a. Limit the initial printing to 10,000 copies.
 - b. Restrict all material which might tend to be superceded. This would allow for the brochure to be timely and give greater ease in updating the material.

ACTION:

Motion by District 8, seconded by District 4 and carried. The Career Information Services brochure to be initially restrict all material which might tend to be superceded allow for the brochure to be timely for a longer period of time in updating the material.

III. CERTIFICATION:

BOARD OF CERTIFICATION
NATIONAL ATHLETIC TRAINING
REPORT TO THE BOARD OF DIRECTORS
JANUARY 1979
RODERICK G. MOORE
CHAIRMAN
VALPARAISO UNIVERSITY

COMMITTEE MEMBERSHIP

MARJORIE ALBOHM, Indiana University
JOHN ANDERSON, M.D., Bowdoin College (advisor)
FREDERICK BEHLING, M.D., Palo Alto, California
MICHAEL J. CAPPETO, Columbia University
JAMES DODSON, Midland High School, Texas
JOE GIECK, Ed.D., University of Virginia
BUFORD HARMON, Mt. San Antonio Junior College
RICHARD F. IRVIN, Ed.D., Oregon State University
CARL KREIN, Central Connecticut State College
CHARLES KRATA, Cupertino, California
RUSSELL MILLER, (On leave 1977-1979)
STEVE MOORE, Tennessee Tech University
EDWARD J. PHILLIPS, United States Military Academy

MEETINGS

The Committee met June 11, 1978, in Las Vegas, Nevada. The minutes of the meeting are available upon request from the committee. The next meeting of the Committee is scheduled for January 4, 1979, in Las Vegas, Nevada.

ACTIVITIES AND ACCOMPLISHMENTS - June 1978

1. EXAMINATIONS
Sixty-five candidates were examined June 12, 1978.

this group, seventeen candidates opted to take the off-site oral-practical examination.

In August, 1978, 194 candidates were tested regionally in Iowa, California, Pennsylvania (2 sites), Michigan, Indiana, Oregon, Tennessee and Connecticut. Of this group, 68 candidates opted to take the off-site oral-practical examination.

During 1978, 142 certified athletic trainers were involved in the examination process as on or off-site examiners. 102 certified athletic trainers have been trained as off-site examiners. Forty of these athletic trainers administered from one to five individual examinations.

One hundred off-site examinations were administered during 1978. Fourteen candidates failed the examination. The average raw score of 40.92 was 5.17 points higher than the average raw score of the on-site examination.

One hundred seventy-two candidates are scheduled to be examined at the regional sites on January 21, 1979. Additional sites may be needed for regional overflows in March. The list of 1979 sites, dates and deadlines is included as Attachment A.

2. CERTIFICATION OFFICE

The transition from Ann Arbor to Valparaiso went well but there are still many rough spots. The administrative assistant was sick for several weeks during the Fall and could not devote as much time as needed. Hopefully that stage is past. One part-time person was hired in September but released in December. A new part-time person will start the second week of January, 1979.

Several revisions in administrative procedures were realized as necessary to cut down the immense paperwork involved. There is now a separate application for each Section (I, II, III, IV) a candidate applies under. This has eliminated much of the confusion as to which parts of the application needed to be completed. Now each application must be completely filled out. A re-examination application has also been developed to end the confusion failing candidates have found in the instructions this office sends to them. See Attachments B, C, D, E, F.

3. FINANCIAL STATUS

Financial statement of the regular certification account and the plaque account will be submitted for review as soon as possible after the books are closed December 31, 1978. Attachment G is a copy of the 3rd Quarter Statement which has already been distributed to the Board of Directors.

4. PLAQUE SALES

The plaques on hand were depleted so 500 more were ordered and have been received. A major problem has developed with the mailing cartons. The mailing cartons were received but were the wrong ones - an admitted company mistake - and the right ones were not sent. Several phone calls have righted the situation and by January 10, 1979, the backlog of orders can be sent out.

So far only two plaques have been returned due to damage in transit or dissatisfaction with the artist's printing.

5. P.E.S. EXAMINATIONS

A steady drive has continued through the year to solicit new questions for the item bank. Carl Krein has headed this drive.

6. OFF-SITE ORAL-PRACTICAL EXAMINATION

The statistical results have already been mentioned. Richard Irvin has prepared several alternate questions which can be used to develop alternate forms of the examination. These will begin to be used in 1979. Attachment H is a list of approved off-site examiners.

7. COMMITTEE MEMBERSHIP

No action will be requested at this time as the Chairman is still gathering input from the Southeast and the Mid-West as to the needs of the areas and qualifications of potential members to the Board of Certification. Specific recommendations will be forthcoming in June.

Mr. Edward J. Pillings, United States Military Academy, will be retiring from the Board on February 1, 1979. He was appointed to the original Board and our gratitude goes out to him for the tremendous job he has done over the past eleven years.

NEW BUSINESS

No new action is recommended to the Board of Directors for their consideration at this time.

Thank you for your time.

Respectfully submitted,

Roderick G. Moore II
Chairman
December 28, 1978

ACTION:

Moved by District 6, seconded by District 7 that the report as presented by accepted. Motion carried.

Moved by District 3, seconded by District 7 and carried that the President notify Mr. Moore that at the expense of the Board of Certification that the examination be administered to those individuals who were deprived of taking the examination at Palo Alto, by one individual tester going to the test or that individuals be given compensation to travel to the closest spring examination site, this action to take place within a three-month period.

Moved by District 10, seconded by District 7 to have Mr. Moore explain why there is such a long lag in the return of test results. Motion carried.

IV. DRUG EDUCATION:

1. Requests for Drug posters were referred to the Fiesta Bowl Committee which makes these posters available.
2. Due to the change in positions of the Chairman of the Drug Education Committee from Louisiana State University to Mars Hill College, and due to the change in financial provisions of the two institutions, a budgetary request of \$100.00 is requested for the purchase of drug education materials and publications. While at Louisiana State University these materials could be ordered through the Health Education courses. However, at Mars Hill College, the Drug Education Chairman is responsible for Sports Medicine and the fund for drug education materials is not available. In addition, while in Health Education at Louisiana State University, the Drug Education Chairman would receive examination copies of drug education publications. These examinations copies are no longer made available.
3. The Drug Education Committee would like to go on record in support of the Board of Directors of the National Athletic Trainer's Association in their discussion on Wednesday evening June 14, 1978, to retain the title of *Chairman* as opposed to chairperson.

Respectfully submitted,

John Wells, Chairman

ACTION:

Motion by District 9, seconded by District 2 and carried to approve the budgetary request of \$100.

With regard to the use of the Term of "Chairman", Mr. Chambers to write to the Committee Chairman and indicate to him that in order to be consistent with the bylaws the term "Chairman" should be left as is.

V. ETHICS:

Report accepted as information with no other action taken by the Board.

VI. GRANTS AND SCHOLARSHIPS:

Moved by District 7, seconded by District 2 that the association will contribute \$500 for the Pinky Newell scholarship with the President to write to Cramer Products requesting that they increase their contribution to \$500, indicating to them their other choices as to the disposition of their donation in the event they did not desire to go to this amount. Motion carried

VII. HISTORY AND ARCHIVES:

Correspondence received noted as information with the Board taking no other action.

VIII. HONOR AWARDS:

It has been requested that a more suitable 25 year award be presented. Mr. Young suggested that instead of the present certificate that perhaps a plaque could be made; he then suggested how this might be done. If was the consensus that Mr. Young look further into this matter and report his subsequent findings to Mr. Davis. Mr. Chambers, in the meanwhile was to let Mr. Sullivan know was happening in this regard, with no other official action being taken.

IX. JOURNAL:

Moved by District 3, seconded by District 6 and carried that the interest of Mr. Thompson in resigning as editor or any action thereon be denied until further information is received from Mr. Thompson.

Moved by District 6, seconded by District 3 to deny the request of Mr. John Maley of Chattanooga Pharmacal Company to sponsor a writing contest for NATA members. Motion carried

Moved by District 8, seconded by District 7 that the Board members, through their districts lend their help to John Wells in connection with his abstracts for the Journal. Motion carried

Moved by District 2, seconded by District 10, that a \$50 honorarium be paid to all individuals having original, unpublished articles published in the journal. After a discussion concerning this practice among other Journals, the motion was voted upon, with Districts 2, 4, 5 and 10 being in favor; Districts 1, 3, 6 and 7 being against, District 9 being against and District 8 abstaining, the motion thereupon being declared as Lost.

X. MEMBERSHIP:

Attention was called to the request concerning the matter of Mr. Joe Donovan by Mr. Malacrea, with Mr. Malacrea, after explaining the situation in detail, then moving that Mr. Donovan be given special consideration and granted certification through executive procedure. There being no second to the motion, the motion was then declared to be dead for lack of a second.

Moved by District 9, seconded by District 4 that reinstatement of R. Scott Teets to certification and certified membership NOT be approved.

XI. NATIONAL CONVENTION:

Report as to present arrangements received as information with no other official actions taken by the Board.

CONVENTION SITES: The Board considered the request of Orlando in lieu of the contemplated Seattle forthcoming convention site. After a brief discussion and there being indicated an apparent discrepancy in feelings as to this matter, it was moved, seconded and carried that further action on this matter be tabled until Mr. Hoover had an opportunity to investigate both cities and could subsequently present some report on this matter at the June board meeting.

XII. PLACEMENT COMMITTEE:

To: Otho Davis
From: Rod Poindexter
Re: Placement Committee Mid-Year Report
Date: December 15, 1978

Request for Board Approval of New Placement Committee Members.

District 1
Phil Mateja
University of Maine Orono
Orono, ME 04473

District 10
Mark Smaha
Washington State University
Pullman WA 99164

These changes are requested to replace former members that are unable to continue on the committee because of other commitments.

The NATA Placement Committee has published five notices from June 28, 1978-December 12, 1978. These notices included 94 position vacancies. The services of the committee are used by over 700 NATA members

ACTION:

Upon the recommendation of the committee, it was moved by District 4, seconded by District 10 and carried to approve the addition of Phil Mateja, Mark Smaha and John Sciers to the committee.

XIII. PROFESSIONAL EDUCATION:

Mr. Redgren and Mr. Schrader appeared for the committee, indicating the activities of the committee since its last report to the Board. After being questioned in detail by the various board members concerning special matters concerning professional education and the departure of both Mr. Redgren and Mr. Schrader, the Board, after further brief discussion, acted as follows:

On the matter of having the same individual on two committees, the consensus was that the Directors discuss this matter further with their respective districts and that the matter be put on the agenda for the June board meeting for further discussion and/or action.

When it comes to player protection— we cover the field and the nation.

Johnson & Johnson

Serving the nation with the finest name in player protection products

■ DANA E. MORRISON, JR. CO.

5121 N. Ravenswood Avenue
Chicago, IL 60640
312/561-0861

STATES COVERED: Iowa, Illinois, Indiana,
Michigan, Minnesota, Missouri, Ohio, Wisconsin

■ PAUL ROWAN & ASSOCIATES, INC.

475 Commercial Avenue
Palisades Park, NJ 07650
201/947-7805

STATES COVERED: Connecticut,
Delaware, Maine, Maryland, Massachu-
setts, New Hampshire, New Jersey,
New York, Pennsylvania, Rhode Island,
Vermont, Washington DC, West Virginia

■ ARCH BILLMIRE CO., INC.

2650 Third St.
San Francisco, CA 94107
415/285-8770

STATES COVERED: Alaska, Arizona,
California, Colorado, Hawaii, Idaho,
Kansas, Montana, Nebraska, Nevada,
New Mexico, North Dakota, Oregon,
South Dakota, Utah, Washington,
Wyoming

■ JOSLIN'S, INC.

5955 Eden Drive
Fort Worth, TX 76117
817/834-7160

STATES COVERED: Arkansas,
Louisiana, Mississippi, Oklahoma, Texas

■ METTS-RUPP, INC.

P.O. Box 634
Brandon, FL 33511
813/689-8900

STATES COVERED: Kentucky,
Tennessee, Virginia

■ THE WAYNE WATSON COMPANY

P.O. Box 13071
Station K
Atlanta, GA 30324
404/266-0770

STATES COVERED: Alabama, Florida,
Georgia, North Carolina, South Carolina

Johnson & Johnson welcomes you to the Annual Meeting and Clinical Symposium of the NATA. For over fifty years, J&J has been providing you with a line of quality products to help keep your players injury-free and on the playing field.

This year, J&J is again leading the way. We are bringing our fine line of products to you through established and respected manufacturers' representatives who can provide you with efficient coverage and service.

Look for our high-quality J&J athletic products at our booth. We and our representatives will be looking forward to visiting with you.



**PROFESSIONAL EDUCATION COMMITTEE'S REPORT TO THE
NATIONAL ATHLETIC TRAINERS ASSOCIATION'S BOARD
OF DIRECTORS**

Sayers "Bud" Miller, Chairman
January 20, 1979

I. Committee Meetings and Activities

Since the Professional Education Committee's meetings at the NATA's Annual Meeting in Las Vegas, June, 1978, the committee has held its midyear meeting at the Opryland Hotel, Nashville, Tennessee on January 6 and 7, 1979. All members of the committee were present at the midyear meeting with the exception of L.F. "Tow" Diehm, Gerald Bell and Dennis Sealey. In conjunction with this midyear meeting, the Professional Education Committee also presented its annual Professional Preparation Conference at the Opryland Hotel on January 7, 8, and 9, 1979. In addition, the Proceedings of the 1978 Professional Preparation Conference have been published and are on sale for the NATA membership.

II. Committee Membership and Assignments

Presently the following are members of the Professional Education Committee:

- District 1
Joanne Dolcemaschio, Brown University
(Status survey of Curriculum Graduates)
- District 2
Phil Donley, West Chester State College
(On leave of absence)
- District 2 -
Sayers "Bud" Miller, The Pennsylvania State University
(Committee Chairman & Accreditation)
- District 3 -
Al Proctor, Division of Sports Medicine, Department of Public Instruction, State of North Carolina
(Experimental Education Programs)
- District 4 -
Ron Sendre, Central Michigan University
(Educational Displays & Publication)
- District 4 -
John Schrader, Indiana University
(Professional Preparation Conferences)
- District 4 -
Glen Snow, Floyd Central High School, New Albany, Indiana
(Workshops at the Annual Meetings & High School Education)
- District 6 -
Paul Zeek, Lamar University
(Undergraduate Education)
- District 7 -
Gary Delforge, University of Arizona
(Graduate Education)
- District 7 -
L.F. "Tow" Diehm, University of New Mexico
(Ethical Standards for Educational Programs)
- District 8 -
Gerald Bell, Inter Isle Physical Therapy & Sports Medicine, Inc., moved from California State University at Sacramento
(Program Directors Council)
- District 9 -
Jack Redgren, Vanderbilt University
(Continuing Education)
- District 10 -
Lou Osternig, University of Oregon
(Visitation Team Training & Procedures)
- District 10 -
Dennis Sealey, University of Washington moved from University of Nebraska
(District 5)

Since Gerald Bell has moved from mainland United States which will limit his effectiveness as a member of the Professional Education Committee, it is the feeling of the Committee that Jerry needs to be replaced by a more functional member from District #8. Jerry has already recognized the fact that he would be unable to carry out the responsibilities of directing the Program Directors Council and has resigned from this Committee position. Jerry has performed a great quantity of the highest quality work for the Committee and is commended for this service provided to the Committee. The members of the Committee welcome Jerry to continue to attend our Committee meetings when he can make it in an unofficial capacity. On the recommendation of President Bill Chambers and other members of District #8, the Committee would like to recommend that the NATA's Board of Directors approve the appointment of Leon Skeie from the Orange Coast College to the Professional Education Committee.

The Committee would like to retain Dennis Sealey as a full-time member of the Professional Education Committee even though he has moved from District #5 to District #10. At the same time, it is our feeling that District #5 must be represented on the Committee and an additional person needs to be added to the membership of the Committee. Dan Foster from The University of Iowa has been highly recommended to several members of the Committee by a great number of athletic trainers. Therefore, the Committee would like to recommend that the NATA's Board of Directors approve the appointment of Dan Foster to the Professional Committee.

These appointments would bring the Committee's membership to 15 including Phil Donley, who is on leave of absence, and with each district being insured of representation on the Professional Education Committee.

III. Correction of Minutes Printed in the Fall (1978) Issue of Athletic Training.

In reviewing the Fall (1978) issue of Athletic Training and the minutes of the June 1978 Board of Directors Meetings at Las Vegas, the Committee felt that the following corrections needed to be made in regards to the actions taken by the Board upon the proposals of the Professional Education

Committee and should be printed in the next issue of the NATA Journal:

- A. The minutes indicated that the Professional Education Committee recommended that the athletic training educational programs offered by Western Illinois University, Louisiana State University and Indiana State University (Graduate Level) be placed on probation and that the Board of Directors approved this recommendation. Actually, the Committee recommended that these three programs be approved and the Board placed these schools on probation.
- B. In listing the schools recommended by the Committee for approval and approved by the Board of Directors, the graduate program at Indiana State University, which actually was placed upon probation, was incorrectly listed in place of the graduate program offered by Indiana University.

IV.

Approval and Reapproval of Athletic Training Education Programs

Although the Professional Education Committee does not ordinarily review and approve athletic training educational programs at its midyear meetings, it was felt that the circumstances in the following cases called for immediate action by the Committee:

- A. The athletic training educational program at Central Michigan University was visited by the Committee's evaluation team composed of Sayers "Bud" Miller and Al Proctor on September 27 and 28, 1978. This visitation was carried out on these unusual dates because of a postponement of a previously scheduled visit during late spring of 1978 due to the late date illness of an evaluation team member which was not the fault of this institution. After reviewing the report of the visitation team and the positive response made by Central Michigan University officials, it was recommended that the Board of Directors reapprove this educational program for another five years becoming effective June 20, 1979, at the termination of the school's one year extension of approval by the NATA.
- B. The athletic training educational program at the State University of New York at Brockport was visited by Phil Donley, the Committee's assigned evaluation officer, on May 17 and 18, 1976, and found not to meet the recommendations of the Professional Education Committee. After three years of re-evaluating the revisions made by this institution to meet the guidelines established by the Committee, the Professional Education Committee found the State University of New York at Brockport to meet all of its recommendations at its June 1978 meetings and voted to recommend that the Board of Directors approve the program. However, a late resignation by Ken Knight, the program director, caused the Committee to withhold sending this recommendation to the Board of Directors until this position has been filled by a qualified individual. During late summer, the position of program director was filled by Dorothy Cohen who meets all the requirements of the NATA Undergraduate Guidelines. Therefore, the Committee recommended that the Board of Directors approve this educational program for two years becoming effective June 20, 1979. Only a two year period of approval is requested since at that time it will have been five years from the last on-site visitation of this institution.
- C. The athletic training educational program at the University of Illinois was visited by the Committee's assigned team of Dennis Sealey and Dan Foster on March 28 and 29, 1978. After receiving the very favorable report of the visitation team and the positive response made by the University of Illinois, the Committee voted to recommend that the Board of Directors approve this excellent program. A late resignation by Dana Gearhart, the program director, caused the Committee to withhold sending this recommendation to the Board of Directors at its last June meeting until the position of program director had been filled by a qualified individual. Since that meeting, the position was filled during the late summer months by David Jerabek who meets all the requirements and standards of the NATA Undergraduate Guidelines. Consequently, the Committee recommended that the Board of Directors approve the University of Illinois athletic training educational program for five years becoming effective June 20, 1979.
- D. The athletic training education program at Grand Valley State College was visited by the Committee's assigned evaluation team composed of Ron Sendre and Steve Risinger on April 27 and 28, 1978. After reviewing the evaluation team's report and the response made by the Grand Valley State College, the Professional Education Committee found this institution to meet all the standards of the NATA's Undergraduate Guidelines with the exception for the number of students per qualified supervisor (certified athletic trainer). Therefore, it was recommended that another certified athletic trainer be hired and added to the athletic training staff before final consideration could be given to this program. For this reason the Committee withheld any recommendation to the Board of Directors concerning the approval of this program at its June meeting. Since this meeting, the additional athletic training staff position has been created at this institution. Therefore, it was recommended that the Board of Directors approve this educational program for five years becoming effective June 20, 1979.
- E. Both Washington State University and Ball State University were recommended by the Professional Education Committee to be placed on probation for one year and these recommendations were approved by the Board of Directors at the NATA Annual Meeting, June, 1979. Both institutions made presentations at the midyear meeting of the Professional Education Committee in Nashville, Tennessee on January 6, 1979, indicating their compliance to the Committee's recommendations and requirements. Therefore, it was recommended that the Board of Directors remove the probationary status placed upon these schools and approve both of these educational programs for five years becoming effective on June 20, 1979.

V.

Proposal to Rescind the Board of Directors Action of Placing Three Athletic Training Educational Programs on Probation

In reviewing the action taken by the NATA's Board of Directors at their meeting in Las Vegas on June 10-15, 1978, in which they placed Western Illinois University, Indiana State University (Graduate level program), and Louisiana State University on probationary status for one year, the

Professional Education Committee unanimously disagreed with the Board on its action taken in regards to these three athletic training educational programs. Therefore, it is recommended that the Board of Directors immediately rescind its action of placing these three educational programs on probation and grant approval effective June 15, 1978 for all three schools based upon the following reasons:

- A. The action taken by the Board of Directors was not based on any of our established NATA Undergraduate and Graduate Guidelines.
- B. None of the three institutions were given notice of the reasons for the action to be taken and a chance to respond to them. In other words they were considered guilty without a chance to present their cases.

VI. Athletic Training Educational Programs to be Evaluated and/or Visited for NATA Approval by the Committee's June 1979 Meeting

The following athletic training educational programs will either be evaluated or reevaluated by the Professional Education Committee prior to our Committee meeting at the NATA's Annual Meeting in St. Louis, June, 1979. If any District Director has any concerns or questions in regards to one or more of the following schools, please contact one of the members of the assigned evaluation team and notify that person of your concerns:

- California State University at Fullerton (Reapproval)
Evaluation Team: Gary Delforge, Chief Officer; Lou Osternig
- California State University at Northridge (Reapproval)
Evaluation Team: Gary Delforge, Chief Officer; Lou Osternig
- East Carolina University (Reapproval)
Evaluation Team: Jack Redgren, Chief Officer; Bud Miller
- Eastern Illinois University (Reapproval)
Evaluation Team: Ron Sendre, Chief Officer; John Schrader
- University of Iowa (reapproval)
Evaluation Team: Ron Sendre, Chief Officer; Glen Snow
- Slippery Rock State College (Reapproval)
Evaluation Team: Joanne Dolcemaschio, Chief Officer; Joe Godek
- Sam Houston State University (Initial Approval)
Visitation completed Spring, 1978 and to be reevaluated by the Committee.
- Bowling Green State University (Initial Approval)
Visitation completed Spring, 1978 and to be reevaluated by the Committee.
- University of Vermont (Initial Approval)
Evaluation Team: Joanne Dolcemaschio, Chief Officer; Joe Godek
- University of South Carolina (Initial Approval)
Evaluation Team: Al Proctor, Chief Officer; Glen Snow
- Southwest Missouri State University (Initial Approval)
Evaluation Team: Jack Redgren, Chief Officer; John Schrader
- Oregon State University (On Probation)
Progress report to be presented at the Committee's June, 1979 meeting.
- Texas Christian University (On Probation)
Progress report to be presented at the Committee's June 1979 meeting.
- North Dakota University (On Probation)
Progress report to be presented at the Committee's June 1979 meeting.
- Appalachian State University (On Probation)
Progress report to be presented at the Committee's June 1979 meeting.
- Self-evaluation materials and the evaluation reports on completed visitations will be reviewed by the Committee members and noted violations and recommendations will be submitted to Paul Zeek or Gary Delforge prior to February 15, 1979. Schools on probation will not be reviewed by the Committee until in-person presentations have been completed at the Committee's June meetings in St. Louis.

VII. Review of the 1978 Annual Reports Received from NATA Approved Athletic Training Educational Programs

Review of the 1978 Annual Reports will be completed by the members of the Professional Education Committee by March 1, 1979. All noted violations, concerns, recommendations and questions about one or more of these programs will be submitted to Sayers "Bud" Miller prior to the aforementioned deadline.

VIII. Study of Curriculum Graduates

Joanne Dolcemaschio reported that the 1978 survey on the status of curriculum graduates indicated very little difference in the data obtained in the 1977 survey. These statistics may be alarming to those individuals looking at these figures for the first time. The Committee felt that there are too many factors and variables whose effect are unknown or unexplainable in relation to data collected. More information is needed but some is unobtainable at this time. In addition, we have not been able to obtain similar data on the other routes leading to certification including the number of apprenticeship students obtaining athletic training positions. The Committee will continue to carry out this survey and Joanne will look into how the NATA computer service can be of assistance in this matter. Joanne also reported that she had not received any certification examination results from the Certification Committee since obtaining the June, 1977 results. This problem has been reported to the Certification Committee and Rod Moore has promised to correct the situation.

IX. Experimental Education Programs

Status reports on the high school faculty instructional programs in athletic training were presented by the University of Northwestern and the State of North Carolina's Department of Public Instruction. The Committee recommended to the NATA Board of Directors that both of these programs be approved for another year. In addition, the Committee reminded the Board that they will have to take appropriate action for the 1979 graduates from the Northwestern University program to gain NATA membership and be accepted to take the certification exam. If this program is reapproved, then both the Membership Committee and Certification Committee should be specifically notified of the action taken. Since there will not be any graduates from the State of North Carolina program in 1979, this action will not be necessary for this program.

No other requests for NATA approval of other similar programs have been received. It is felt that the stringent NATA guidelines established for this type of educational program has discouraged anyone considering the implementation of anything but a quality high school faculty instructional program. Few institutions are willing to take the effort or the gamble on a year to year basis for approval that our present two programs have taken.

X. Report on the Professional Preparation Conference

Approximately 150 persons attended the 1979 Professional Preparation Conference held at the Opryland Hotel in Nashville, Tennessee. Evaluators of the conference gave both the topics covered and the speakers for this program an excellent rating. Final financial accounting for the conference is incomplete with some expenses still to be paid.

The sale of the Proceedings of the 1978 Professional Preparation Conference has reached approximately the 300 mark in sales.

The 1980 Professional Preparation Conference will be held at the Opryland Hotel, Nashville, Tennessee during the first week of January. Lou Osternig and Gary Delforge will also be carrying out a study to determine if a second 1980 Professional Preparation Conference could be carried out in the west at a different time of the year than the Nashville Conference and the Annual Meeting.

XI. Plans for the Continuing Education Workshops to be Held at the NATA Annual Meeting in St. Louis

Plans have been developed to present four three-hour workshops on Sunday, June 16, 1979, prior to the NATA Annual Meeting to be held at St. Louis. One workshop will be a limited anatomy session concerned with the dissection of shoulder, ankle and elbow and presented by Dr. Van Yeager. A second workshop will cover the topic of "Common Hand Injuries" and the presenter will be Dr. Barry Gaines. Dr. Burdge will cover "Common Adolescence Injuries" in a third presentation. Other workshop topics include eye trauma and baseball injuries. All lecturers will be from the St. Louis area. The workshop fee still remains \$10.00.

XII. Short Term Courses

After studying the lack of interest in obtaining NATA approval of short term courses and the minimal income obtained from the application forms, the Committee felt that NATA short term course approval procedures should be dropped from our Committee's activities. This recommendation will be forwarded to the Board for approval.

XIII. Accreditation

After reviewing the most recent letters from Dr. Chambers representing COPA (see Appendix A), the Committee felt that we should continue to strive to obtain accreditation from COPA. However, at the same time, Sayers "Bud" Miller will investigate the possibilities of obtaining national recognition as an accrediting agency through the American Medical Association. In the meantime, we will continue to utilize our present approval procedures.

XIV. Program Director's Role in Regards to Administering the Certification Examination

The Professional Education Committee discussed the role of the program director in administering the certification examination. It was agreed that program directors should not volunteer or be used in evaluating the oral/practical portion of the certification examination. However, program directors could organize the facilities and the administration of the exam if their school is selected as a site for offering the certification examination. This will help eliminate any criticism that program directors have knowledge of what is on the certification examination and are teaching their students according to the exam.

XV. Continuing Education

Jack Redgren indicated that the NATA's Mandatory Continuing Education Program had gone into effect on January 1, 1979, and information about this program, especially the mechanics had been sent out to the certified membership. However, the Committee felt this one mailing would not suffice in explaining this program and would need reinforcement. Therefore, Jack will prepare an article to be published in the 1979 Spring issue of *Athletic Training*. In addition, he will also provide all Committee members with the appropriate materials so that each can take time at district meetings to explain the mechanics of the program and answer any questions.

In further discussion, Jack explained that the district director is to report to him all of the officers in his or her district so that they may receive the appropriate continuing education units for their service. This must be reported each year. National committee chairmen are also required to report their committee membership each year. Individual district officers and committee members will not be responsible for reporting this information.

XVI. Revision of Undergraduate and Graduate Curriculum Guidelines

In reviewing the *Guidelines for Development and Implementation of NATA Approved Undergraduate Athletic Training Education Programs*, the Professional Education Committee felt that the following revisions needed to be made in the guidelines in order to keep up with what is actually happening in the fields of athletic training education and health and physical education where most of our educational programs are housed:

- A. Section II, Item B5 on Page 8 entitled *Teaching Credentials* - only the second sentence needs revision.

Present reading:

Undergraduate athletic training education programs must require completion of all requirements for a teaching certificate as a condition of NATA approval.

2. Proposed revision:

Undergraduate athletic training education programs must insure the availability of all coursework which provides their students with the opportunity to meet requirements for a teaching certificate.

3. Reasoning:

Many departments and colleges of health and physical education

are offering their students the opportunity to complete either a teaching degree or non-teaching degree since many of their students are not able to locate teaching positions and a greater emphasis is being placed upon community positions. Students enrolled in athletic training educational programs where the departments and colleges of health and physical education offer both teaching and non-teaching tracks may find themselves in a dilemma. A portion of these students will discover during their junior and senior year student teaching practicums that they do not want to teach and transfer into the non-teaching track. These students, many very good athletic trainers, may graduate from the athletic training curriculum but not qualify to take the certification exam and will drop by the way side. In California, all students desiring to obtain a teaching credential in any subject area must complete a fifth year after graduation. These students are not qualified to take the certification examination upon graduation and not qualified to take an athletic training position. This rewording of this section of the Guidelines will alleviate this problem.

- B. Section II, Item C1c on Page 10 entitled *Program Director* needs only the first sentence of the second paragraph revised. This revised sentence should read as follows:

The Program Director must be a member of the teaching faculty of the university as defined by the university sponsoring the program.

The previous sentence stated that the Program Director must hold the rank of instructor. This rank of instructor means many different things at the institutions across the nation. At some universities the rank of instructor is the start of the tenure track and the athletic trainer must meet the publication and research requirements of the school and may have had to obtain a doctorate degree within a required time limit. Since only a few certified athletic trainers hold a doctorate degree and have the time to carry out research, it would rule the type of person that we would want in the position of Program Director. At other universities the rank of instructor would not qualify the Program Director to be a member of the teaching faculty. In this situation the Program Director has very little or no authority in administering and revising the educational program. He or she wouldn't have a vote on any item of business concerned with their program. Revision of this sentence would require that the Program Director still be a member of the teaching faculty but within the definition of faculty rank established by the university.

- C. Section II, Item G1 on Page 19 entitled *Clinical Experience - General Requirements* - only the second sentence of the first paragraph needs revision.

1. Present reading:

The undergraduate athletic training education program shall include a minimum of 600 clock hours of clinical experience under the direct supervision of a qualified clinical instructor.

2. Proposed reading would only change the 600 clock hours to 800 clock hours.

3. Reasoning:

Most athletic training curriculums are already requiring at least 800 clock hours of clinical experience. Most of the program directors and the Professional Education Committee feel that the clinical experience requirement must be increased so that the students have adequate time to develop skill competencies.

XVII. Revision of the Visitation and Revisitation Procedures and Guidelines

In an effort to reduce frequent duplication of effort and to alleviate the burden of preparing for visitations, which take approximately one school year, both for the institution and the Professional Education Committee, the Committee felt that the schools offering both graduate and undergraduate educational programs in athletic training should have their reevaluations for NATA approval combined into one visitation date for both programs. It is recommended that the next evaluation of the following schools offering both graduate and undergraduate programs should be carried out next during the spring of the following years:

- A. University of Oregon - 1981
- B. Indiana State University - 1982
- C. Indiana University - 1983

This plan will help spread out the Committee's visitations and not overload the work load of any one committee member.

XVIII. Proposed Plan for Improving Communications Between the Professional Education Committee and the Board of Directors

The Professional Education Committee has developed the following proposed plan for improving communications between the Committee and the Board of Directors in the approval of athletic training educational programs:

- A. The Professional Education Committee will notify the Board of Directors of the schools seeking initial approval or reapproval by the NATA of their athletic training educational programs in their Midyear Report.
- B. The Board of Directors will notify the Professional Education Committee of its concerns, questions, etc., about one or more of the schools seeking NATA approval prior to the visitation of the school (approximately March 1st).
- C. The Professional Education Committee will carry out its evaluation of the schools seeking NATA approval. Late developing questions and concerns of the Board can be handled until the Committee's visitation report is sent back to the school for response.
- D. The Professional Education Committee and the Board of Directors will evaluate the schools based upon the Committee's report and the schools response. Any late developing concerns after the evaluation period has been completed will instigate a new probe into this concern. The school will be notified of the concern. If their response and the Committee's findings are not satisfactory, the school could be placed upon probation even if their program had been approved three weeks prior to this action being taken.

In addition, the Professional Education Committee feels that the following

procedure should be developed in handling Committee proposals that are not accepted by the Board of Directors:

- A. Committee makes recommendations to the Board.
- B. Those proposals not accepted by the Board are returned to the Committee with the reasons for not being accepted. Sometimes the denial of acceptance may simply have been a case of poor wording or an unclear explanation rather than a difference in philosophy.
- C. If the proposal can be revised adequately or a more lucid explanation can be provided the proposal will be returned by the Committee to the Board for final action.

XIX. Committee Recommendations for a Joint Project Between the American Academy of Orthopedics and the NATA in Utilizing the Academy's Grant of \$16,000.

The Professional Education Committee would like to see part of this money used to finance an initial meeting of a "Task Force" comprised of representatives from the NATA (selected members of the Professional Education Committee, Public Relations Committee, and other appropriate committees), American Orthopedic Society for Sports Medicine, National Federation of High School Associations, and other interested and appropriate groups (school superintendents, school boards, P.T.A.'s, etc.) which would address itself to the promotion of athletic trainers at the secondary level.

This group would develop the various models for establishing an athletic training educational program and the position of athletic trainer at the secondary level including the full-time athletic trainer, teacher-trainer, athletic trainer for school district, the high school faculty instructional program in professionally preparing members of the present staff, etc., models. These models of effective athletic training programs at the secondary level would be developed to serve as the basic elements of a comprehensive promotional program.

The group would then seek out the best approaches of placing this promotional program before the public and other appropriate groups such as athletic directors, high school principals, school superintendents, school boards, and P.T.A.'s. These promotional efforts could include (1) development of brochures and audiovisual aids, (2) consultant services to high schools and/or districts desiring to establish athletic training programs, and (3) establishment of a speakers bureau including a list of speakers available to speak at local, regional, or national meetings of athletic directors, high school principals, school superintendents, and school boards regarding the implementation of athletic training programs. It is felt that we must carry our message directly to the high school administrators and those to whom they are responsible. In any event, it would seem that a cooperative effort among interested professional groups would be a desirable way to go.

SUMMARY OF THE PROFESSIONAL EDUCATION COMMITTEE'S REQUESTS FOR ACTION TO BE TAKEN BY THE NATA BOARD OF DIRECTORS JANUARY 1979

- I. It is recommended that the Board of Directors approve the appointment of Leon Skeie to the Professional Education Committee as the District #8 representative replacement for Gerald Bell.
- II. It is recommended that the Board of Directors approve the appointment of Dan Foster to the Professional Education Committee as the District #5 representative to the Committee.
- III. It is recommended that the Board of Directors approve the following correction of the minutes of the June, 1978 Board of Directors meetings as they appeared in the Fall (1978) issue of *Athletic Training* and have them printed in the very next issue of the NATA Journal:
 - A. The Professional Education Committee did not recommend that the athletic training educational programs offered by Western Illinois University, Louisiana State University, and Indiana State University (Graduate level) be placed on probation for one year. Actually, the Committee recommended that these three programs be approved and the Board of Directors placed these schools on probation.
 - B. In listing the schools recommended by the Committee for approval and approved by the Board of Directors, the graduate program at Indiana State University, which actually was placed upon probation, was incorrectly listed in place of the graduate program offered by Indiana University.
- IV. It is recommended that the Board of Directors reapprove the athletic training educational program at Central Michigan University for another five years becoming effective June 20, 1979, at the termination of the school's one year extension of its approval by the NATA.
- V. It is recommended that the Board of Directors approve the athletic training educational program at the State University of New York at Brockport for two years becoming effective June 20, 1979.
- VI. It is recommended that the Board of Directors approve the athletic training educational program at the University of Illinois for five years becoming effective June 20, 1979.
- VII. It is recommended that the Board of Directors approve the athletic training educational program at Grand Valley State College for five years becoming effective June 20, 1979.
- VIII. It is recommended that the Board of Directors remove the probationary status placed upon the athletic training educational programs at the Washington State University and Ball State University and approve both of these programs for five years becoming effective on June 20, 1979.
- IX. It is recommended that the Board of Directors immediately rescind its action of placing the athletic training educational programs at Western Illinois University, Indiana State University (Graduate level program), and Louisiana State University on probation and grant approval for all three schools effective June 15, 1978.
- X. It is recommended that the Board of Directors reapprove the high school faculty instructional programs in athletic training at the University of Northwestern and the State of North Carolina's Department of Public Instruction for one year becoming effective on June 20, 1979.
- XI. It is recommended that the Board of Directors approve the dropping from the Professional Education Committee's activities the approval of short term courses becoming effective immediately.
- XII. It is recommended that the Board of Directors approve the following revisions in the *Guidelines for Development and Implementation of*

NATA Approved Undergraduate Athletic Training Education Programs so that they read as follows:

- A. Section II, Item B5 on Page 8 entitled *Teaching Credentials* - second sentence:
Undergraduate athletic training education programs must insure the availability of all coursework which provides their students with the opportunity to meet requirements for a teaching certificate.
- B. Section II, Item C1c on Page 10 entitled *Program Director* - first sentence of the second paragraph:
The Program Director must be a member of the teaching faculty of the University as defined by the university sponsoring the program.
- C. Section II, Item G1 on Page 19 entitled *Clinical Experience - General Requirements* - second sentence of the first paragraph:
The undergraduate athletic training education program shall include a minimum of 800 clock hours of clinical experience under the direct supervision of a qualified clinical instructor.

- XIII. It is recommended that the Board of Directors approve the combining of the evaluations of the graduate and undergraduate programs into one on-site visitation at those schools offering both programs so that the next visitation at each school will be carried out during the spring of the following years:
 - A. University of Oregon - 1981
 - B. Indiana State University - 1982
 - C. Indiana University - 1983

- XIV. It is recommended that the Board of Directors approve the following Professional Education Committee plan for improving communications between the Committee and the Board of Directors in the approval of athletic training educational programs:
 - A. The Professional Education Committee will notify the Board of Directors of the schools seeking initial approval or reapproval by the NATA of their athletic training educational programs in their Midyear Report.
 - B. The Board of Directors will notify the Professional Education Committee of its concerns, questions, etc., about one or more of the schools seeking NATA approval prior to the visitation of the school (approximately March 1st).
 - C. The Professional Education Committee will carry out its evaluation of the schools seeking NATA approval. Late developing questions and concerns of the Board can be handled until the Committee's visitation report is sent back to the school for response.
 - D. The Professional Education Committee and the Board of Directors will evaluate the schools based upon the Committee's report and the schools response. Any late developing concerns after the evaluation period has been completed will instigate a new probe into this concern. The school will be notified of the concern. If their response and the Committee's findings are not satisfactory, the school could be placed upon probation even if their program had been approved three weeks prior to this action being taken.

- IV. It is recommended that the Board of Directors approve the following Professional Education Committee plan for handling other Committee proposals that are not accepted by the Board of Directors:
 - A. Committee makes recommendations to the Board.
 - B. Those proposals not accepted by the Board are returned to the Committee with the reasons for not being accepted. Sometimes the denial of acceptance may simply have been a case of poor wording of an unclear explanation rather than a difference in philosophy.
 - C. If the proposal can be revised adequately or a more lucid explanation can be provided the proposal will be returned by the Committee to the Board for final action.

- XVI. It is recommended that the Board of Directors approve the Professional Education Committee's proposal for utilizing the American Academy of Orthopedics grant of \$16,000. This proposal calls for this sum of money to be used to finance an initial meeting of a "Task Force" comprised of representatives from the NATA (selected members of the Professional Education Committee, Public Relations Committee, and other appropriate committees), American Orthopedic Society for Sports Medicine, National Federation of High School Associations, and other interested and appropriate groups (school superintendents, school boards, P.T.A.'s, etc.) which would address itself to the promotion of athletic trainers at the secondary level.

This group would develop the various models for establishing an athletic training educational program and the position of athletic trainer at the secondary level including the full-time athletic trainer, teacher-trainer, athletic trainer for school district, the high school faculty instructional program in professionally preparing members of the present staff, etc., models. These models of effective athletic training programs at the secondary level would be developed to serve as the basic elements of a comprehensive promotional program.

The group would then seek out the best approaches of placing this promotional program before the public and other appropriate groups such as athletic directors, high school principals, school superintendents, school boards, and P.T.A.'s. These promotional efforts could include (1) development of brochures and audiovisual aids, (2) consultant services to high schools and/or districts desiring to establish athletic training programs, and (3) establishment of a speakers bureau including a list of speakers available to speak at local, regional, or national meetings of athletic directors, high school principals, school superintendents, and school boards regarding the implementation of athletic training programs. It is felt that we must carry our message directly to the high school administrators and those to whom they are responsible. In any event, it would seem that a cooperative effort among interested professional groups would be a desirable way to go.

ACTION:

Moved by District 4, severally seconded and carried, to accept items 2 through 8 of the Committee's request.

Moved by District 2, seconded by District 8 and carried that item 9 be accepted with the amendment that probation concerning Western Illinois State and LSU was removed effective February 3, 1979, with program approval retroactive to June 15, 1978.

Moved by District 9, seconded by District 8 and carried that the Northwestern

program item 10, be approved for one year, with Districts 6 and 7 abstaining from voting.

Moved by District 10, seconded by District 2 and carried to accept the North Carolina program item 10, for one year, with Districts 6, 7 and 9 abstaining from voting.

Moved by District 6, seconded by District 7 and carried to accept items 11 through 15.

Moved by District 10, seconded by District 4 and carried to approve item 16 as stated with the addendum that the President will appoint the NATA representatives.

In other action, it was moved by District 3, seconded by District 9 that the Education Committee make Mars Hill College aware that the wording in their catalog does not constitute an approved NATA program and that it is further recommended that they advise their students already enrolled that they are not in an approved program.

Moved by District 10, seconded by District 7 that it is recommended that the Professional Education Committee review the guidelines and seek more stringent requirements for approved programs, including validation of need. Motion carried.

XIV. PUBLIC RELATIONS:

PROPOSED COMMITTEE: RICHARD L. HOOVER - CHAIRMAN

Gary Tuthill - Rams
Pepper Burroughs - Jets
Jerry Rhea - Falcons
Ron Freeman - Forest View High School, Arlington Hts., Ill.
Jeff Fair - Oklahoma State
Jack Rockwell - U.S. Sports Academy

BUDGET

Press release forms - printing - correspondence etc.	\$250.00
Informal consultation with Chicago based public relations firm	
Burston Marsteller	\$500.00
Miscellaneous	\$ 50.00

PROJECTS

Article publishing on public relations in
NATA journal
JAMA
MC and SPORTS MEDICINE
Release on membership activity
Develop 3-5 P.R., P.R. plan
Discuss public relations with recruitman, A/V, and other NATA committees.

ACTION:

Moved by District 10, seconded by District 4 and carried that Dick Hoover be approved for appointment as Committee Chairman.

Moved by District 2, seconded by District 8 and carried that the Committee as proposed by Mr. Hoover be approved.

Moved by District 2, seconded by District 10 to table the budget request until the committee comes up with a proposal to indicate how the \$500 would be expended.

XV. RESEARCH AND INJURY:

Mr. Chambers called attention to letter items (1) and (5) indicating the they were disapproved rather than approved.

With regard to the letter from John Powell concerning approval of funds, Mr. Chambers was to write to him and explain the rule that any funds, prior to expenditure, first have to obtain board approval.

XVI. AMERICAN ACADEMY OF FAMILY PHYSICIANS:

Mr. Chambers indicated that no report had been received or action requested.

XVII. AMERICAN ACADEMY OF PEDIATRICS:

January 1979
Mid-Year Report
Liaison - American Academy of Pediatrics

The semi-annual meeting of the Committee on Pediatric Aspects of Physical Education, Recreation, and Sports was held on December 9-10, 1978 in San Antonio, Texas. The agenda, list of Committee members, and list of attendees is attached. The minutes of this meeting are not yet available, however, will be submitted to the Board at a later date. (Minutes of the previous meeting are attached with certain areas of interest identified)

Your representative has, as instructed, continued to cooperate with the development of the Academy Statement "On-the-field Treatment of Athletic injuries". The Executive Committee of the Academy felt the most recent revision of the statement was too lengthy to be just that. Dr. Shaffer extracted the essential ingredients from the introduction of the original and has titled it "Injuries to Young Athletes". This revised statement will be resubmitted to the Executive Committee for approval and will be recognized as being developed with N.A.T.A. cooperation. The Committee still desires to develop the full paper into booklet or pamphlet form or be published in a Pediatric Journal. Assurance was given that the N.A.T.A. would continue to cooperate with the development of this paper.

In this regard, there has been ongoing correspondence between the Committee and the Schering Corporation regarding a symposium similar to the one held in conjunction with the Annual Meeting of the N.A.T.A. One of the proposals is that the proceedings of such a symposium be published in a suitable journal for broad circulation with reprints distributed to Academy members.

Miss Pauline Hess, President of the National Cheerleaders Association, was present as a liaison representative to request the Committee to develop a statement regarding the needs and health care of the cheerleader. After due course and discussion the Committee developed the following statement.

Cheerleading, when properly conducted, is part of the athletic scene. Participants are entitled to the same safeguards as other athletes. These include proper conditioning, adequate practice area, competent coaching, proper equipment and medical supervision.

Miss Hess expressed a desire to include the athletic trainer as a program participant in the next annual meeting. In addition, it was pointed out that Lan Barnes (Physician and Sports Medicine) will be doing an article on cheerleading.

A copy of "How to Establish a Chapter Sports Medicine Committee" is attached. The Committee would, very much, like to see the state chapters develop committees on sports medicine. Dr. Flynn has drawn up these guidelines and has mentioned the use or cooperation of the athletic trainer in each of the sections. It is important that the athletic trainer make this contact and take advantage of the cooperation this group can effect in local legislative matters.

Your representative requested the Committee to draft a letter of support for the concept of licensure for athletic trainers to be forwarded to the President of the N.A.T.A. Bill Chambers. Significant discussion ensued on the type of support given to this proposal at this time. Dr. McLeod (Kentucky) supported the request however, the majority of the Committee was concerned with the position of physical therapists as in-

dividuals and as a group. This caused them to be wary of full and open support at this time. The consensus was, after the members were polled, that the Committee would reaffirm the statement in the A.A.P. publication *School Health: A Guide for the Health Professions* which cites the need for a certified athletic trainer in every interscholastic athletic program. In addition, the Committee would recommend that the Chapter support the licensure efforts of the athletic trainer in those states where it seems appropriate. Two things seem apparent. The first is that the importance of developing contact with the state Chapter is emphasized. The second is that it would seem the Committee would have been more likely to take a stronger position if it could have been demonstrated that the recommendation of the A.P.T.A. task force would be supportive of licensure for the athletic trainer. (Similar caution was evident in the proposal to establish liaison with the A.S.T.M. and with NOCSAE. The discussion centered around the possibility of potential liability in any action brought against either of these two organizations and its members. The Committee decided to refer this to the National office before action is taken.)

It is recommended that the N.A.T.A. continue liaison with the A.A.P., cooperate with joint projects, and seek increased support for our licensure efforts.

Respectfully submitted,

Richard F. Malacrea, A.T., C.

ACTION

Moved by District 6, seconded by District 9 and carried that the report be accepted.

Moved by District 8, seconded by District 10 and carried to continue liaison with A.A.P.

XVIII. AMERICAN ALLIANCE FOR HEALTH, PHYSICAL EDUCATION AND RECREATION:

NATA LIAISON REPORT

Sayers "Bud" Miller

NATA Liaison Representative

Since my last report, there has been very little activity concerned with the field of athletic training. One accomplishment has been the establishment of an athletic training column in the AAHPER's Journal with Sam Keggereis, A.T.C., West Virginia University, serving as the editor of this column. I would encourage the NATA membership to make contributions to this column.

The merger of two athletic training councils within the AAHPER has not been accomplished. The NASPE Council (Joe Godek, Chief Officer) and NAGWS Council (Marge Albohm, Chief Officer) have not met for more than a year. During late October, officers of the NASPE and the NAGWS met in Washington, D.C. and discussed the athletic training councils and their future directions. I had requested that the two associations continue to work towards a joint athletic training council. In response to my request, I was told that my request was discussed and it was felt that the needs and concerns of women athletic trainers are different from male athletic trainers which required separate councils. They did mention that the two groups plan to pursue several joint projects together.

In a recent conversation with Joe Godek I discussed this matter with him. At that time he stated that he had not had any contact with the NAGWS Athletic Training Council or the officers of the NASPE concerning future joint projects or meetings. The only request that he had from Ross Merrick, the NASPE Executive Director, was to organize and develop an athletic training program to be presented at the AAHPER National Convention. I have not been able to contact Marge Albohm on this matter.

I feel that the Board of Directors should request both Joe Godek, the NATA representative on the NASPE Athletic Training Council, and Marge Albohm, the NATA liaison to the NAGWS, report directly to the Board concerning the need for two athletic training councils in the AAHPER since the needs and concerns of women athletic trainers are different from men athletic trainers if this matter is still a concern of the Board. In the past, the Board of Directors had indicated to me their concern over this matter.

Attached you will find a copy of a letter that I received from Ross Merrick concerning this matter.

SJM: bg

ACTION:

Moved by District 3, seconded by District 9 and carried that the report be accepted with a letter by the President to both Joe Godek and Marge Albohm that they are to report directly to the Board concerning need for an athletic training program in the AAHPER.

XIX. AMERICAN COLLEGE HEALTH ASSOCIATION:

No report received, did not meet, will meet in April. No action required at this time.

XX. AMERICAN COLLEGE OF SPORTS MEDICINE:

Moved by District 8, seconded by District 9 and carried that the NATA continue its liaison with the ACSM.

The Board briefly discussed the proposed co-sponsorship by this organization with the NATA in 1980, with it being moved by District 3, seconded by District 6 and carried that Mr. Ken Knight work with this group as to the exact obligations to be undergone by NATA in relation to this sponsorship and that a further report be made to the Board at its June meeting.

XXI. AMERICAN CORRECTIVE THERAPY ASSOCIATION:

Moved by District 3, seconded by District 9 and carried to disapprove suggestion that members of the American Corrective Therapy Association would be welcome to all NATA meetings. By showing their membership card they would be required to pay only the registration fee of a member of the NATA. The same would be true for NATA members attending ACTA meetings.

Moved by District 9, seconded by District 2 and carried to continue relationship with the ACTA because of the common goals and problems of both organizations.

Moved by District 6, seconded by District 8 and carried that the President select someone to act as NATA representative to the July 1979 meeting of the ACTA.

XXII. AMERICAN PHYSICAL THERAPY ASSOCIATION:

Mr. Chambers called attention to his last update concerning the activities of this group, its forthcoming meeting to be held at San Francisco, indicating that as soon as this meeting had been held that a further report would be prepared and submitted. Attention was likewise called to the liaison report of Mr. Frank George of June 1978, with it being moved by District 2, seconded by District 9 and carried that the report be accepted.

XXIII. JOINT COMMISSION ON COMPETITIVE SAFEGUARDS AND MEDICAL ASPECTS OF SPORTS:

Attention was called to the Las Vegas and San Francisco reports.

Moved by District 4, seconded by District 9 to accept the Las Vegas report. Motion carried

Moved by District 10, seconded by District 2 to accept the San Francisco report. Motion carried

Copies of these two reports can be obtained by writing to:

Mr. Roy Don Wilson, Athletic Department
University of Southwestern Louisiana
Lafayette, Indiana 70504

XXIV. NATIONAL ASSOCIATION FOR GIRLS AND WOMEN IN SPORTS:

Moved by District 5, seconded by District 6 and carried that the Board reject the request for a thousand dollars or adequate computer time in relation to analysis of a survey developed by the Athletic Training Council of this organization.

XXV. NATIONAL ASSOCIATION OF COLLEGE DIRECTORS OF ATHLETICS:

Mr. Davis indicated that the annual meeting of this group had been held in June of 1978 and that the NATA had no representation. It was moved by District 4, seconded by District 8 and carried that Mr. Young be approved as liaison to this group.

XXVI. NATIONAL ASSOCIATION OF INTERCOLLEGIATE ATHLETICS:

No formal report submitted as the group will meet later in the year.

XXVII. NATIONAL COLLEGIATE ATHLETIC ASSOCIATION FOOTBALL RULES COMMITTEE:

Attention was called to the preliminary report of Warren Morris, with the Board, by official action, then accepting the report as information.

XXVIII. NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS:

Attention was called to the open letter to Sports Illustrated and the data concerning the 1978-79 National Federation Sports Participation Survey. There being no report for consideration the board then continued with other agenda items.

XXIX. NATIONAL HEAD AND NECK INJURY REGISTRY:

Attention was called to the letter from Dr. Torg requesting continuance of NATA participation. Moved by District 1, seconded by District 4 and carried that NATA continue its participation with this group.

XXX. NATIONAL OPERATING COMMITTEE ON STANDARDS FOR ATHLETIC EQUIPMENT (NOCSAE):

Attention was called to the list of approved helmets as released and the letter from Robert C. White, NATA representative to this group. There being no specific requests, it was moved by District 1, seconded by District 4 and carried that the report be accepted.

XXXI. UNITED STATES OLYMPIC COMMITTEE:

A lengthy discussion concerning the present frustrations and state of events concerning the USOC ensued, with the following actions then being approved:

Moved by District 9, seconded by District 8 to suspend application of Article 18 of the Bylaws until June, pending formal action, this suspension to become effective February 4, 1979. Motion carried

Moved by District 6, seconded by District 9 that application of Section 4 of the Code of Ethics be suspended until June, pending formal action, this to be effective as of February 4, 1979. Motion carried

Moved by District 9, seconded by District 3 and carried that Pan Am and Olympic Policy No. 3 be suspended until June pending formal action, this action likewise to be effective February 4, 1979.

XXXII. COMMENT ON ARTICLE BY DR. MARSHALL:

The material as furnished was accepted as information by the Board, with no comment being indicated.

XXXIII. SPORTS SAFETY AND HEALTH CARE SOCIETY:

Upon recommendation of Mr. Miller, it was moved by District 4, seconded by District 7 and carried to continue liaison activity with this society, with District 2 abstaining from voting.

XXXIV. REQUEST TO SELL SHIRTS AT CONVENTION:

Following a brief discussion concerning this request, it was moved by District 4, seconded by District 2 and carried to deny the request to sell T-shirts at the convention with District 8 abstaining from voting.

XXXV. ACE'S COMMISSION ON COLLEGIATE ATHLETICS:

Moved by District 9, seconded by District 8 that the NATA continue to send a certified trainer to the council's meetings when requested. Motion carried.

XXXVI. NATIONAL GYMNASTICS CATASTROPHIC INJURY STUDY REPORT:

Moved by District 4, seconded by District 9 and carried that the NATA does not, at this time, wish to be a cosponsor in this project because of it not being clear in the minds of the Board as to which direction the study is proceeding and the Board is not certain of the objectives and involvement of the Nisson Company.

XXXVII. PROPOSAL FOR MANAGEMENT AND ACCOUNTING SERVICES FOR NATA:

Attention was called to this proposal of offering management and accounting services to the NATA for the sum of \$125 per month. Following discussion by Mr. Davis as to the advantages of this services, it was moved by District 3, seconded by District 9 and carried to accept the proposal with Districts 2 and 4 abstaining from voting.

XXXVIII. CLEARING HOUSE FOR INFORMATION TO WOMEN INTERESTED IN ATHLETIC TRAINING:

Moved by District 10, seconded by District 9 and carried that Marge Albohm act as the clearing person in relation to women interested in athletic training, with Districts 2, 3, 7 and 8 abstaining from voting.

XXXIX. CONSTITUTIONAL CHANGES:

Moved by District 3, seconded by District 8 and carried that the proposed constitutional changes be accepted for presentation to the membership as per the present guidelines. There being no further business, at 1:50 o'clock a.m., the meeting was adjourned sine die...

Schering

The game can be lost here

If just one or two athlete's foot or jock itch infections are left untreated, they can spread fast. In the locker room...in the shower, these fungus infections can spread like an epidemic and can impair team performance.

TINACTIN kills the fungi that cause both athlete's foot and jock itch infections. Prompt relief of itching, burning, and soreness means prompt return to action.

TINACTIN is preferred by professionals—it is recommended by more athletic trainers, physicians, and pharmacists than any other

antifungal agent. TINACTIN helps keep athletes where they belong—in action.

Tinactin[®] for athlete's foot and jock itch

Available in drugstores in cream, solution, powder and powder aerosol forms.



Relief for track aches and field pains!

161

Cramer counterirritants help relieve the pain of sprains, strains, and sore muscles or joints. They also extend the effects of whirlpool, heat lamp, or hot towels. And they are popular warmup or pre-activity rubs. Order Cramer analgesic products from your sporting goods dealer.

*Cramer cares.
About you and your athletes.*

