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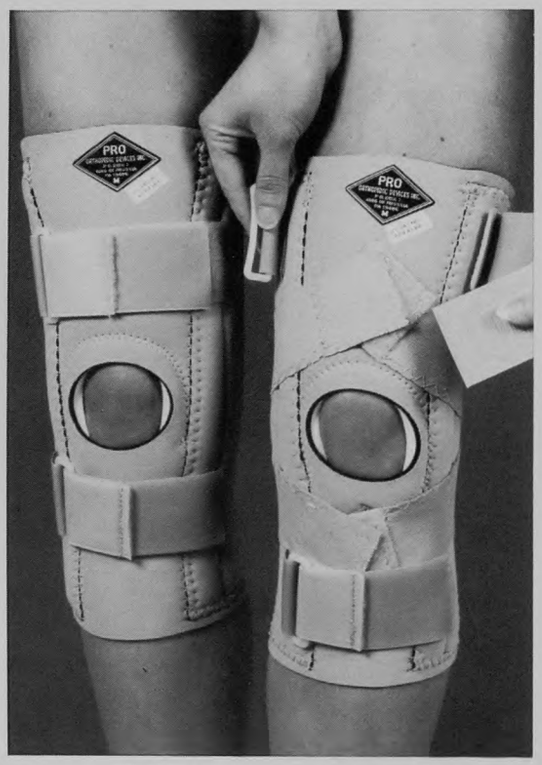

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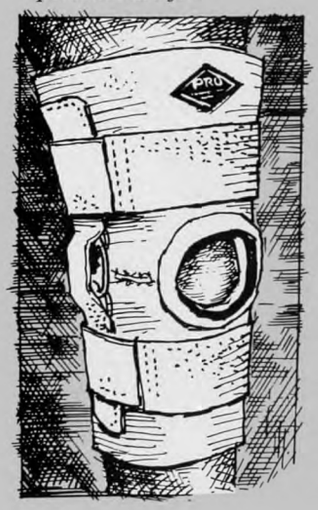

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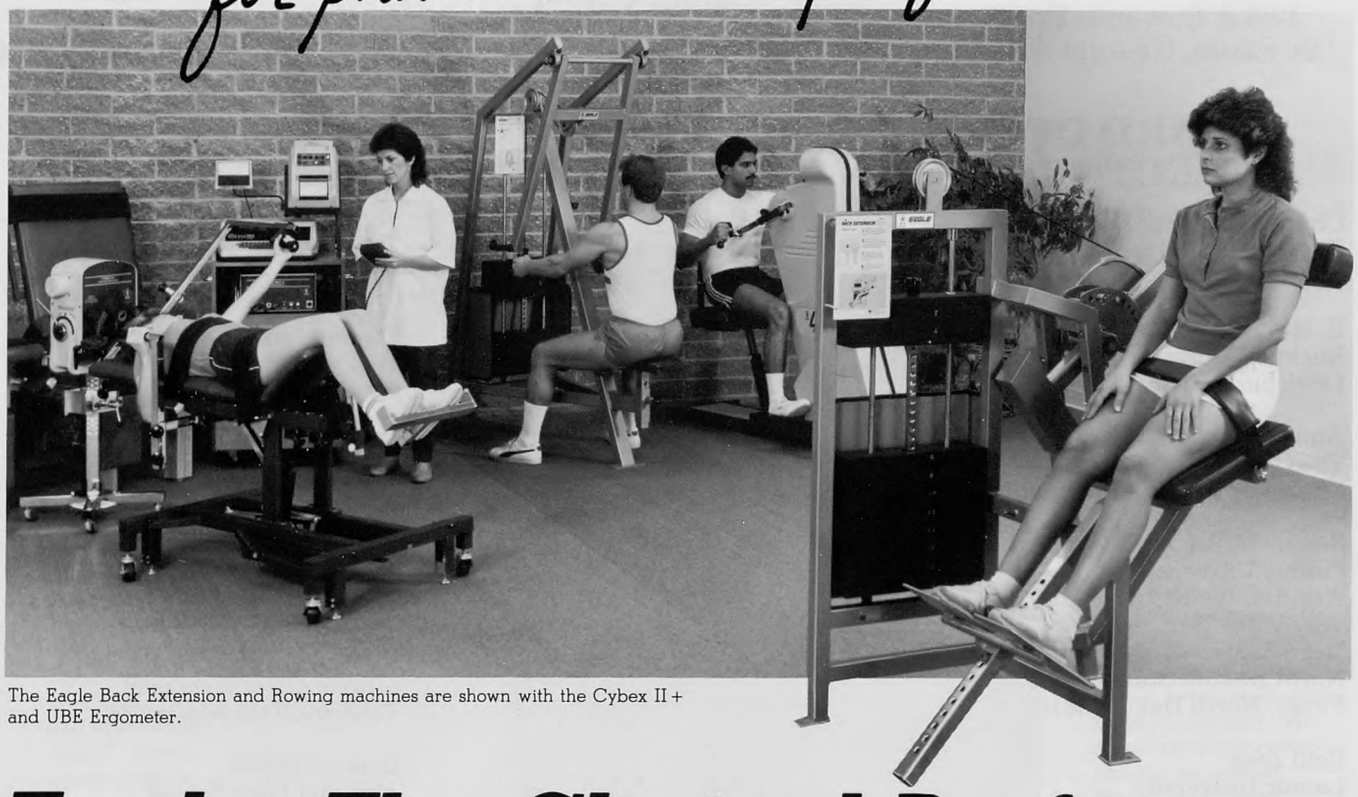

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COLUMBUS OHIO

Tentative Schedule
1987 NATA, INC. CLINICAL SYMPOSIUM & WORKSHOP
OHIO CENTER, COLUMBUS, OHIO
June 14-17, 1987

Sunday, June 14, 1987

PRE-CONVENTION WORKSHOP - 9:00 a.m. - 12:00 Noon

1. 4th Annual AOSSM Workshop
   Hand & Wrist Injuries in Athletics
2. Drugs & Sports
   Professional Football Trainers Association
3. Face & Dental Problems in Athletics

SCHERING SYMPOSIUM - 2:00 - 5:00 p.m.

Internal Injuries in Athletes

Monday, June 15, 1987	Session 1	Session 2
8:45 a.m.	OPENING REMARKS	
9:00 a.m.	Anabolic Steroids RICHARD STRAUSS, MD	
9:45 a.m.	Keynote Address You Are Here . . . Because KENT FALB, ATC	
10:30 a.m.	VISIT EXHIBITS	
11:00 a.m.	NATIONAL BUSINESS MEETING	
1:00 p.m.	LUNCH	
2:00 - 4:00 p.m.	Panel on Knee Injuries The ACL Dilemma MICHAEL C. KOLCZUM, MD JAMES R. ANDREWS, MD JOHN A. BERGFIELD, MD WILLIAM G. CLANCY, MD TAB BLACKBURN, ATC/LPT	Sexually Transmitted Diseases BILL GOETTEL, PhD 2:00 p.m. Strength Training for Today's Athletes DAN WATHAM, ATC 3:00 p.m.
4:00 p.m.	VISIT EXHIBITS	
4:30 p.m.	DISTRICT MEETINGS	

Tuesday, June 16, 1987	Session 1	Session 2
8:30 - 10:30 p.m.	Panel on Organic Illness JOHN LOMBARDO, MD WILLIAM MOATS, MD DOUGLAS McKEAG, MD	Maximizing Performance Through Nutrition KEITH WHEELER, MD 8:30 a.m. Flexibility RICHARD DOMINQUEZ, MD 9:15 a.m. Radiological Aspects of Sports Medicine GEORGE BELHOBEK, MD 10:00 a.m.
10:30 a.m.	VISIT EXHIBITS	
11:00 a.m.	Psychology of Sport JACK LLEWELLYN	Knee Braces Functional & Prophylactic ED NOWALKOWSKI KEN RUSCHE ATC/LPT
12:00 Noon	LUNCH	
1:00 p.m. - 3:00 p.m.	Panel on Drugs & Drug Testing ROBERT MURPHY, MD	Free Communications 1:00 - 4:30 p.m.
3:00 p.m.	VISIT EXHIBITS	
3:30 p.m.	Panel on Participation with the Absence of a Paired Organ DELPHOS RICHARDSON, MD SKIP VOSLER, ATC GERALD MOLLICA, LLD	
4:30 p.m.	Dermtological Problems in Athletics JAMES HAMILTON, MD	

Wednesday, June 17, 1987

9:00 a.m.	NOCSAE Update and the Maintenance of Athletic Equipment RICK QUINN
9:45 a.m.	Expectations of Athletic Trainers by the Administration & Expectations of Administrations by the Athletic Trainer WILLIAM F. STIER, PhD
10:30 a.m.	Licensure Update ED CROWLEY, ATC
11:00 a.m.	Baltimore - 1988

President's Message

Dear Members:

Let's go to Columbus! It looks like many of us are. Fred Hoover tells me the advance registration looks great. The exhibitors continue to support us as they always have. We need to support them by visiting their booths in Columbus. Clincial sessions will be adjacent to the exhibit area.

Your Board of Directors met in February for the mid-winter meeting. Three things have a high priority for their consideration in June. The first is the possible purchase of land in Texas for investment; the second is the possible move of the National Office from Greenville; and the third is establishing our own Hall of Fame.

At the February meeting your Board of Directors voted to pursue the purchase of land with existing building in Grand Prairie, Texas, just six miles from DFW Airport. This is the site of the Texas Sports Hall of Fame that has been for sale for about one year. The Board agreed that because of the deflated real estate market in Texas this would be an excellent purchase. At this writing (April 1, 1987) there was still no response from Texas to our offer. Brooks McIntyre and Otho Davis did a great deal of investigative research on real estate values and projections, and both feel this is a wise investment that we can afford and that will be a moneymaker for NATA.

Also at the mid-winter meeting, proposals were heard from District 9 (Birmingham, Alabama) and District 6 (DFW Metroplex, Texas). Neither proposal was accepted at that time. Since the February Board meeting, five of our districts have had their annual district meetings and have discussed their feelings toward moving our National Office. Hopefully, by the time our Board of Directors leaves Columbus, we will have a clearer direction of where and when a move would be initiated.

Hats off to John LeGear and the network of 200-plus athletic trainers who continue to carry our message through the Public Relations campaign. Also a large vote of thanks to John Powell and Bill Edwards of San Diego State University for the work they did on our NATA Injury Survey. However, the real heroes were the athletic trainers from the 105 high schools who gathered all the data. The press conference in New York City to announce the results of our survey was a monumental moment for NATA. Today we are better recognized for our leadership in the area of sports injury management.

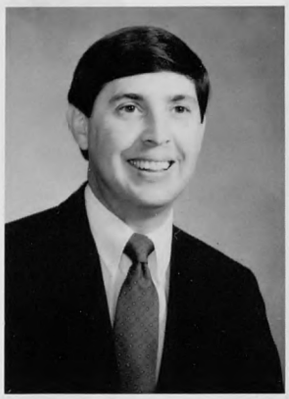
Each of us has the privilege and the responsibility to promote ourselves and our profession. We should be proud of ourselves and our Association. Remember, we were the first sports medicine specialists years ago — I believe we're still the best!

See you in Columbus.

Jerry

Jerry Rhea
President

Editor-in-Chief Comments



Steve Yates, ATC, M.Ed
Wake Forest University
Winston-Salem, NC 27109

Another year has come and gone, and the National Athletic Trainers' Association is getting stronger by the day. Our organization has gone through an identification transformation due to the fine efforts of John LeGear, our Executive Director, President, Board of Directors, and you, the membership. Public awareness of our profession is being realized everyday thanks to the incredible media blitz. Let us keep up the good work and eventually excellent health care will be commonplace rather than the exception.

Manuscripts

The Journal is finally reaping the rewards of the concerted effort to solicit quality written material. There are presently forty (40) manuscripts in committee for possible publication in the Journal. Thank you, but the Editorial Board would like to have even more.

Closing

I wish to thank my entire Journal staff for their good work this past year. If you agree, and see a committee member at the 1987 Symposium, let them know how you feel. I expect to see many of you in Columbus to renew old friendships and to discuss the future of the Journal. Have a pleasant summer.

SY (SSSA)

Letters to the Editor-in-Chief

Dear Steve,

As you know the NATA is continually upgrading and changing the certification examination. Once again there is a need for our membership to submit multiple choice test questions to our question bank.

I would appreciate it very much if you could publish a request in the next edition of the Journal, asking anyone in our organization who is interested in submitting questions for the written section of our exam.

Anyone interested in contributing to the construction of our exam should drop me a line or call, and I will forward them a question writing packet.

My address is:

Maria Hutsick
Chairperson, Written Exam
NATA Board of Certification
Boston University
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Boston, MA 02215
(617) 353-2746

continued on page 156

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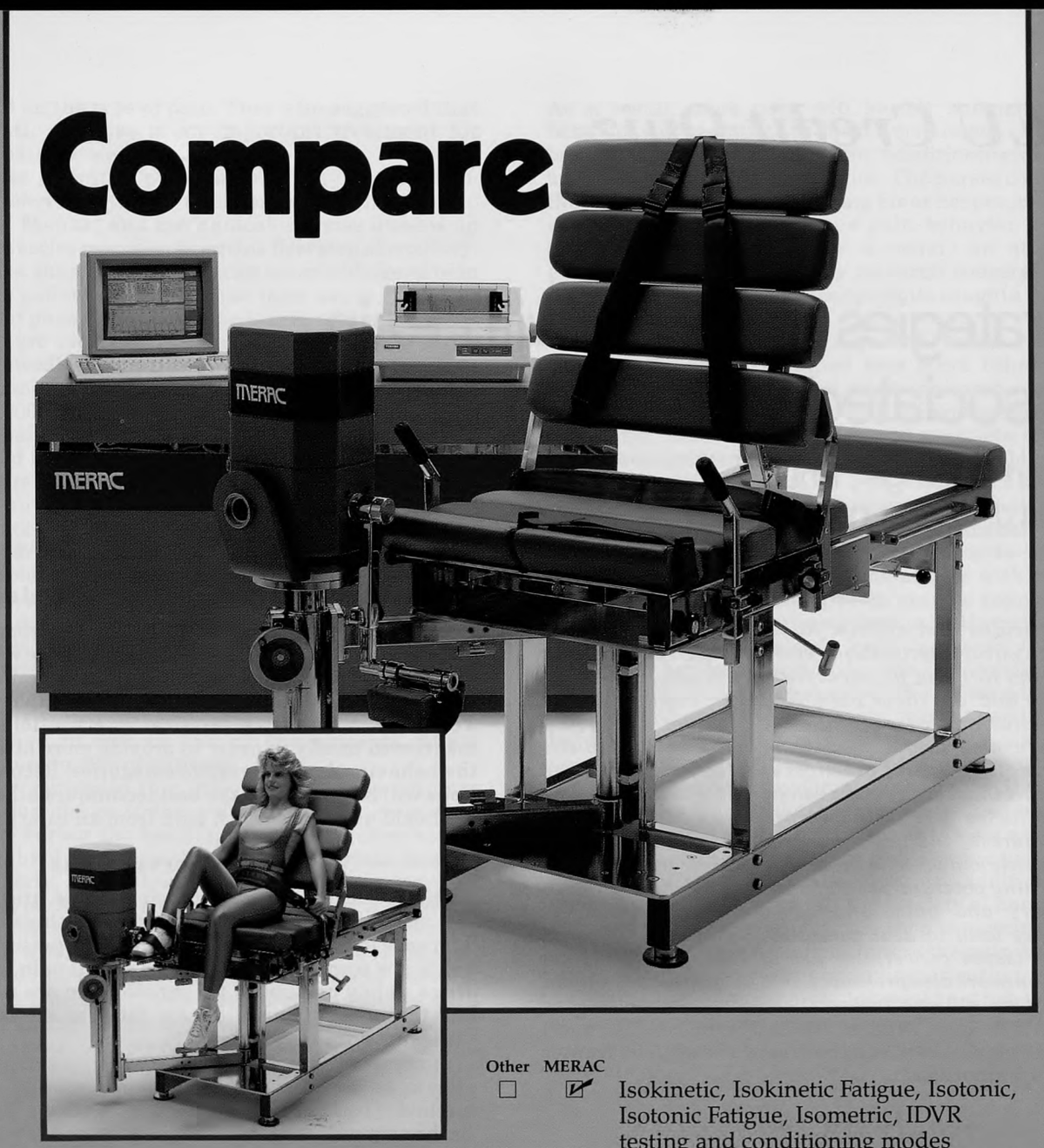

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Strategies to Cope with Pain Associated with Sport-Related Injuries

Robert N. Singer, PhD
Paula J. Johnson, MS

Abstract

Physicians and athletic trainers have traditionally used physical interventions such as drugs, surgery and the many forms of physical therapy to help athletes to tolerate and/or relieve pain. However, there are many behavioral and/or cognitive intervention techniques that are also useful in dealing with pain. Athletic trainers often become practical sport psychologists due to the fact that they spend a considerable amount of time with athletes when athletes are away from coaches, under duress, and quite vulnerable to speak candidly. This article will provide the athletic trainer with insights concerning potential psychological reactions of athletes to injury and pain, and various psychological approaches used to deal with such athletes. Moral and ethical issues concerning use of these psychological techniques are also presented. Not all techniques should be used by athletic trainers, and those that are used must not be used in some situations, as consideration must be given to the capabilities of the athletic trainer and each situation.

Introduction

There is a need for understanding psychological factors associated with injury and what can be done to help athletes deal with the discomfort associated with perceived pain. Approaches to influence pain threshold and tolerance can be grouped into three categories of intervention: physical, behavioral, and cognitive. Physicians and athletic trainers generally use physical intervention strategies are available as well. These could complement or take the place of physical interventions, depending on circumstances. Athletes vary in their ability and willingness to tolerate pain. This results in a challenge for athletic trainers in determining whether an athlete is ready to return to practice and competition. Diagnostic decisions could be based on psychological and physiological analyses of each athlete. Likewise, a determination of the most appropriate intervention strategies could be made from these analyses.

Robert N. Singer is Professor of Sport Psychology in the Movement Science and Physical Education Department at Florida State University, Tallahassee.

Paula J. Johnson received an M.S. in Sport Psychology in the Department.

Coping Strategies to Influence Tolerance

It is assumed that readers of *Athletic Training* already have adequate knowledge of, and experience with, most physical interventions, but lack detailed information concerning behavioral and cognitive interventions. Therefore, most of the physical interventions will be mentioned briefly in order to provide more attention to the behavioral and cognitive categories. Recommendations will be given as to the best techniques athletes can or should use to cope with pain from an injury.

Physical Interventions

Physical interventions, at their extreme, are probably the most drastic ways to alter pain threshold and tolerance in order to cope with pain. The prescription of drugs is a common approach for initial pain, but most drugs widely prescribed for chronic pain are addicting. For this reason, pain clinics tend to advocate the withdrawal from all drugs (21).

Surgery is the most complex and serious treatment. It should be avoided if there is some equally effective method of treatment. However, in some cases, it seems to be the only way to correct the cause of, or one's ability to cope with, pain.

Another means of physically adapting to pain is physical therapy, of which there are many forms. The superficial heating techniques consist of infrared radiation, whirlpool, hot packs, moist air, and melted paraffin. The deep heating forms involve short wave diathermy, microwave and ultrasound. Ultraviolet is another category. Electrical modalities include galvanism, iontophoresis, electrical stimulation and electrical testing.

Cold treatments include cold packs, vapor coolant sprays, ice massage and extremity immersion bath. Yet another method is traction which consists of manual cervical, motorized cervical, and motorized pelvic. Other popular treatments in physical therapy that do not belong in the above categories are contrast baths, combined ultrasound and electrical stimulation, trigger point therapy, combined moist heat and electrical stimulation, manual and mechanical exercise, and massage.

One of the more recent forms of physical therapy is electrical stimulation which interrupts pain nerve messages. Some of these devices are transcutaneous (across the skin) and some are implanted under the skin. Hendler and Fenton (21) claimed that these devices helped 40% of the patients who tried them, but success

depended on the type of pain. They also suggested that therapeutic exercise is an important treatment for chronic pain patients.

Exercise in initial pain patients may be contraindicated where partial or total rest is the first step to recovery. Manual and mechanical exercise loosens up spastic muscles resulting from this first step of recovery. Otherwise, the muscle spasms can cause additional pain when the patient attempts to use them again.

Another physical intervention is acupuncture. Briefly, acupuncture uses a body chart of trigger points and a series of needles. These needles are twisted or twirled in a certain manner at the trigger points, of which there are about 1,000 known. Depending on the disease and the chronic pain location, a different number of needles will be twisted in different trigger points in the body. Some needles are left in the trigger points over a period of time, twirled anywhere from 10 to 20 minutes and then removed (21,23).

Not as drastic as drugs, surgery, or electrical stimulation (implants), acupuncture was once scoffed at by Western scientists. However, recent evidence has created a more widespread interest in this approach (9,20,28,31). Dowson et al. (9) reported that acupuncture had a real therapeutic effect of 20% over a placebo. An analysis of the literature by Lewith and Machin (28) supported their hypothesis, which assumed that real acupuncture would be effective in 60% to 75% of the patients, sham acupuncture in 30% of patients.

It is recommended that athletes with acute pain use prescription drugs if the pain absolutely cannot be tolerated during the healing phase. Addiction to the drugs probably will not occur unless the athlete does not rest properly, thus allowing the pain to turn into the chronic type. Surgery should not be considered for acute pain unless the acute pain is the result of a serious accident where natural healing would not happen properly without surgery. The many forms of physical therapy are definitely recommended for athletes with chronic pain but not for those with acute pain where rest is the answer. As previously stated, readers should already be aware of such techniques. Acupuncture can be used by athletes with acute or chronic pain, but not all insurance companies have yet recognized its legitimacy.

Behavioral Interventions

The second category of intervention is behavioral, i.e., to change behavior. While the ultimate goal is to decrease or end the patient's pain, behavioral interventions attempt to modify the behavior to pain, which is said to be learned. Because the pain has modified the patient's behavior, which affects everything he or she does, the behavior is re-altered (unlearned) so that the pain is no longer the focus of the patient's life.

So far the only behavioral techniques recognized in pain intervention are related to operant conditioning theory. Made famous by the prominent psychologist, B.F. Skinner, operant conditioning basically refers to the rewarding of desirable behavior and punishing of undesirable behavior. This is most effective when an outsider provides reward or punishment to a person in order to modify behavior, rather than the patient changing behavior by himself or herself.

An example of the operant conditioning process occurs frequently in hospitals. A patient is lying quietly in a hospital room being ignored by busy nurses. He/she begins to feel lonely and miserable, and the pain feels worse. A cry for the nurse results in immediate attention. The pain behavior (crying for help) has been reinforced positively and is more likely to occur again in the future. As a result, more pain will be felt and more pain behavior will be emitted the next time companionship or medication is desired. Operant conditioning could be used to modify the pain behavior. The nurses could give the patient attention by praising his or her progress and, at the same time, ignore the pain behavior when it appears that such behavior is merely an attention-getting device (36). The only research concerning the operant approach strongly supports its usage in treating chronic pain patients (13).

A major criticism of this approach, however, is that operant therapists commited to a strict behaviorism often ignore the mental and emotional processes with pain (40). A second criticism is that in order for it to be successful, family and friends as well as athletic trainers, must be committed to this process, which could become difficult over time.

The behavioral strategy of operant conditioning should be used by athletes with chronic pain only if they understand its complexity and are willing to abide by the procedures. For example, the athlete with chronic pain sitting in the training room may be enjoying the attention he/she is receiving from athletic trainers. In other words, the athlete's pain behavior is being reinforced by the attention he/she is receiving, thus encouraging continued behavior. The informed athletic trainer or physician would apply operant conditioning by delaying with the athlete when it is his or her appointment time. When the appointment has ended, the athletic trainer would immediately consult with the next athlete. The athletic trainer may appear to be "cold" or indifferent to the athlete, but this is necessary in order for the athlete to learn that chronic pain is not rewarded with further attention. In addition, this procedure is continued at the athlete's home. The patient's family and friends are taught operant conditioning principles and told to ignore the pain behavior which has been previously receiving attention.

Operant conditioning probably would not help athletes with acute pain because they have not yet learned "pain behavior," which is unlearned through operant conditioning.

Cognitive Intervention

The third category of interventions is *cognitive* in nature. Some of these methods of increasing pain threshold and tolerance center the effort primarily within the person experiencing the pain. The others involve someone other than the patient trying to increase pain threshold or tolerance.

The first method is simply to offer information, i.e., to help a person define a situation in preparation for potentially threatening events. The goal is to decrease pain by decreasing anxiety about an uncertain situation. Research by Straub and Kellet (38) has demonstrated the effectiveness of this approach. In the athlete's situation, he/she should be informed about how the injury is causing pain and the exact procedures for injury rehabilitation and pain relief. A second method related to the first is to inform the person about what sensations may be felt. This also reduces uncertainty, anxiety, and ultimately, pain. An extension of the idea that having information about an anticipated experience can reduce anxiety is that perceiving the ability to have control over unpleasant sensation will increase the person's tolerance for it (30).

Ball and Volger (2) found that most persons preferred shocking themselves to passively awaiting to receive random shock. Along the same line of thought, Levendusky and Pankratz (27) reported that having control

over pain is more effective than taking pain medication. Further support was indicated by Averill (1) as to the value of personal control over adverse stimuli in reducing stress, and thus pain.

Electroencephalogram (EEG) biofeedback training has recently gained much popularity as a method of pain control. It serves several functions, some previously discussed: awareness of the event, voluntary control over the feedback, transfer or generalization of that control from the training site to other areas of one's life, and self perceived progress (23). In fact, the EEG biofeedback has demonstrated changes in attention, concentration, and arousal associated with anxiety (12,29). Furthermore, increasing one type of brain wave known as alpha waves through the use of the EEG has revealed a decrease in attention to the pain, anxiety, and general arousal, resulting in a decrease in the perception of pain (16,34). However, research indicates that biofeedback alone does not always work (10,24,40). When biofeedback is used in conjunction with relaxation training, coping with pain is more successful (14,24). Athletic trainers and physicans can learn how to use this method of pain control.

Another approach to increasing pain tolerance is the use of distraction, which basically is refocusing attention away from pain to something else. A number of dentists use music headphones and video screens with their patients in order to distract the patient's attention. Research is contradictory, however, indicating that the refocusing approach does (25) and does not increase pain tolerance (41).

Attentional control and focus are similar to distraction, and have been shown to be of value in coping with pain (6,8,33). Increase in attention relates to increased tension, which in turn relates to increased pain (33). When one learns how to control and focus attention away from pain, unpleasant feelings can be diminished.

Hypnosis has been accepted and used for a long time by psychotherapists, but it is new to the field of pain research and relief. As with biofeedback, distraction and attention control, and focus, hypnosis helps the patient focus attention away from pain. Key elements in hypnosis are the instructor's ability to establish rapport with the patient and to induce physical relaxation and hypnotic suggestion. A number of studies have found hypnosis to increase tolerance and threshold for experimental pain (4,18,26,32). Yet clinical research on the use of hypnosis for pain has been sparse, and the methodology has been suspect (11,17,37,40).

Another cognitive coping strategy, imagery rehearsal, is similar to hypnosis in that both train patients to imagine pleasant scenes in order to relax the mind and then the body. This enjoyable experience suppresses pain perception as the patient is absorbed in mental imagery of relaxing scenes such as a sunny beach or snowy mountain. The underlying mechanism seems to be the refocusing of attention away from pain to something unrelated to pain. In fact, several studies have reported imagery strategies to be effective in increasing pain tolerance (5,7,8,19,40).

The last coping strategy to be discussed is group therapy. This form of treatment is usually conducted by a psychologist or a psychiatrist with patients attending a pain clinic. Group therapy sessions could be established in schools for athletes by such individuals or athletic trainers with group therapy skills. The theme of such sessions would be how to deal with an injury. The purpose of group therapy is to provide patients or athletes with the opportunity to express their feelings and concerns, and to hear others express similar attitudes. This allows them to realize they are not alone. Group therapy also offers mutual support, affiliation, peer modeling, interaction with others, and the ability to learn and test adaptive behaviors (3,15,22,37,42).

A major function of group therapy with athletes is to help patients understand themselves better. Are they optimistic that the pain will decrease as healing progresses? If so, the pain is understood to be temporary and can be tolerated more easily. If not, does the athlete want the pain to stop? The athlete, without realizing it, may invite the pain, thinking that it is the only way, or a good excuse to, avoid participation in the sport. Research involving clinical pain patients and group therapy indicates considerable increase in pain tolerance (15,22).

Perhaps the first strategies athletes with either acute or chronic types of pain should try are the cognitve intervention ones. They do not have the side effects of drugs, the potential dangers of surgery, the rehabilitation required after surgery, the complexity of behavioral strategies, or the uncertainty of acupuncture. Two underlying features of the cognitive strategies are diverting attention away from pain and teaching a perception of personal control over pain to the patient. An athletic trainer can influence the athlete's pain tolerance in a positive manner by offering information about uncertain procedures and sensations, and the choice of (perceived control over) possible ways to cope with pain. Biofeedback, hypnosis, and visual imagery are recommended for athletes with acute and chronic pain because research generally supports their effectiveness. However, the ethical issues involved in such practices must be addressed.

Moral and Ethical Issues

There are moral and ethical issues that must be considered if and when specific coping strategies are taught to athletes. First and foremost, should anyone be allowed to offer these techniques to athletes with pain? Our suggestion is that such methods as biofeedback, hypnosis, visual imagery, and group therapy should be offered only be qualified individuals. They can be misused, causing further injury and pain. A case in point is if the athlete is guided away from perceiving meaningful distress signals and then to compete while blocking these signals. Further injury may occur. Coaches, athletic trainers, and even parents can be taught the value of simply providing information to the athlete in an attempt to decrease uncertainty and increase pain tolerance. However, they must understand the nature of the injury before any attempt is made to distract attention away from feelings of pain.

Another issue is whether or not athletes should be taught cognitive strategies which refocus attention away from pain. Much depends upon the type of pain and the intentions of the athlete. The athlete with acute pain may need to keep the injured body part from moving or to move it under regulated control. Cognitive strategies can be used to cope with pain during this inactivity. If there is intention to use them in order to participate in sports in spite of acute pain, then the qualified instructor must not teach these strategies to the athlete. Otherwise, this could worsen the situation. The instructor (sport psychologist, athletic trainer, or whoever) needs to determine the athlete's honest intentions. In regard to athletes with chronic pain where the experience of pain is indefinitely ending, it is never unethical or immoral to teach cognitive coping methods, whether or not the athlete is still participating in sports.

Athletes vary considerably in their motives, expectations, and fears associated with competition. Oftentimes such personal characteristics are well-concealed. It is

usually through a number of experiences with an athlete over time and careful observations of his/her behavior that the physician, athletic trainer, coach, or sport psychologist can gain greater insights and understanding. Consider the following cases.

Competitor X may possess a strong will to win, to achieve, to excel. This athlete will perform with injury, and has probably developed the ability to alter his/her state of consciousness to block out any perception of pain. A severe limp may disappear during competition, only to reappear when the contest is over. The intense drive to compete and do well negates physical disadvantages that would render the typical competitor virtually helpless.

Competitor Y, on the other hand, may have a dreadful fear of losing, of looking bad. This athlete may need excuses not to perform unless feeling perfectly ready. He/she may compete, but is ready to offer an injury-related apology for an inadequate performance. This, of course, is an ego defense approach.

Competitor X can potentially make matters much worse by provoking an injury after blocking out important pain signals. This athlete should be monitored carefully and needs to be taught to be more conservative and less reckless, to be more attentive to the body's warning signals. Competitor Y needs psychological counseling as to how to approach competition. The fears developed through the years have created anxieties and insecurities, and a perceived need to either find a reason to withdraw from tough competition or to be prepared to rationalize a loss. Competitor Y could then benefit from learning pain coping strategies, especially when a medical clearance to compete has been issued.

As we can see from these simplified cases, and with a realization of the complexities of individual athletes and their personalities, the athletic trainer has to frequently play the role of a sport psychologist (35). To this point, a few athletic trainers at Florida State University have enrolled in recent years in our sport psychology courses. One is in the process of obtaining his masters degree in this field.

In exceptional cases, an athlete might have to be referred to a psychologist or a psychiatrist. It is the well-informed and sensitive athletic trainer who not only draws from a wealth of medical knowledge and techniques, but who can also use psychological approaches to diagnose and to help to rehabilitate athletes.

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continued at end of Quiz

CEU Credit Quiz

STRATEGIES TO COPE WITH PAIN ASSOCIATED WITH SPORT-RELATED INJURIES

Robert N. Singer, PhD
Paula J. Johnson, MS

As an organization accredited for continuing medical education, the Hahnemann Medical College and Hospital certifies that this continuing education offering meets the criteria for .3 hours of prescribed CEU credit in the program of the National Athletic Trainers' Association, Inc., provided the test is used and completed as designed.

To participate in this program, read the material carefully and answer the questions in the test. Mark the answers you select by placing an X in the proper square. Then tear out the test sheet, fill in your name, address and other information, and mail with $12 for processing to: Hahnemann University, School of Continuing Education, Broad and Vine, Philadelphia, PA 19102.

The NATA National Office will be notified of all members with passing scores over 70%. CEU credit will be issued to each member's record at that time. Participation is confidential.

Questions	a	b	c	d	e
1. Iontophoresis is a _____ for the treatment of pain. a. chemical modality b. surgical procedure c. electrical modality d. none of the above					
2. Electrical stimulation is a form of physical therapy which a. interrupts pain nerve messages. b. may be implanted under the skin. c. is effective regardless of the type of pain. d. a and b above e. all of the above					
3. Acupuncture is effective for the treatment of chronic pain, only. a. True b. False					
4. Which of the following statements is/are true regarding operant conditioning? a. It is the only behavioral technique recognized in pain intervention. b. It is most effective when the patient punishes him/herself for undesirable behavior. c. It is effective for treating acute or chronic pain. d. a and b above e. all of the above					
5. The goal of cognitive intervention is to decrease pain by decreasing anxiety about an uncertain situation. a. True b. False					
6. Increasing brain alpha waves with the use of EEG biofeedback causes a decrease in a. attention to the pain. b. anxiety. c. general arousal. d. a and b above e. all of the above					

	a	b	c	d	e
7. There is little difference in effectiveness when EEG biofeedback is used alone or in conjunction with relaxation training. a. True b. False					
8. Which of the following techniques helps the patient focus attention away from pain: 1. imagery rehearsal 2. hypnosis 3. biofeedback 4. attentional control a. 1,2,3 b. 1,3 c. 2,4 d. 4 only e. 1,2,3,4					
9. An athletic trainer can influence the athlete's pain intolerance in a positive manner by offering a. information about uncertain procedures and sensations. b. a choice of possible ways to cope with pain. c. both a and b above d. all of the above					
10. In some cases, cognitive strategies for dealing with pain may cause the athlete to incur further injury. a. True b. False					

FOR CREDIT, form must reach Hahnemann University by September 15, 1987

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If you are interested in submitting an article to be used in the Journal quiz please contact Don Kaverman. All authors of published articles will receive 1.0 CEU.

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ANSWERS TO PREVIOUS CEU CREDIT QUIZ

"A Biomechanical Approach to the Management of Chronic Lower Extremity Pathologies as They Relate to Excessive Pronation"

1.	d	7.	a
2.	c	8.	e
3.	a	9.	b
4.	a	10.	c
5.	b	11.	e
6.	e	12.	d

Abstracts of 1987 National Convention Free Communications Papers

The following abstracts have been selected for presentation during the Free Communications Session of the National Convention and Clinical Symposium in Columbus, Ohio from 1:00 to 5:00 pm on June 16th in the Franklin Room. We appreciate the efforts of Russ Cagle and his committee for expediting their work and providing this information to us in time for publication.

Unhealthy Weight Loss Practices in High School Wrestlers

Winterstein AP, Landry GL, Troxel RK: Univ. of Wisconsin, Madison 53706

51 high school wrestlers from 7 teams in western Oregon participated in a weight loss habits survey during the 1985-86 season. The survey showed a high incidence of rapid weight loss through fasting and dehydration. In preparation for competition during the season, 86.2% of all respondents lost an average of 3-4 lbs. in one week or less. 45% routinely went 12 hours without food intake and 64.5% have at one time practiced fluid deprivation, with 26.2% withholding fluids for greater than 6 hours. Despite the guidelines released by the American College of Sports Medicine in 1976 regarding unhealthy weight loss practices in wrestlers, results of this survey showed that unsafe weight loss habits are still prevalent in the sport in Oregon. Increased distribution of weight loss information to coaches and athletes in conjunction with necessary rule changes is essential to further discourage such habits.

Relationship Among Calcium Intake, Secondary Amenorrhea in Female College Cross Country/Track Athletes

Doyle R: Lantz Training Room, Eastern Illinois Univ., Charleston 61920

This study was designed to examine the relationship between calcium intake and stress fractures in female college cross country/track athletes. A secondary purpose was to investigate the relationship between the development of secondary amenorrhea and stress fractures within the same population.

Twenty-five female college cross country/track athletes who sustained a stress fracture were paired with athletes who competed in similar events from the same school but did not sustain a stress fracture. A food frequency questionnaire was used to obtain and measure calcium intake of subjects. Data concerning participants' running and menstrual history were obtained from a second questionnaire included with the food frequency survey.

Descriptive statistics on the demographic information showed a statistically significant difference between calcium intake of the stress fracture group and the non stress fracture group. Multiple regression analysis revealed a statistical relationship between seven of the nine independent variables and the development of stress fractures in female college cross country/track athletes. The relative odds of a female college cross country/track athlete with low calcium intake developing a stress fracture was 6.68 times greater than the athlete who met the individual RDA for calcium. The subjects who developed secondary amenorrhea had a 2.19 times greater chance of developing a stress fracture than those subjects who did not suffer from secondary amenorrhea.

Rehabilitation After Arthroscopic Meniscectomy of the Knee: Influence of Age

Kovaleski J, Craig BW, Costill DL, Habansky AJ, Matchett LJ: Knollwood Sports Medicine Center, Knollwood Park Hospital, Mobile, AL 36609

In an effort to examine thigh muscle strength following partial arthroscopic meniscectomy, 24 occasionally or recreationally active patients were divided into Group 1 (age > 20 yr), Group 2 (age 24-45), and Group 3 (age > 50 yr). The specific objectives of this investigation were to: 1) quantitate the strength and function of the thigh musculature before, during, and after isokinetic rehabilitation; and 2) determine whether age influences the time of recovery and release from active rehabilitation.

Standard arthroscopic portals were used under general anesthesia and tourniquet control. No statistical significance existed for tourniquet time between groups ($P < 0.05$). Patients with degenerative joint changes identified at surgery were included. Those with associated cruciate ligament tears were excluded from study.

Maximal voluntary isokinetic contractions (MVKC) were performed in Rehab 3 times/wk at 60, 120, 180, 240, and 300 deg/sec, with release from rehab when quadriceps torque achieved 85% recovery of the non-surgical leg. MVKC testing was performed once/wk. No significant difference existed between the 3 groups in the time between surgery and the start of the 1st test or for the weeks to release from rehab. On the average, quadricep strength was 50% less than the non-surgical leg when measured at the initial Cybex test. MVKC measured as ft-lbs of torque for Group 1 at the 60 deg/sec speed showed the surgical leg weaker ($P < 0.001$) at the initial test (74.9 ± 13.4 vs. 139.8 ± 12.7) and at release from rehab (116.1 ± 9.8 vs. 130.0 ± 11.2). Torque measured at the other 4 speeds reached non-significance by either the 2nd or 3rd wk of rehab, with release at 2.9 wks. MVKC for Groups 2 and 3 showed the surgical leg significantly weaker at the initial test and after wk 1 of rehab for the 5 testing speeds ($P < 0.05$), with 85% strength return by 3.4 wks.

Findings indicate if the symptoms are of a mechanical nature and if the patient is physically active, then good/excellent results from the arthroscopic menscectomy can be expected despite age and the presence of degenerative joint changes.

Assessment of Calf Blood Flow During and Following Immersion in Cold Water at Various Therapeutic Temperatures

Bell GW, Bomkamp BJ: Sports Injuries Research, Univ. of Illinois, Urbana 61801

The purpose of this study was, first, to test the cold induced vasodilation theory in the calf utilizing impedance plethysmography, a non-invasive method. Second, to determine what, if any, differences occur

between calf blood flows during and following 20 minutes immersion in water at 6, 10 and 15 degrees centigrade.

Blood flow changes were measured prior to, during, and following immersion for 20 minutes of the left leg to the knee in water at 6, 10, 15 degrees C. Six male subjects participated in the study, age range 21-35, mean 26. Each subject took part in 3 sessions separated by 72 hours. Each session consisted of measures taken at one of the water temperatures. All blood flow measures were taken on the dependent leg of the seated subject following 5 min rest, each 5 min of the 20 min treatment immersion time, immediately following immersion and 5 min for 20 min post-immersion.

Mean blood flow measures were tested against the corresponding time intervals between all temperatures using both calf blood flow (ml/min) and calf blood volume/pulse (ml/100ml/min.) Kruskal-Wallis test was used for one-way analysis of variance with a probability level of $p < .05$.

No significant differences in blood flow were found between the three temperature conditions during the pre-immersion, immersion, or post-immersion periods. Blood flow remained steady throughout the 20 minute period and was lowest in the 20 minute mark of treatment. There was no increase in blood flow at any of the temperatures; neither during immersion nor during the 20 minute post-immersion period. Blood flow rose immediately with the post-immersion measurement but at the 20 minute mark the blood flow was either below or equal to the immediate post-immersion measure.

This data indicates that the treatment of musculoskeletal injuries during rehab with cold may be failing to promote healing or actually retarding it by decreasing the blood flow. This data also indicates that for immediate care, immersion in water cooled to 15 degrees C(60°F) is as effective as 10 degrees C(50°F) or 6 degrees C(40°F).This data is valid only at the gravity dependent calf.

Vascular Adjustments to Cold Water Immersion of the Forearm

Grant JD, Fish DR, Whieldon TJ, Pendergast DR: Hamilton College, Athletic Department, Hamilton College, Clinton, NY 13323 and Physical Therapy and Physiology Depts, SUNY Buffalo 14214

The purpose of this study was to examine the vascular adjustments to cryotherapy treatment of the forearm after four pre-treatment conditions: 1) normal core temperature (passive heating); 3) at reduced (about 1° C) core temperature (passive cooling); 4) after 30 minutes of core temperature (passive cooling): 4) after 30 minutes of stationary cycling at 125 watts (+ about 1° C; exercise). Following each pre-treatment, the right forearms of nine normal males aged 20-25 years were immersed in cold (13° C) water for thirty minutes. Total blood flow at the immersed forearm was measured by mercury strain gauge plethysmography. Skin temperature and heat flux were measured bilaterally at forearms, at five minute intervals for 30 minutes before, during, and after immersion. Data were analyzed by a multivariate analysis of variance for repeated measures and Newman-Keuls tests.

Results showed that mean blood flow to the treated forearm decreased significantly ($p < .05$) during the first five minutes of immersion, (i.e., from 2.0 to less than 1.0 ml/min) and remained decreased for the remaining 25 minutes of immersion regardless of the pre-treatment condition. Thirty minutes after immersion ended, blood flow to the immersed forearm remained significantly lower than the pre-treatment level for all pre-treatment conditions except passive cooling, in which case blood flow was already reduced prior to immersion.

No cutaneous vasodilation was found at the forearm during or after cold water immersion. Thus, this treatment is ineffective for the goal of increasing local blood flow (contra interpretations after Lewis, 1930). The prolonged reduction in total forearm blood flow and cutaneous vasoconstriction indicate that some major effects of cold water immersion extend at least 30 minutes beyond the treatment period. Measurement of vascular adjustments well past 30 minutes post-treatment is warranted.

Determination of Blood Flow to the Human Calf During and Following the Application of Therapeutic Modalities

Baker RJ, Bell GW: Sports Injuries Research, Univ. of Illinois, Urbana 61801

Local blood flow to the calves of nine human subjects during the application of four therapeutic modalities was estimated using impedance, plethysmography. Ice massage, ice pack, ultrasound, hot pack, ice massage and ultrasound, and hot pack and ultrasound were the therapeutic modalities compared. The changes in blood flow related to these modalities were compared on the basis of cardiac output (ml/100 ml/min). It was found that ice massage significantly increased blood flow to the human calf when compared to the control data and a 20 minute ice pack application. The increase in blood flow related to the ice massage was sustained longer following application when compared to a 20 minute hot pack treatment. Ultrasound was found to significantly increase blood flow to the human calf. However, the use of ice massage or hot pack prior to the ultrasound treatment did not significantly increase the effect on blood flow over ultrasound alone. ANOVA and student t-tests were used to evaluate the data at the $p < .05$ significance level.

Effect of Prior Physical Activity on Skin Surface Temperature Response of the Ankle During and After a 30-Minute Ice Pack Application

Mancuso D, Knight KL: Sports Injury Research Lab, Indiana State Univ., Terre Haute 47809

The effects of various durations of treadmill running on ankle skin temperature response during and after subsequent ice application was investigated. Ankle skin surface temperature of 12 male subjects was measured with a telethermister (YSI Model 44) during three conditions. The two exercise conditions involved treadmill running for 15 or 30 minutes, followed by a 30 minute ice pack application, and a 90 minute rewarming period. A control condition involved no exercise prior to ice pack application. Each subject was tested under all three conditions utilizing a balanced Latin Square design.

Ankle skin temperature was significantly increased during 15 and 30 minutes of exercise, although there was no difference between the two conditions. Mean skin cooling temperatures were slightly, though insignificantly, higher following exercise than following no exercise. The rate of cooling, however, was unaffected by prior exercise. Mean skin rewarming temperatures were significantly higher following the exercise conditions, but the rate of rewarming was unchanged by exercise.

Mean rewarming temperatures remained slightly higher following 30 minutes of exercise than following 15 minutes of exercise.

Longer ice applications or shorter time periods between reapplications of ice may be necessary following exercise of 15 minutes or more in duration. Investigation of the effects of reapplication of ice on skin temperature is necessary to substantiate this.

EMG Response of the Leg Muscles to Lateral Postural Perturbation: Implications For Ankle Sprain

Andersen JC, Brunt D, Semmer DS, Goddard SD: School of Physical Therapy, Texas Woman's Univ., Houston TX, Arco, MN 56113

The purpose of this study was to investigate the EMG response of the leg musculature to lateral postural perturbation in normal subjects (n=8). Surface EMG was obtained bilaterally from the peroneus longus (PL) and tibialis anterior (TA) muscles. The subjects stood sideways on an electrically driven platform that provided a perturbation of upright posture. Subjects underwent 16 trials with the platform at 0% grade and 16 trials at 10% declined grade. The trials were randomly presented to place either the right or left leg in a stressed position, i.e. the foot being forced into inversion and plantarflexion. The contralateral foot moved into eversion. Mean response latencies were visually determined by using an interactive graphics monitor.

The results indicated both medium (ML) and long-latency (LL) bilateral PL responses across all positions. At 0%, ML and LL responses were seen at 74±4ms and 109±5ms respectively for the stressed limb. Contralateral limb responses were seen at 74±5ms and 115±5ms. At 10%, ML and LL responses were noted at 80±4ms and 116±4ms respectively for the stressed limb. Contralateral limb responses were seen at 80±5ms and 118±9ms. Occassionally, a bilateral short-latency response was noted at 37±8ms. Responses were not noted in either TA until voluntary initiated activity at 193±8ms and 195±9ms in the stressed and contralateral limbs, respectively, at 0%. At 10%, responses were noted at 204±8ms and 197±13ms in the stressed and contralateral limbs. respectively.

The results of this study indicate that the stressed limb plays a dominant role in the reflex response to lateral postural perturbation. However, this role can be affected by changes in grade which further stresses the stressed limb and may be a causative factor in ankle sprain.

The Acute Effects of Proprioceptive Neuromuscular Facilitation Flexibility Techniques on Arterial Blood Pressure

Cornelius WL, Craft KS: North Texas St. Univ., HPER, Denton 76203

This study examined the acute effects of modified Proprioceptive Neuromuscular Facilitation (PNF) on arterial blood pressure and hip joint range of motion (ROM). Sixty male subjects, ages 18-26, were randomly assigned to one of three treatment groups. Baseline measurements consisted of three ROM measures and arterial blood pressures (ABP). These baseline measurements were used to compare the subjects' hop flexion improvement and ABP increases to treatment measurements. Each treatment group utilized one of three PNF techniques. Group 1 received a hold-relax (HR) PNF technique incorporating a six-second maximal voluntary isometric contraction (MVIC). The HR technique used a passive prestretch, followed by a six-second MVIC and a subsequent passive stretch. Group 2 received a contract-relax (CR) PNF technique utilizing a five-second concentric contraction. The CR technique began with a passive prestretch followed by a five-second concentric contraction and a subsequent passive stretch. Group 3, slow-reversal-hold-relax (SRHR), followed the same procedures as Group 2 with the addition of the MVIC sequence (after prestretch) used in the HR technique. Each subject was given three trials. An ABP measurement was taken immediately following the cessation of the contraction(s) with a flexibility reading taken following the final passive stretch. A three (groups) by two (baseline vs. treatment) ANOVA with repeated measures was used. Results indicated that all three PNF treatments were found to be more effective than the baseline (passive static stretch) measure in increasing ROM. However, when comparing results between groups, Group 2 (SRHR) provided a greater ROM than did the HR and CR groups. ABP increased with PNF treatments but were not found to be significant when compared to baseline measures. It is possible that the potential benefits of PNF flexibility techniques may outweigh suggested risks involved for the rehabilitating cardiac patient.

The Effect of Induced-Delayed Muscle Soreness on the Active Biceps Brachii Muscle

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The objective of the present study was to determine what effect delayed onset muscle soreness has on the active biceps brachii muscle. Seventeen college age males were selected as subjects with 12 assigned to a treatment group and the remaining five serving as a control group. Electromyographic data were collected while each subject performed a maximum isometric contraction. Once an isometric maximum was determined, each subject was instructed to hold a submaximal contraction (60%) until fatigued. After collecting EMG data on day one, the treatment group completed a rigorous weight lifting protocol specifically designed to induce muscle soreness. A subjective soreness evaluation was completed prior to EMG testing on the second and third days. All subjects in the treatment group developed moderate to severe muscle soreness. The results showed a significant ($p=0.05$) increase in EMG activity when expressed as microvolts per second per unit of force. Maximum isometric strength showed significant change ($p=0.05$) averaging 75% of the pretreatment isometric maximum contraction. There was no noted change in the fatiguability of the biceps within the treatment group. It is concluded that the resultant decrease in maximum isometric strength may result in a decrease in optimal athletic performance, making the athlete more susceptible to injury.

Influence of Isokinetic Testing on Measurements of Anterior Knee Laxiety

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A clinical study was conducted to determine if measurements of anterior knee laxity taken prior to Cybex testing differ from measurements obtained

afterwards. 28 patients who each had 1 ACL injured knee and 1 normal knee participated in the study. Physical therapists-certified athletic trainers performed tests of anterior laxity on all knees using the KT-1000 knee ligament arthrometer. Patients then were strength tested on the Cybex at 60°/s and 240°/s. Laxity measurements were repeated after Cybex testing. Data were analyzed by paired t-tests. Non-reconstructed knees showed significant laxity increases ($t=2.189$, $p < .01$) after Cybex testing for passive anterior drawer with 15 lbs. of force, and for passive anterior drawer with 20 lbs. of force ($t=2.189$, $p < .05$). A trend toward significant laxity increases was observed with non-reconstructed knees for manual maximum displacement. For quadriceps active displacement, non-reconstructed knees showed a significant increase in laxity ($t=2.390$, $p < .05$); a trend toward significant laxity decreases was observed for reconstructed knees. Laxity of normal knees did not change significantly for any tests.

Based on the results of the study, the authors recommended that athletic trainers consistently perform KT-1000 measurements either before or after more vigorous clinical evaluations of athletes with ACL injuries. The laxity increases observed among non-reconstructed knees may encourage athletic trainers to consider controlling anterior tibial displacement in ACL injured athletes.

Correlation of Isokinetic Strength Assessment to a New Manual Muscle Tester

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Measurement of muscle strength is important for preseason screening and to document progress during a strength training program. It is also important when determining the extent of weakness following injury and the subsequent strength attained during rehabilitation. In order to rapidly and accurately assess muscle strength, we designed a portable, palm-sized, and battery-operated manual muscle tester (MMT) that allows immediate clinical assessment and quantification of eccentric strength. To test its reliability, we compared the breaking forces obtained with the MMT to CYBEX isokinetic dynamometry in 40 healthy subjects. Using the MMT, means of two trials of bilateral hip flexion (HF) and hip abduction (HAB) were compared to peak torques obtained from the best of five maximal efforts on the Cybex II at 60 degrees per second. Correlation and simple regression analyses yielded consistent measurement of muscle strength for each muscle group between MMT and Cybex ($p < .001$). MMT assessment of hip flexion alone was the strongest predictor of Cybex total leg strength (the sum of peak torques of knee extension and flexion, and hip abduction, adduction, flexion) ($r=0.8$). The MMT demonstrated consistent, reliable detection of muscle strength, highly correlated to accepted isokinetic techniques.

An Evaluation Model of the Student Athletic Trainer's Clinical Field Experience

Draper DO: Illinois St. Univ., Normal 61761

An important part of the student athletic trainer's education should be that obtained during the clinical field experience. This experience is considered to be most valuable when the student is given feedback on his or her performance. The supervising athletic trainer who has little training in evaluation design might feel overwhelmed at the task of evaluating student athletic trainers. For this reason experts in educational evaluation were consulted, and an evaluation system was designed for the purpose of appraising the student athletic trainer's clinical field experience. The evaluation was designed in concert with the seven competencies, outlined by the NATA's Professional Education Committee, that a student must be competent in when preparing to take the NATA certification examination. The author will present a sample questionnaire that may be used to evaluate the performance of the student during his or her clinical experience. With the feedback obtained from this evaluation, student athletic trainers will be made more aware of their strengths and weaknesses, and will be better equipped to seek opportunities to improve.

The Education Required of Athletic Trainers to Evaluate Knee, Shoulder and Foot Injuries: Survey of Orthopaedists

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Athletic Training and Sports Medicine are expanding in many directions. As a result there is an increase in the number of programs being developed to educate athletic trainers. NATA offers guidelines and competencies for athletic training education programs. These detail the didactic and practical components of the curricula, but they do not provide a sequence for the interaction of classroom knowledge and practical skills in the evaluation of injuries. Our objective was to study the level of education/experience recommended for evaluating injuries to a specific joint. A form listing manipulations and observations commonly used to evaluate injuries to either the shoulder, foot, or knee was sent to a random sample of members of The American Orthopaedic Society For Sports Medicine. Manipulations and observations were grouped into the following four categories: Palpation for Tenderness, Range of Motion, Joint Stability, and Special Test. Participants were asked to designate the lowest classification of evaluator who should be allowed to perform a given manipulation or observation. The following classification was provided: inexperienced student trainer - < 900 hours experience, no specific course work; experienced student trainer - < 900 hours experience with anatomy, physiology and training course work; NATA certified athletic trainer; and orthopaedic surgeon. Of the 350 physicians surveyed, 113 responded (32%). The data suggest that the level of education recommended to perform palpations for tenderness was less than that for range of motion, which was less than that for joint stability, which in turn was less than that for special tests. Although most recommended that only a certified athletic trainer or orthopaedic surgeon perform the special test, some indicated that student trainers could perform the test, but the test interpretation and all injury management decisions should be relegated to the athletic trainer and physician. The results have implications for individuals involved in developing training curricula and/or supervising training facilities and programs. Athletic training programs should be designed so that the knowledge and skills for injury evaluation are taught in an orderly sequence. Integration of classroom material and practical learning is necessary to ensure that the student develops a complete understanding of both the injury and the evaluation process.

Role of the NATA Curriculum Director as Educator and Clinician

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The NATA curriculum director faces a unique challenge when occupying a position as both an educator and a clinician. The purpose of this paper was to determine the academic credential, faculty rank, and clinical involvement of those athletic trainers directing an NATA approved curriculum at either the undergraduate (UG) or graduate (G) level. The implication of the academic tenure process on the curriculum director's role as educator and clinician was also explored.

Directors of all NATA approved curriculums were surveyed (64 UG, 10 G). 93% of the curriculum directors responded (59 UG, 8 G). The average length of professional experience as a certified athletic trainer was $\bar{x}$ =13.6 years. Experience as a curriculum director was $\bar{x}$=7.5 years. 17.8% of the directors held a doctoral degree. Of the remaining directors, 16.7% were working toward a doctorate. Over 80% of the directors were clinically active, with athletic training responsibilities ranging from one sport, to head athletic trainer including football. 20.3% of the directors were tenured, while 39.1% held tenure-track appointments. 14% of the directors had been denied tenure, while 19.7% had special provisions made for them to facilitate the granting of tenure. In general, research and publication surfaced as the most important criteria for promotion and tenure.

To direct undergraduate athletic training "majors" and graduate programs, it seems appropriate for more curriculum directors to hold a terminal degree. Clinical involvement of the curriculum director also seems to be desirable, and is predominant at this time. However, the feasibility of working as both a traditional clinician and as an educator may be in question. Institutions that are committed to quality athletic training education should consider creatively structuring a position for a curriculum director, and/or should weigh athletic training service heavily when making promotion and tenure decisions. Furthermore, athletic trainers who are seeking a curriculum director position should recognize the difficulty associated with the combined responsibilities of being an educator and a clinician. ⊕

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An Evaluation Model of the Student Athletic Trainer's Clinical Experience

David O. Draper, MA, ATC, EMT

Abstract

One of a student athletic trainer's greatest learning experiences can be clinical experience. This experience is more valuable if the student is given feedback on his or her performance. An evaluation system was designed for the purpose of appraising the student trainer's clinical experience, with the intent that students will use this information as an aid toward improvement. The evaluation was designed in concert with the seven competencies outlined by the NATA's Professional Education Committee. A student must be competent in these seven areas in order to pass the NATA certification examination A sample questionnaire that may be used to evaluate the student against these seven competencies is provided.

Introduction

The clinical experience can be one of the most rewarding and educational opportunities available to student athletic trainers. Such a setting provides students with hands-on or practical training in his/her chosen career. It is during the clinical experience that the student athletic trainer needs the supervising athletic trainer's help and direction. This mentor evaluation is critical to the learning and future success of the student. Hopefully, such an experience will provide the student with the insights necessary to become a respected professional.

The performance evaluation of student athletic trainers varies among practicing professionals. Some supervising athletic trainers use a self-directed method where students are essentially allowed to work on their own with little input; others employ a rigid evaluation system which may lead to frustration if students feel that they are unable to succeed.

The National Athletic Trainers Association (NATA) recognizes the need to train professionals, and the organization's members want to prepare true health care experts. The NATA certification exam was instituted in 1970 in an effort to ensure high standards. Successful passage of the certification exam should be every student trainer's desire. Careful evaluation of a student's field experience can assist the student athletic trainer in passing the certification examination, and in feeling qualified for an entry-level position. While the Professional Education Committee of the NATA recommends that student athletic trainers should be evaluated on a regular basis, no specific guidelines are given. The supervising athletic trainer, who has little training in evaluation design, might feel overwhelmed at the task of evaluating student athletic trainers. The purpose of this paper is to define evaluation, explain why it is needed, and offer a sample model designed for the purpose of evaluating the student athletic trainer's clinical experience.

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Discussion of Related Literature

Many definitions of evaluation can be found in the literature. Tyler (7) perceived evaluation as the process of determining to what extent educational objectives are actually being met. Another widely accepted definition of evaluation suggested by various leading educators has been that of "providing information for decision making" (3). A joint committee on standards of evaluation, comprised of 17 members representing 12 organizations associated with educational evaluation, defined evaluation as the systematic investigation of the worth or merit of some object (3). Stufflebeam (6) referred to two types of evaluation: formative and summative. Formative evaluation is intended to serve decision making and summative evaluation serves accountability. Thus, evaluation can serve two functions — i.e., that of improvement and development of an ongoing activity, program or person, and to make one accountable to his/her planned goals or objectives. I feel the major purpose of conducting student athletic trainer evaluations is to assist students in achieving their potential as athletic trainers. Students need to receive advice on how to improve on their weak points and praise for their strong points.

The text *Program Evaluation Design Manual* gives a great deal of insight into the planning and development of evaluations. Its authors (3) state that evaluation designs must be both potent and directed toward worthwhile goals. They contend that an evaluation design is a procedural map for getting important information about training efforts to people who can use it.

Method

According to Brinkerfhoff et al. (2), specific steps are used in designing an evaluation. Each step addresses particular questions. When these questions are answered, the evaluation designer progresses to the next step. Such an approach will now be applied to developing a student athletic trainer evaluation.

Step One: Evaluation Preview

Questions to be addressed:

1. Why will the evaluation be done?
2. Who will be evaluated?
3. What will be evaluated?

Several universities offer a course in athletic training clinical experience. Unlike other courses which require extensive reading and completion of a written examination to evaluate student performance, a clinical experi-

ence course seeks to evaluate the practical skills of student athletic trainers. Based upon the student's performance, he/she is assigned a letter grade of: A, B, C, D, or F. The main purpose of performing an evaluation is to help student athletic trainers take note of their strengths and weaknesses and to give direction for improvement.

The evaluation should take place throughout the course and can be conducted during practice sessions of the sport to which the student trainer has been assigned.

Step Two: Outline of Evaluation Questions

Question to be addressed:

1. What questions and subquestions will the evaluation address for each audience?

According to the policies set forth by the NATA, there are seven main areas in which student athletic trainers must have competence in order to pass the NATA certification examination (5). These areas are:

1. Prevention of athletic injuries/illnesses.
2. Evaluation and recognition of athletic injuries/illnesses and medical referral.
3. First aid and emergency care.
4. Rehabilitation and conditioning.
5. Organization and administration.
6. Counseling and guidance.
7. Education.

The supervising athletic trainer and program director can design several questions under each of the seven categories which help to evaluate these competencies. Note: Some of these areas overlap, however, all are addressed in the sample evaluation form, although not necessarily in the above order.

Step Three: Information Collection Plan

Questions to be addressed:

1. What sources of information will be used?
2. How will information be collected?

The procedure for collecting information about the student athletic trainer's performance will be to utilize an evaluation form that measures the specific clinical tasks of the student athletic trainer. At mid-term and at the end of the semester, copies of the evaluation form should be completed by the program director, the supervising athletic trainer, and the student athletic trainer. This information can then be compiled by the program director.

Step Four: Analysis and Interpretation Plan

Questions to be addressed:

1. How will the information be analyzed?
2. What criteria will be used to judge the subject?
3. What procedures will be used to make those judgements?

The criteria used to judge the field experience of the student athletic trainer may be taken from NATA protocol, objectives, expert judgements, opinions, viewpoints, and staff expectations.

The program director and supervising athletic trainer should evaluate the student and, to help eliminate bias, the student athletic trainer can do a self-evaluation as well.

In situations where the program director has had limited contact with the student athletic trainer, the assistant athletic trainer or some other competent individual could be appointed to perform an evaluation. The results of the three evaluations, recorded by the supervising athletic trainer, the program director, or other appointed evaluator, and the student should be totaled and averaged. Grades and grade points might be determined as follows:

(4) VERY GOOD = A
(3) GOOD = B
(2) ADEQUATE = C
(1) WEAK = D
(0) UNSATISFACTORY = F

A = 4.0	A- = 3.7	B+ = 3.4	B = 3.0
B- = 2.7	C+ = 2.4	C = 2.0	C- = 1.7
D+ = 1.4	D = 1.0	D- = 0.7	F = 0.0

Step Five: The Report Plan

Questions to be addressed:

1. What reports will be made?
2. What should their contents be?
3. When will they be given?
4. To whom will they be made?
5. What format will be used for them?

The purpose of the report plan is to keep key audiences informed about the evaluation's intent, progress, and results. The supervising athletic trainer should work with students to help them understand the report's implications (2).

Prior to the student athletic trainer's first clinical experience, the program director, supervising athletic trainer, and the student should meet to discuss the purpose of the evaluation. Copies of the evaluation can be distributed to each student so he/she will know what is expected. The student should be informed that he/she will be given an opportunity to perform a self-evaluation utilizing this same form at the conclusion of his/her field experience.

A similar meeting should be held immediately after the mid-term and final evaluation and reports should then be given to the students concerning their progress. Periodic visits and discussions about the evaluation with the supervisor should be encouraged.

Step Six: Plan to Evaluate the Evaluation

Question to be addressed;

1. Does the evaluation effectively measure what it is intended to?

It is suggested that professional personnel critique an evaluation's design. Most universities employ educators that can effectively perform this function. One expert evaluator, has given four criteria to judge the effectiveness of an evaluation (4). The first criterion is that the evaluation must be useful, truthful, and sufficient. Sufficiency implies that enough information has been presented to provide a descriptive or explanatory account with necessary depth and breadth. Secondly, the evaluation must be pertinent. A third criterion is credibility. The evaluation must be believable. The fourth criterion is that it reveals the less obvious traits of a student athletic trainer, such as life-saving skills, instead of the obvious traits displayed daily, such as punctuality or taping skills (4).

Another way to check the effectiveness of an evaluation design is to ask for the student athletic trainer's input. Anderson and Ball (1) have stated that the people being evaluated should be given the opportunity to foster ideas for the evaluation criteria.

Evaluations can help people see their performance in a more objective fashion. Evaluations can help facilitate desired change. I feel that by following the steps outlined in this article and by using the sample evaluation questions included, field experience supervisors will be better able to inform student athletic trainers of what is

expected of them. With the knowledge obtained from evaluations, student athletic trainers will be better equipped to seek opportunities to improve.

Evaluation Questions

First Aid

1. Follows a logical sequence when performing first-aid (i.e., airway, breathing, circulation, bleeding, spine, shock)
2. Uses proper topical ointments for cleansing and treating wounds.
3. Uses proper methods to prevent infection.
4. Demonstrates knowledge in prevention and treatment of injury.
5. Demonstrates knowledge of proper splinting and immobilizing techniques.
6. Fills out injury report form.

Taping/Wrapping

7. Applies correct taping procedure.
8. Concerned about the athlete's comfort.
9. Performs quality tape job.
10. Does not waste materials.
11. Is efficient.
12. Cleans up area afterward.
13. Sound use of protective padding.

(NOTE: The supervising athletic trainer may evaluate the student on his/her ability to tape in general, or design the evaluation so as to measure the student's ability to perform specific taping techniques.)

Evaluation of Injury

14. Takes a complete history, including
    a. Mechanism?
    b. Previous Injury?
15. Asks patient where it hurts.
16. Visually inspects injury noting redness, swelling, deformity.
17. Compares with opposite limb.
18. Uses palpation to detect warmth, swelling, deformity.
19. Observes athlete's facial expression.
20. Palpates direct injury site last.
21. Calms and reassures athlete.
22. Palpates opposite limb.
23. Uses P.R.O.M. to detect injury.
24. Uses A.R.O.M. to detect injury.
25. Uses manual resistance to detect injury.
26. Performs ligament, muscle, and nerve tests correctly.
27. Checks distal pulse.
28. Appropriately refers injuries to team physician.

Unsatisfactory (0)	Weak (1)	Adequate (2)	Good (3)	Very Good (4)	Not Applicable
0	1	2	3	4	NA
0	1	2	3	4	NA

Rehabilitation

29. Proper use of rehabilitation equipment.
30. Follows logical, safe progression of exercises.
31. Records athlete's progress.
32. Finishes early stages of rehabilitation with ice.
33. Periodically re-evaluates injury.
34. Instructs athlete in proper stretching protocol.
35. Gives encouragement to the athlete.

Modalities (General)

36. Asks athletes for history to determine contraindications prior to treatment.
37. Properly prepares athlete for treatment.
38. Explains the physiological effects of the treatment to the athlete.
39. Does not leave athlete unattended.
40. Follows protocol for correct use of modality.
41. Cleans up treatment area after use.

Other

42. Good rapport with athletes and peers.
43. Reports to work on time.
44. Enthusiastic about work.
45. Resourceful.
46. Positive influence in the training room.
47. Exhibits stamina.
48. Reliable.
49. Professional appearance.
50. Assists others in training room duties.

0	1	2	3	4	NA

0	1	2	3	4	NA

0	1	2	3	4	NA

Directions:

Place a check in the appropriate box that corresponds with each question. Be sure to check NA when the situation does not apply. When finished, add the totals: 0 points for unsatisfactory, 1 point for weak, 2 points for adequate, 3 points for good, and 4 points for very good. After totaling the points, divide the result by the number of applicable answers and this will be the average.

For example: Suppose the total number of points was 163, with the total number of applicable responses being 48. When dividing 163 by 48, the result is 3.3999. This number rounds off to 3.4 or a B+.

Note: Be sure to average all three evaluations (the student's self-evaluation, the program director's or other appointed evaluator, and the supervising trainer's) before determining the final grade.

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The Use and Abuse of Hydrotherapy in Athletics: A Review

Arnold T. Bell, ATC, PT, MA
Phillip G. Horton, ATC

Abstract

Hydrotherapy is an effective modality for the treatment of athletic injuries of varying degrees. Benefits of hydrotherapy treatment may include increased range of motion, decreased stiffness, relaxation, pain relief, wound debridement, increased circulation, and resolving of inflammatory exudate.

Hydrotherapy techniques are sometimes misused as a panacea for any injury, often with the etiology of the injury being unknown. Coaches and students often use whirlpools without proper knowledge of indications and contraindications for treatment, as well as understanding of safety features. This article reviews proper applications of hydrotherapy to ensure beneficial treatment for the athlete.

Introduction

Hydrotherapy has been defined as the external application of water for therapeutic purposes (30). Hydrotherapy procedures often serve as a preparation, supplement, or accompaniment to active remedial exercise (9). Initial use of water as a therapeutic agent is believed to have had its inception in the Roman Empire. The Romans used water for recreational purposes, for refreshment after gymnastic exercises and for curative purposes to heal the wounds of battle.

A commonly used hydrotherapy modality in athletic training is the whirlpool bath. Whirlpool is characterized by water treatment of a local body part along with mechanical agitation as an added stimulus to combine the values of conductive heating or cooling and gentle massage. Whirlpools have become a popular piece of equipment in athletic training room, sports medicine clinics, health clubs, and fitness centers. Despite the popularity and high success rate of using hydrotherapy for various problems in athletic training, its use is often unnecessary and improperly applied.

The whirlpool is a much abused piece of equipment and the indiscriminate use of whirlpool is a big problem. Personnel not properly trained in whirlpool use often expose the athlete to grave dangers. Those using hydrotherapy should be knowledgeable about indications and contraindications for hydrotherapy, proper water temperature for desired physiological effects, safety features, tank cleanliness, and proper length of treatment.

The purpose of this article is to present and review guidelines for proper hydrotherapy procedures, especially whirlpool, and discuss how commonly abused aspects of whirlpool treatment can be prevented, thus ensuring quality hydrotherapy treatment for the athlete.

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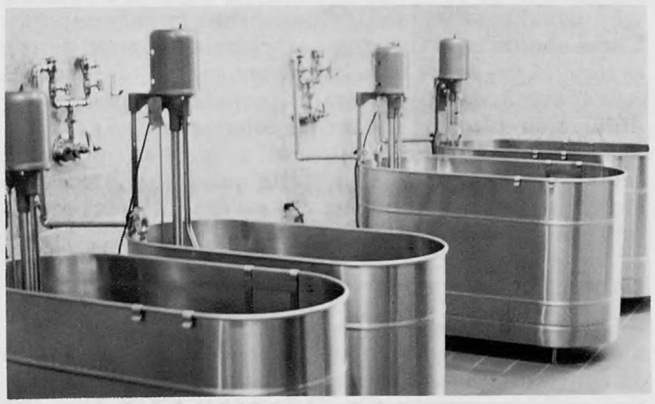
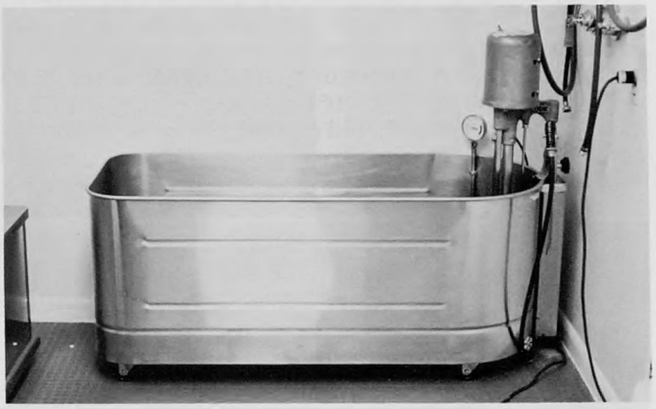
Overview of Hydrotherapy Techniques



Standard Whirlpools (Figure 1)

The athletic training room or sports medicine facility should ideally be equipped with a variety of different sized whirlpools to meet various needs. The whirlpools may be housed within the athletic training facility adjacent to the athletic trainer's office with full-view windows allowing observation of the hydrotherapy area. The whirlpools can also be housed in a separate part of the facility accommodating fixed or portable model whirlpools.

The larger 40 to 60-gallon tank can be utilized for lower extremity treatment or full-body immersion in select cases. The smaller 18 to 25-gallon tank is usually utilized for the elbow, forearm, wrist, hand and ankle.



Loboy (Figure 2)

The Loboy whirlpool has a capacity of 70 to 90 gallons and is designed for seating the athlete or patient inside with the lower extremities completely extended. The Loboy is an excellent hydrotherapy apparatus for immersion of both lower extremities and for individuals having difficulty getting into standard whirlpools.

Therapeutic Pool or Swimming Pool

Pool exercise is often an important component of a rehabilitation program, and the pool is a useful piece of equipment for the athletic trainer. Pool therapy is beneficial in improving strength, reducing undue stress on weight bearing joints, promoting relaxation, restoration of mobility, and improving circulation (14, 22).

The pool may be indoors or outdoors, sunk below floor level or built entirely above it. Size and location of the pool may be determined by construction and maintenance costs, as well as available space. Most pools have a non-skid surface on the pool bottom and on the deck, various depths of water, and accessible emergency equipment.

Walsh (28) recommended temperatures of 36° to 37°C (97° to 99°F) for treating people with joint problems in the pools, and 30° to 34.5°C (86° to 94°F) for patients who would be immersed for longer than twenty minutes. There should be a filtering and chlorination refiltering system of the water to help prevent spread of infection. Advantages of pool therapy include complete body immersion allowing a more thorough exercise program utilizing appropriate physical properties of water, relaxation and heating effects, and the ability to supervise exercise programs of several athletes simultaneously.

Contrast Therapy

Contrast therapy is the repeated alternation of immersing an injured body part in hot and cold water. It is designed to produce alternate fluctuations of vasodilation and vasoconstriction to increase blood flow and carry off waste products. Contrast therapy may be utilized as a "transitional" modality between the acute and subacute phases of injury management, between phases of injury management, or between cessation of cold and beginning of heat treatments.

Contrast therapy may be done utilizing hot and cold whirlpools or buckets of hot and cold water. Traditionally, contrast therapy has begun and ended with hot water (6, 8, 28, 30). There are other recommendations in the literature regarding sequencing, including beginning and ending with cold (16), beginning with warm and ending with cold (9, 26, 29) and starting with hot and ending with cold to prevent edema and encourage pain-free exercise (13).

Total treatment time is usually about twenty minutes with a hot to cold ratio of four to one. Recommended water temperatures for contrast therapy are 55° to 65°F for cold and 95° to 105°F for hot (8, 27), but use of water temperature as high as 110°F has been reported (17, 18). The athletic trainer should explain the procedure to the athlete before beginning treatment and supervise him/her to ensure switching of whirlpools at the proper time.

Walk-In Whirlpools (Figure 3)

Walk-in whirlpools provide relaxation and therapeutic benefits to the athlete and come in various designs. These whirlpools are usually equipped with multiple agitators.

Hot Tubs and Jacuzzis

Many facilities utilize hot tubs and the athletic trainer employed in a health club or fitness facility may be exposed to these types of hydrotherapy apparatuses. Hot tubs are used more for relaxation and recreational purposes than for therapeutic purposes.

Improvisational Hydrotherapy Techniques

An array of improvisational hydrotherapy techniques can be utilized by the athletic trainer to compensate for lack of equipment. Among improvisational techniques utilized are use of sink water faucets, hot and cold showers, and application of water to a body part using a garden hose.

Indications and Contraindications for Use of Hydrotherapy

Major considerations in determining use of hydrotherapy in athletic training include the type and location of injury, stage of the injury cycle, need for hot or cold application and desired effects. Tables 1 and 2 summarize major indications and contraindications for hydrotherapy.

Acute orthopedic trauma, acute edema, and acute muscle spasm are major indications for use of cold whirlpools (15). Due to the initial vasoconstriction qualities, cold whirlpools are beneficial in constricting blood vessels and reducing swelling (19). A major disadvantage of using cold whirlpools in the acute stage is that the extremity cannot be elevated and must be kept in a dependent position for the duration of the treatment session. Both contribute to edema formation.

Other uses of hydrotherapy include ongoing treatment of soft tissue trauma, tendonitis, post-surgical or post-immobilization conditions to increase range of motion (23), chronic inflammatory conditions, pain, joint stiffness, and as a preliminary modality before exercise (30). Warm to hot whirlpools are also indicated for hemorrhoids, low back disorders and post-operative extremity problems (7).

Major contraindications for whirlpool use are where effects of heat or cold would be undesirable (See Table 2). Whirlpool use would be inadvisable in the presence of sensory loss, increased sensitivity to heat or cold, fear of water, fever, and circulatory malfunction or disease. Whirlpool treatment of athletes with open wounds should be avoided (27) unless the athletic training staff is willing to adopt a well organized, strict cleansing and sterilization protocol for hydrotherapy equipment to fight breeding of infection.

Precautions for Proper and Safe Application of Hydrotherapy

Reason for Using Hydrotherapy

A knowledge of the problem being treated and its stage of progression is essential prior to subjecting a body part to hydrotherapy treatment.

The inflammatory reaction state determines factors such as water temperature, length of treatment sessions, and treatment frequency. Carefully applied, these factors have a beneficial effect on the pathology when using hydrotherapy. The athletic trainer should be sure

Table 1
Indications for Whirlpool (Hot and Cold)

Type of Whirlpool	Physiological Effects	Common Pathologies/ Conditions Treated
Warm to hot (95°-105°-110°F)	Increased circulation	Adhesions
	Increased lymphatic drainage	Low back pain - sciatica
	Increased metabolism	Tendonitis, Tenosynovitis
	Relaxation	Post immobilization conditions
	Increased phagocytosis	Post surgical conditions
	Analgesia	Joint stiffness
	Decreased muscle spasm	General relaxation
		Hemorrhoids
Cold 55°65°F)	Decreased circulation	Acute orthopedic trauma (Disadvantage is the dependent position)
	Decreased lymphatic drainage	Acute muscle spasm
	Decreased nerve conduction velocity	Minor burns
	Decreased metabolism	Acute edema (not the best to use due to dependent position)
	Anaesthetic effect	Before exercise (cryokinetics)
	Decreased edema	Post workout soreness or repetitive trauma (e.g. throwing shoulder or elbow)
	Decreased temperature of injured part	Select cases of heat illness

Table 2
Contraindications for Whirlpool

Hot Whirlpool	Cold Whirlpool	Both Hot & Cold Whirlpool
Acute injury	Hyper or hyposensitivity to cold	Decreased sensation
Edema	Frostbite	Poor circulation or circulatory malfunction
Inflammation (acute)	Relaxation purposes	Fever
Hypersensitivity to heat	Raynaud's Phenomenon	Urinary or fecal incontinence
Hyposensitivity to heat		Open wounds
Heat exhaustion		Fear or neurotic behavior
Frostbite		Feeling of discomfort
		Poor supervision
		Without electrical grounding
		After exhaustive exercise

that the problem has been defined before treatment and should know about any contraindications or thermal limitations an athlete may present due to particular physiological problems.

Water Temperature

Proper water temperature designed to produce favorable physiological and therapeutic effects is of utmost importance. Selection of treatment temperature should be based upon treatment indication, time elapsed since injury, and the state of inflammatory reaction.

A wide variety of treatment temperatures have been cited in the literature (8, 15, 18, 23, 27, 30). Most individuals utilize a water temperature between 95° and 105°F when heating effects are desired, but as more of the body is submerged, the temperature should be lowered to prevent heat exhaustion (23, 26). Higher whirlpool temperatures, though often relaxing, can interfere with cardiac filling and cardiac output causing circulatory problems (20). Precautions should be taken also not to burn the athlete nor utilize application of warm or hot whirlpool too soon after acute injury to avoid return of hemorrhage and increased edema.

Therapeutic temperatures for application of cold whirlpool generally range in the vicinity of 55° to 65°F (8, 23, 30). The recommended length of treatment time for whirlpool treatment is 20 minutes (4, 18, 28).

Supervision of Athletes in Whirlpools

Athletes or patients ideally should never be left alone during whirlpool treatments as there is a potential danger of overheating and heat exhaustion, fainting, and possible drowning in the whirlpool. The athletic trainer should assign an assistant or student to the hydrotherapy area or have a whirlpool area fully visible from the office (10).

The Hydrotherapy Area and Surrounding Surfaces

The hydrotherapy area of the athletic training facility is ideally separate or walled off to limit water spillage in the main part of the training facility (23). Walsh (28) recommended a higher hydrotherapy area room temperature with adequate ventilation for preventing moisture condensation on the floors, walls, and equipment. Floors in the hydrotherapy area should have a non-slip surface and should allow proper water control and drainage (5, 24). Many hydrotherapy areas have sloped floors to allow drainage toward a centrally located floor drain to prevent water from standing. Electrical outlets should be strategically located and well above the floor.

Figure 4

Figure 5

Patient Suspension Apparatus

There are several methods of positioning an athlete to receive treatment on different parts of the body. When whirlpool is necessary for the distal lower extremities, a special whirlpool swivel chair or high seat (Figure 4) may be utilized. Some whirlpools also have special adjustable suspension seats inside the whirlpool (Figure 5) to support the athlete during hip, thigh, and lower back treatments. The upper extremities are best treated with the athlete sitting in an armless chair, resting the lateral thorax against the outside of the whirlpool with the upper extremity in the water. Towelling or padding

should be placed over the edge of the tank under the athlete's axilla to minimize axillary pressure (8, 15).

Much attention has been focused upon full body immersion in whirlpools. This practice can be dangerous, resulting in an unconscious athlete susceptible to drowning. When the immersion period is lengthy with high water temperature and an unsupervised athlete, the danger of potential unconsciousness increases. A person being treated with full body immersion should be completely recovered from exercise as body temperature may reach dangerous levels in a hot whirlpool after strenuous exercise.

Prevention of Shock Hazards

The major concern with regard to hydrotherapy safety is prevention of electrical shock hazards and potential electrocution of the athlete. There should be regular inspection of whirlpool turbines for damaged wiring and proper grounding, preferably done by an electrician (1, 2, 27). Failure to properly insulate the agitator can result in reception of electrical current in the water. Water used in a whirlpool with a high-current drive motor is potentially hazardous as inadequate grounding creates the potential for patient macroshock (passage of electrical current through the body with possible adverse physiological effects) and potential electrocution (1).

Ground fault circuit breakers or interruptors (GFI) must be a part of all whirlpools (1, 8, 10, 12). GFIs continuously monitor electrical current to and from the motor and will shut off the current before the patient is electrocuted, if there is a break in the circuit.

Gieck (11) also recommended securing whirlpool motors in order to prevent them from slipping off the support shaft and falling in the water. Instructions should be given to the athlete to avoid touching any switches, line cords, electrical outlets or turbine units while in the water. Particular caution should be given regarding the "on-off" toggle switch as it may be a source of macroshock or patient electrocution if tampered with.

The athletic trainer should discourage the playing of radios requiring electrical current in the hydrotherapy area due to potential dangers where excess water may be spilled on the floor.

Cleanliness of Whirlpool Tanks

Whirlpools should be completely drained and cleansed, preferably after each use, including scrubbing with a commercial disinfectant. Careful cleansing of hydrotherapy equipment can be critical in preventing cross contamination (15), communicable skin disease (19), and special problems such as Pseudomonas Aeruginosa Folliculitis which occurs mainly in hot tubs (21).

Specific areas to be cleaned are those which are known to harbor contaminating microorganisms (i.e., drains, turbines, tub bottoms, and thermometer columns). Bohannon (3) recommended use of chlorine based compounds for cleansing as they are less expensive than iodine compounds and destroy microorganisms better. However, chlorine compounds tend to be corrosive on the whirlpool with time.

With treatment of open wounds, bacteriocidal agents should be added to the whirlpool water during treatment followed by draining of the water and a thorough cleansing of the whirlpool. The athletic trainer should establish individual cleaning procedures for hydrotherapy equipment and periodic whirlpool cultures should be taken. The external surface of the whirlpool should also be periodically polished with a commercial stainless steel polish.

Conclusion

Using the whirlpool indescriminately for any problem, failure to use precautions and monitor treatment temperature, improper supervision of athletes being treated, presence of electrical shock hazards, improper positioning in the whirlpool, and lack of appropriate precautions for tank cleanliness are some ways that abuse can occur in utilizing hydrotherapy modalities with athletes. Coaches, athletes, and poorly supervised student trainers are sometimes guilty of these practices.

However, hydrotherapy modalities are safe to use for desired physiological and therapeutic effects. Benefits of hydrotherapy use in athletic training are many and include improvement of mobility, pain relief, improved circulation, relaxation, and promotion of healing. The athletic trainer can effectively utilize hydrotherapy equipment with a knowledge of indications and contraindications for hydrotherapy, as well as precautions to take when using hydrotherapy equipment.

Whirlpools can be effective, but can be dangerous if used improperly and carelessly. Poorly planned or executed whirlpool treatments can result in disaster with serious side effects. Whirlpools are not a "cure all" remedy for all injuries and the athletic trainer should use caution and knowledge in selection of injured athletes to be treated by hydrotherapy.

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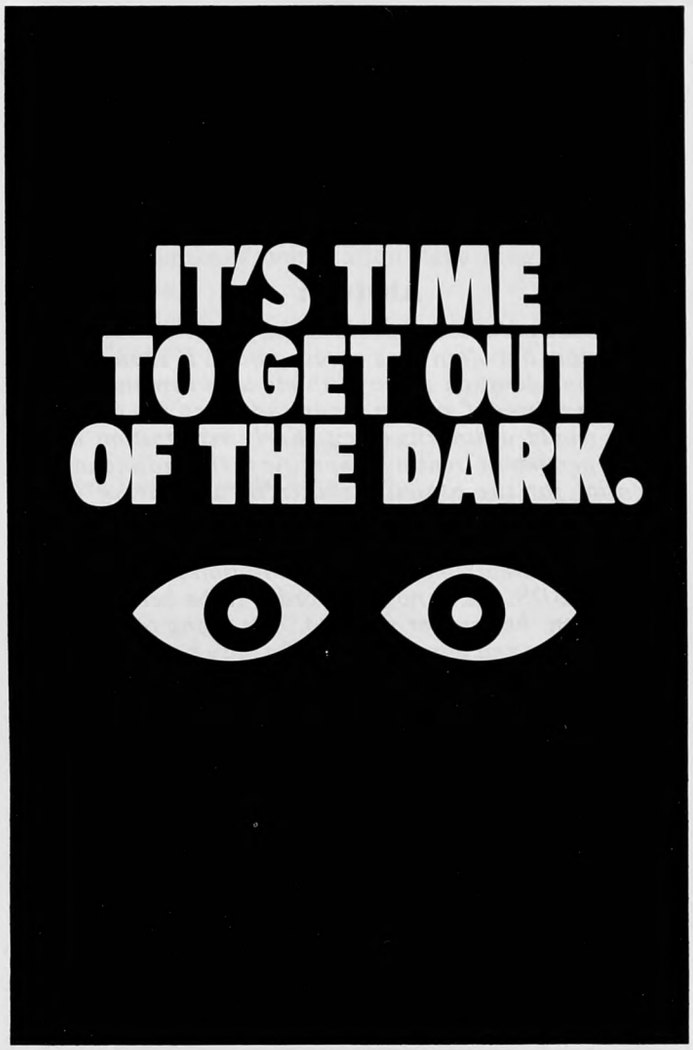

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Reflex Sympathetic Dystrophy

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Abstract

RSDS is a painful and debilitating problem that is not uncommon, but often goes unrecognized. It should be a prime consideration in any athlete who demonstrates pain to a degree of greater magnitude than the specific injury would ordinarily elicit. Early recognition and gentle, persistent treatment specific to the individual is essential for the athletic trainer in alleviating this frustrating problem. Education of RSDS and encouragement and support of the athlete is crucial. The aggressive approach to treatment and rehabilitation is not advisable in RSDS. "It is not a disorder to be beaten into submission, but rather seduced." (2). Long-term pain management and ganglionic blocks may be warranted, but can usually be avoided if early detection is made.

Introduction

Athletes may demonstrate a degree of pain, swelling, stiffness, and dysfunction following both major and minor injuries that appear out of proportion to the severity of the injury. These clinical signs and symptoms are a source of concern for the athlete and have clinical significance to the athletic trainer. The psychological temperament, as well as the vasomotor reaction of these individuals, should not be overlooked in the clinical evaluation. It is truly disheartening to see an athlete develop an extreme amount of discomfort and disability for no obvious reason.

The reflex sympathetic dystrophy syndrome (RSDS) is a poorly understood symptom complex that has been, and sometimes still is, designated under a number of other diagnoses. Minor causalgia, minor traumatic dystrophy, shoulder hand syndrome, major traumatic dystrophy and major causalgia comprise a few of the recognizable diagnoses reflecting the extent that RSDS is still ill-defined. On occasion in the treatment of trauma of an extremity, expected end results may not be forthcoming; instead, an alarming array of unexpected symptoms including abnormal pain, swelling, stiffness and dysfunction may arise. RSDS is an exaggerated and unpredictable response of the body to trauma or post surgical procedures. To gain a keener understanding of RSDS, several features must be examined more thoroughly. Causes, clinical manifestations, diagnosis and treatment procedures will collectively aid in explaining this perplexing syndrome. RSDS becomes most apparent following traumatic injury or post-operative trauma. These cases are not rare, only rarely recognized (2).

The etiology of RSDS is not completely understood, but it is thought to be related to an abnormal autonomic reflex (2). Normally, pain impulses are propagated via afferent fibers to the substantia gelatinosa of the spinal cord. At the spinal level the impulses are modulated and transmitted to the brain and to the efferent sympathetic fibers. The sympathetic outflow is immediate and of relatively short duration. In RSDS, the afferent fibers transmit an abnormal message to the spinal cord and/or the brain. This message causes an "over response" stimulus in the internuncial pool of the central nervous system. The resulting sympathetic outflow becomes prolonged. An exaggerated efferent stimulation is then transmitted to the peripheral tissues with pronounced activity, which results in increased local circulatory disturbances and muscle spasm. This further aggravates the already present noxious stimuli secondary to the local injury producing "a vicious cycle" (1,2,4,5). (Figure 1)

Clinical Features

The sympathetic nervous system affects skin, subcutaneous tissue, fascia, muscle, synovium and bone (2). The variable involvement of one or more of these tissues

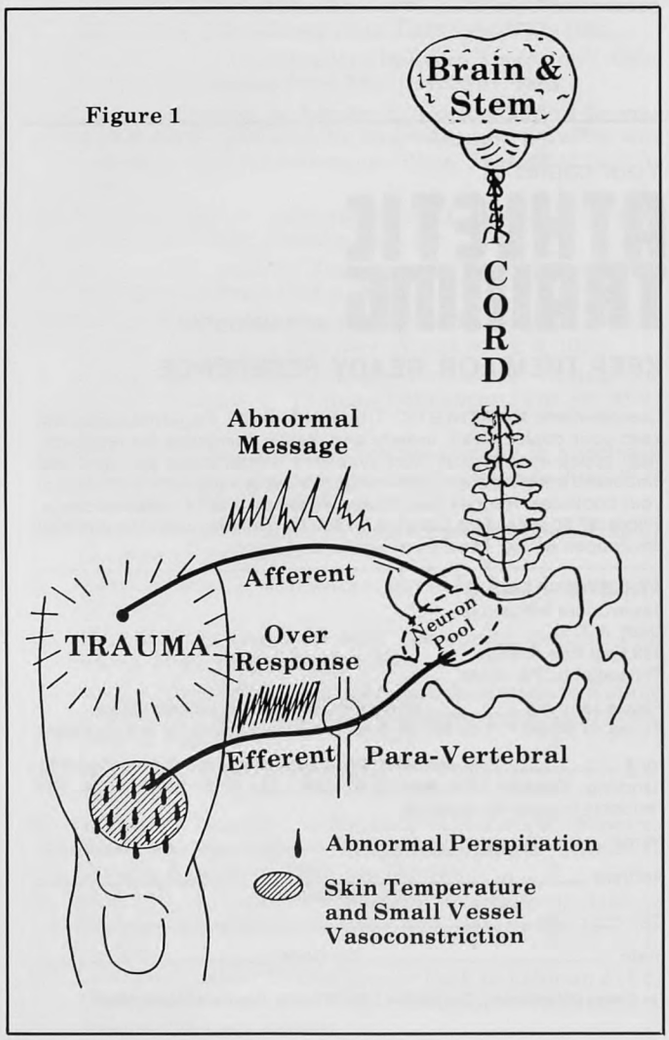

Figure 1

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is distinctly related to their role in the clinical features. There are three basic categories of the clinical features for RSDS (2).

1. Immediate pain following trauma or postoperative procedure that becomes seemingly out of proportion. This pain is described as burning, aching, stinging, cutting, or throbbing. It is often constant and intolerable. Due to pain and edema, the athlete loses the ability to move the extremity and demonstrates excessive guarding of it (2).

2. Response to injury may be normal initially, but improvement subsides in a few days, and the athlete complains of consistent pain or increasing pain and extremity mobilization ceases (2).

3. Post injury response is normal. The athlete becomes almost completely asymptomatic within the expected time frame. Then the pain reappears, and the syndrome further develops (2).

Signs and Symptoms

Of the signs and symptoms of RSDS, pain is the most predominant. Pain is abnormal and extreme and/or touch and weight bearing can be most uncomfortable. Mobilization of the extremity will increase pain. Night pain is characteristic. Cold and dampness may elicit an excessively increased pain response. In the early stages, the pain may be accompanied by edema, localized heat and erythema. The skin may demonstrate hyperesthesia, decreased skin temperature, and appear cyanotic when exposed to cold.

One of the most distinguishable characteristics of RSDS is joint stiffness. The athlete will complain of a thickened or woody feeling in the tissue if the condition persists for several weeks (7).

As previously mentioned, the athlete will demonstrate a lack of motion. This is a form of capsulitis that effects fibrous tissue, limiting normal pain-free motion (7).

Due to the circulatory changes in the extremity, hyperhydrosis is often present with RSDS. This sweating is of abnormal nature, and more profuse than one would expect (1,7).

The manifestations usually occur in three separate stages. (Figure 2) Stage I is characterized by soft swelling, a moderate amount of redness and an increase in local temperature. Pain has generally increased above the normal anticipated level. This stage generally lasts about four weeks and spotty osteoporosis may begin to occur. Stage II makes an appearance anywhere from the fifth to the ninth week from the onset. Swelling becomes more rigid and the wrinkles around the joints begin to disappear. The skin takes on a tight shiny luster, and pitting edema is present. Tissue atrophy becomes evident and the digits of the extremity take on a conical shape. Stage III begins very slowly, anywhere from the sixth to the ninth month from the onset. The affected extremity becomes pale and the skin becomes cool and dry, retaining its swollen, shiny appearance. The pain generally begins to subside but the osteoporosis advances, eventually causing permanent debilitating damage.

Diagnostic Measures

Diagnostic measures are not as important to the athletic trainer as they would be to the team physician. However, they are essential in the team approach to the proper treatment and cure of RSDS.

Through the means of radiological features, the decalcification associated with RSDS can be detected. Patchy osteopenia or bone atrophy occurs due to the vasomotor changes. The reflex mechanism of the capillaries decreases the circulation, increasing the metabolites, edema and the interosseous pressure, which leads to bone marrow necrosis (2). If there is a reason to suspect RSDS and the situation has been present for several weeks, x-rays may aid in the differential diagnosis.

Other means of diagnostic measures are available to the physician, such as thermograms, bone scans, scintigraphy, interosseous phlebography, and intermedullary pressure measurements. These techniques have all been described in the literature (2) as additional means of diagnosis in cases of RSDS.

Figure 2

Reflex Sympathetic Syndrome

Stage One

From the day of the injury ➡ 1 month

1) Pronounced elevated pain
2) Hyperesthesia to light touch
3) Avoidance of mobilization, "guarding"
4) Edema
5) Erythema
6) Hyperhydrosis
7) Osteoporosis

Stage Two

From 1 month ➡ 6-9 months

1) Edema becomes fusiform with fixed contractures.
2) Area becomes "glossy," "woody" and "stiff" fibratic.

Stage Three

From 6-9 months ➡ ?

1) This stage may be permanent!
2) Continuation of Stage Two.
3) It is essential that this stage never be realized!!

Treatment

The treatment of RSDS can be very frustrating for the athlete as well as the athletic trainer. The attitude of the rehabilitational team is the most important ingredient of productive treatment. A positive, persistent, and gentle approach to rehabilitation can often help ameliorate the syndrome if recognized early. Many modalities and rehabilitation techniques utilized in the treatment of RSDS have been adopted through emperical experiences.

Although motion is limited, active and passive range of motion exercises in a warm whirlpool, within the limits of pain, may be beneficial. The pressure of the turbine may prove to be an irritating force in some acute cases.

The use of contrast treatments can stimulate the vascular tree and may have a positive effect on the relief of spasm and edema mobilization (1,2,7). In addition to the contrast whirlpools, topical stimulation is often employed as an adjunct treatment. This is accomplished by rubbing a towel of soft cloth lightly across the affected area. The process may help to flood the area with normal sensory impulses and promote a normal sympathetic reflex of the sensory fibers.

Electrotherapy may be used in the treatment of RSDS.

The use of transcutaneous electrical stimulation (tens) unit has been beneficial in helping to alleviate pain in cases of RSDS (1). The effectiveness of the tens unit is dependent on patient tolerance to the stimulation. The neuroprobe may also be effective in the treatment of RSDS. With daily administration (in a distal to proximal grid pattern), the neuroprobe may elicit endorphin and enkephalin release as well as edema reduction in the affected area. This treatment may prove more beneficial when done bilaterally.

Resistive and/or manipulative exercise are most always contraindicated as it exaggerates RSDS symptoms. Normal rehabilitative procedures using these techniques that cause the condition to worsen should alert the practitioner to RSDS.

Patient input is important in this rehabilitative phase. The treatment that relieves symptoms for one athlete will not necessarily do the same for another. Therefore, the athletic trainer/therapist must patiently search his armamentarium for the treatment regimen specific to the athlete's pain and symptoms. The objective of treatment is to prevent RSDS from progressing to the third phase as well as ameliorating signs and symptoms.

Analgesics, non-steroidal and steroidal anti-inflammatory, muscle relaxants, and anti-histamines have been cited in the literature as being beneficial in the treatment of RSDS (1,2,3,4,5,7,8). The use of corticosteroids have been used in the treatment of RSDS since 1953. Prednisone seems to be the drug of choice and if administered early may be quite effective (3). The use of oral nifedipine has shown to be quite effective in optimizing pain relief in RSDS patients (5). This type of supportive medical treatment can become critical to rehabilitation if the dosages are properly timed.

The use of sympathetic ganglionic blocks with local anesthetics have been the most beneficial treatment recognized. The sympathetic block either at the lumbar or stellate ganglion can be a diagnostic tool as well as an effective treatment. As stated by case studies (1,2, 4,6,7,8,9) these analgesic blocks of the efferent pathway can relieve the pain allowing pain-free range of motion almost immediately. This dramatic effect is prominent for the duration of the block; repetition of this procedure often two, three and four times, breaks the cycle of pain relieving the problem.

A sympathectomy is the final alternative to relieve pain and obtain normal range of motion in RSDS. This surgical procedure relieves the syndrome through the excision of the affected sympathetic division in the autonomic nervous system. It is only considered after modalities, medication, rehabilitation and time have not resolved the situation. This procedure, moreover, is not always one hundred percent effective.

Case History

A 30 year old white female graduate student was referred for physical therapy September 25, 1985 with a diagnosis of anterior tibial contusion/strain. The patient had dropped a heavy bookcase on her right anterior tibialis on August 30, 1985. Prior to this she was a runner of 20 miles/week with a self-diagnosed case of "shin splints." The contusion responded to the usual treatment of ice and heat and she resumed running two-three miles/session. Pain and dysfunction returned with resumption of running and she consulted a physician who referred her for physical therapy. The patient was unable to drive her car with her right foot because of pain. Walking was becoming more painful as well. Upon examination she exhibited normal range of motion and strength of the right lower extremity. Her circumferential measurements were equal and gait was normal Tenderness was elicited over the proximal anterior tibialis, peroneals and fibula.

Treatment consisted of warm whirlpool, ultrasound, range of motion and strengthening exercises for the lower extremity at the University of Virginia Training Room. Pressure of the whirlpool turbine and ultrasound head caused discomfort and was thus discontinued. Soaking in warm water with active exercise was substituted. The patient began to notice a coldness and numbness in the proximal lower leg. The leg was cool to the touch as compared to the opposite extremity.

The pain became more intense and the patient progressed to crutches non weight bearing for two weeks without relief. She was again re-evaluated on November 11, 1985. The clinical impression at this time was possible fractured fibula. X-rays were negative with some loss of fibular medulary consistency. The patient began to have tingling in the proximal anterior compartment of the lower leg consistent with Tinnel's sign. A further bone scan revealed general vasoconstrictive phase of RSD. This led to the identification of RSD.

Further treatment consisted of warm water soaking with additional use of a moist heating pad at home. A neuroprobe point stimulator and infrared laser were also used for pain control. The patient became less symptomatic and discarded her crutches December 30, 1985 and began a graduated walking program at six months post injury. At eight months post injury the patient began running. At that time her only complaint was of occasional soreness in the anterior/lateral compartment with direct pressure associated with crossing her legs.

RSD not only was disabling physically for the patient but had a direct psychological effect on her. Until the diagnosis of RSD nearly three months post injury she felt a great deal of uncertainty and anxiety as symptoms kept getting worse. She also experienced a withdrawal from running, her only stress manager in a rigorous PhD program.

Her mental state was further affected when an intern suggested the x-rays could be cancer, infection, or a tumor. Other physicians looked with suspicion as to whether anything was really wrong with her at all. At one time she was seeing three physicians with conflicting opinions, each with little time to sit down and talk to her about her condition.

The patient experienced a tremendous relief when the problem was identified. Understanding the signs, symptoms and prognosis along with explanation and counseling by the trainer/therapists aided her peace of mind.

The effects of RSD were disruptive to the patient physically in her busy daily schedule. Psychologically the patient experienced even more frustration from feelings of uncertainty, to becoming most upset, even to the questioning of her own mental health. While therapeutic modalities were valuable in this case, education about the problem, encouragement and counseling of the patient as to realistic goals and expectations were invaluable in her return to a normal life style.

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Diagonal Shoulder Rehabilitation Using the Orthotron®:

Turntable modification to facilitate isokinetic motion testing and exercise

Kevin P. Singer, RPT, Dip PE.

There is continuing need to maximize the utility of equipment used in rehabilitation and exercise testing. Recent papers by Einhorn (1) and Knoeppel (2) have suggested additional applications for exercise equipment to extend their usefulness in the clinic.

The following descriiption of a modification to the original Orthotron® (LUMEX Inc, Ronkonkoma, NY) was completed to provide diagonal isokinetic testing during a shoulder rehabilitation program with the patient lying supine. The addition of a rotary turntable to the base section (as depicted in Figures 1 and 2) was achieved by cutting the mounting stem just above the table attachment bracket and welding a circular steel plate to the cut sections. Fixation was achieved with a central locating pin on the base plate and an Allen screw which provided locking at 45° intervals, enabling rapid variations in position of the unit in relation to the plinth (Figure 3). Additional points may be selected on the turntable to extend the number of angles available for orientating the unit, thereby improving the versatility of this device.

Positioning the Orthotron® at 45° to the subject (Figure 4) quickly facilitates an adduction, flexion pattern and the reciprocal movement accomplished by return. Other shoulder patterns can be achieved with minimal adjustment to unit and patient. This modification may be suggested where diagonal isokinetic testing and conditioning program is considered to complement rehabilitation of the shoulder complex.

References

1. Einhorn AR: Shoulder rehabilitation: Equipment modifications. *Journal of Orthpaedic and Sports Physical Therapy* 6:247-253, 1985.
2. Knoeppel DE: Maximizing equipment utilization in orthopedic and sports medicine rehabilitation. *Journal of Orthopaedic and Sports Physical Therapy* 5:373-381, 1984.

Acknowledgements: *Grateful thanks are extended to Mr. J. Garrett for the illustration and Mr. C. Arndt for technical assistance. This work was completed at the Cairnhill Medical Health Centre, Auckland, New Zealand.*

Kevin P. Singer is with the Department of Anatomy & Human Biology at the University of Western Australia, Nedlands, W.A. 6009, Australia.

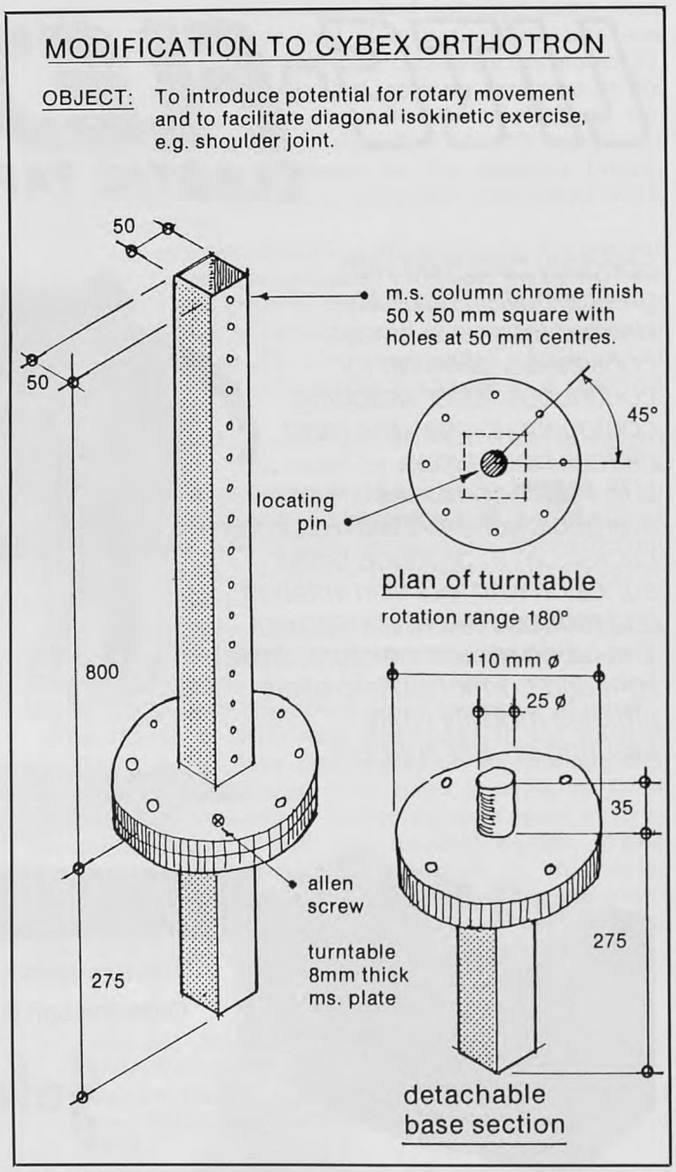

Figure 1. Schematic representation of the modified mounting stem, showing turntable in position.

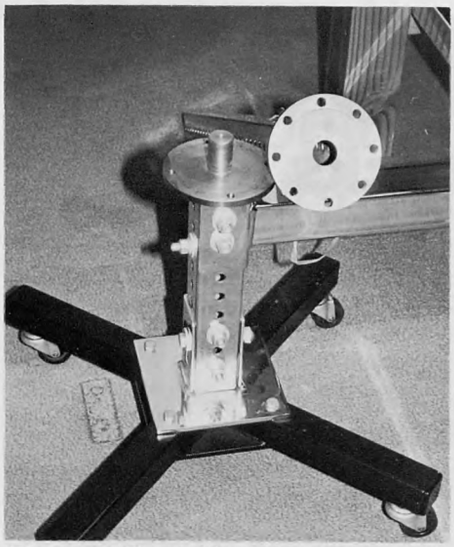

Figure 2. Turntable shown *in situ* welded to the mounting stem above the fixation arm. Holes facilitate positioning the device at 45 degree rotations.

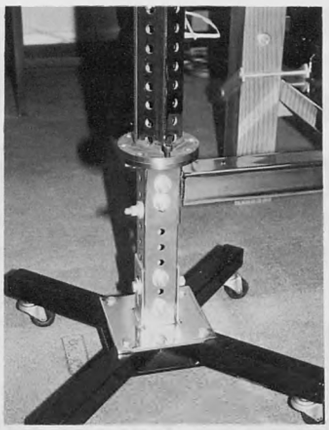

Figure 3. Modified stem shown in position at 45 degrees to the plinth. Note Allen screw used to fix turntable into position.

Figure 4. Subject demonstrating position for a shoulder diagonal pattern. ⊕

Reflex Sympathetic Dystrophy, *from page 122*

The Reflex Sympathetic Dystrophy Syndrome. *Diagnostic Radiology* 117 (Oct): 21-32, 1975.

5. Prough DS, McLeskey CH: Efficacy of Oral Nifedipine in the Treatment of Reflex Sympathetic Dystrophy. *Anesthesiology* 62: 796-799, 1985.
6. Steinbrocker O, Argyrol TG: The shoulder-hand syndrome: present status as a diagnostic and therapeutic entity. *Med Clin N Amer* 42: 1533-1553, 1958.
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8. Teeple E, Ferrer EB, Ghia JN, Pallares V: Pourfour Du Petit Syndrome-Hypersympathetic Dysfunctional state following a direct nonpenetrating injury to the Cervical Sympathetic Clash and Brachiol Plexus. *Anesthesiology* 55: 591-592, 1981.
9. Wang JK, Johnson KA: Sympathetic Blocks for Reflex Sympathetic Distrophy. *Pain* 23: 13-17, 1985. ⊕

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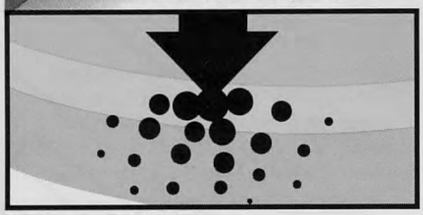

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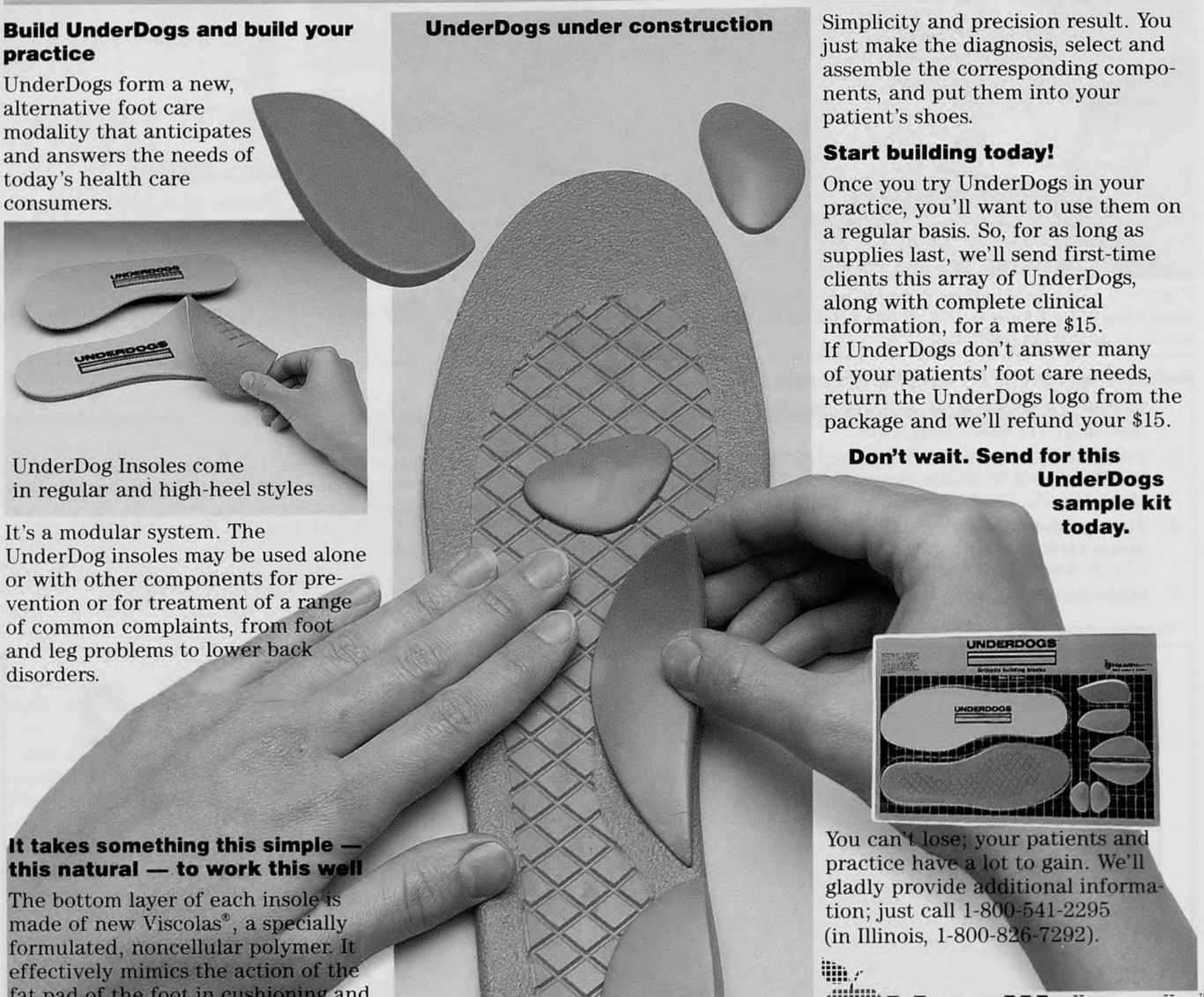

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A Tip From the Field

Injuries on the Road: Good Information Reduces Problems

Bradley J. Miles, ATC

Most colleges and high schools require some form of insurance to be carried on every student before they enter each school year. This process is accomplished through the purchse of a school insurance policy or by the student showing proof of coverage under their parents' policies. The information is usually kept on file with the school nurse or at the student health center on campus.

A suggestion is to have the athletic trainer make his own set of insurance records on athletes and keep these records in the training room. This is very useful in the high school, where the school nurse may work part-time and access to insurance records in an emergency situation may be impossible.

The records should be kept in the same format for continuity (example below) and should be grouped according to team. When a particular team goes on the road, the coach or student trainer could be given that team's forms in case of emergency. Thus, the student trainer, coach, or head athletic trainer does not waste valuable time in providing emergency care to the athlete.

The process of obtaining the information could be made easier by using a two-page carbonless letter which is sent home with the athlete or mailed to the parents. When this letter returns, one copy can go to the school nurse or health center, the other to the athletic trainer.

The sample shown below is just a sample.

The athletic trainer should adapt the form to fit the needs of the athletes and the school administration.

EMERGENCY INFORMATION

Name _____ Sport _____ Sex M ____ F ____

Grade _____ Age _____ Date of Birth ____/____/____

Parent's Names _____

Father's SS# _____ Mother's SS# _____

Work Address _____

Phone # _____

Home Address _____

Phone # _____

Another Person to Contact _____

Relationship _____ Phone # _____

Insurance Name _____

Policy and Group Numbers _____

ALLERGIES _____

Consent Statement: Authorizing Treatment

Parent's Signature _____

Student's Signature _____
(if over age 18)

Bradley J. Miles is Athletic Trainer for Sports Medicine Services, Chattanooga, Tennessee.

National Office Notes

IT'S LITTLE LEAGUE SEASON!

If you are a little league coach or volunteer, and if you can keep 20 or so 8-to-12 year old players still long enough to view a video, you may be interested in "Dick Howser's Baseball Workout". The video is endorsed by the Dixie Youth Baseball League and is currently the only program of its kind available at The National Baseball Hall of Fame. Mr. Howser, manager of the 1985 World Series Champion, Kansas City Royals, along with Rod Delmonico, noted baseball author and assistant coach at Florida State University, have put together a comprehensive and informative presentation for young players, coaches, parents, athletic directors, and fans. For complete information call New Image Studio toll free at 1-800-433-0156.

CALL FROM THE B.O.C.

Maria Hutsick, Chairperson for the Written Exam, would like to get your input and/or suggestions for the continued upgrading of the Certification Exam. See her letter to the Editor-in-Chief in this issue.

CEU OFFICE SAYS . . .

PLEASE fill in ALL the blanks when completing the CEU Report Form. The "category" can be determined by reviewing the Continuing Education Requirements listed in the Winter '86 issue of the Journal. The space for your membership number is NOT for your Certification number. In the space allotted for an address, please *do put your mailing address* — don't leave it blank. Accurate completion of this form will expedite processing.

INSURANCE BENEFITS

Every new NATA member receives a membership packet containing our Code of Ethics, Constitution, membership certificate with membership card — AND a letter from our Executive Director, Mr. Otho Davis, as well as a letter from our insurance company explaining the life insurance benefits. It has come to our attention that some of our student members apparently find all this material overwhelming and/or too time consuming to read, and therefore they do not know that there are any accidental death benefits. It is recommended that supervising ATCs call this to the attention of their students.

MEMBERSHIP NOTE

If you are a Certified or Associate member with one of the new Student classifications, you are required to submit documentation of your continued enrollment in school. This is an annual requirement. Ideally, the documentation should be received in the National Office by September of each year before the October billing statements are mailed.

WHY DO PEOPLE RUN?

A new film taking a whimsical but informative approach to answer the question posed in its title, "Why Do People Run?", is being distributed on free loan to schools by Karol Media. The 18½ minute program is available in VHS and 3/4" videocassettes, as well as 16mm. The film talks about the work of doctors, biomedical scientists and sports experts in the design of running and leisure shoes; uses motion picture x-rays to show the foot's anatomy and the movement of the foot in the shoe; shows how the slow-motion camera and computer data analysis are used in testing shoes; and discusses the great variety of materials used in shoe manufacture. To request playdates for "Why Do People Run?" write to Karol Media, 22 Riverview Drive, Wayne, NJ 07470, specifying format and at least two choices of playdate.

COLUMBUS STUDENT HOUSING
(A reminder from the Spring issue)

Housing can be arranged for students on the campus of The Ohio State University for the duration of the 1987 Convention. Transportation to and from the convention location (15 minutes away) will be provided. Housing is available in singles, doubles, and quads. Meal tickets can also be purchased. Should you need to make arrangements at this late date, contact Bill Davis, Assistant Trainer, Ohio State (614/292-1164) and he can tell you if there are any accommodations left.

CORRECTION

The listing of members certified in 1986 which appeared in **Association Activities** of the Spring issue omitted Arnold T. Bell of District 9. Arnold is very much a Certified Athletic Trainer! He serves on the NATA Minority Athletic Trainers Committee, is being published in this issue, and is very active in our Association and his district. But apparently on the day our computer ran off the list, he was only a "blip." Sorry about that, Arnold.

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*The National Office welcomes new staff member, A.D. Wells. A.D. is working in the Certification department and requests that you direct questions concerning exam applications and scheduling to him.

*See page 58 in the Spring issue for the telephone number to call in your state to volunteer for the Special Olympics.

*It is not necessary for NATA members to submit a new application for membership every year. (Yes, believe it or not, some do!) Your membership is renewed when you pay your annual dues.

*Thanks for noting on the outside of your envelope which office within the National Office you wish to direct your communication.

*Please continue to use the address change "box" on the Journal's mailing envelope. This is helping tremendously in our on-going fight against MJS.

*The American Podiatric Medical Association (APMA) is celebrating its 75th year in 1987. That's quite a "feat"!

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Abstracts

John Wells, ATC, PT, PhD

"Drugs That Surpress Immunity" Bill Dunnett. *American Health,* 43-45, November 1986.

Drug users have a new reason to kick the habit. They may be setting themselves up for flu, herpes, even cancer. But what's becoming more apparent to many in the medical world is that drugs *THEMSELVES* turn people off, waging a subtle, sinister war on our immunity. The immune system of course, keeps us alive. It's a complex highly adaptive system that fights infecting organisms and remembers them so it can respond quickly if there is a reinfection. This powerful yet delicate network of defense can be weakened by such habits as stress, lifestyle changes and even pressure of final exams or a heavy business meeting. But one of the most startling attacks on our immunity is the recreational use of drugs. Doctors have long known that people who self administer such drugs as morphine with hypodermic needles get frequent and persistant infections. But a recent Italian study — confirmed by experiments in this country — shows that morphine itself depresses the immune system in mice and rabbits. Marijuana, currently smoked by over 20 million Americans, was linked as far back as the early '70's to decreased immunity. A study at Tufts University found that THC also supresses natural killer (NK) cell activity in rat spleens, which may limit their ability to fight viruses. Perhaps the most thorough investigation into the consequences of drug use on the immune system is being conducted by researchers at the Medical College of Virginia. A research team found that THC also depresses the immune system on three levels. THC delays the second line of defense — the cell-mediated immune response. The Virginia investigation also shows that marijuana slows the production of antibodies, the body's third line of defense of infection. But it's not just illicit drugs that can damage the immune system. Legal drugs, too, can increase your susceptibility to illness. A 1977 report done by Dr. David Fraser and colleagues at the Center for Disease Control showed that smokers had a 3.4 times greater risk of catching a disease that did non-smokers. There's mounting evidence that tobacco is indeed immunosuppressive. "We have enough evidence to warn people not to use drugs", says Nahas of Columbia. Another researcher likens taking drugs to speeding on the highway: "Most of the time you can probably get away with it. But if you do it often enough, eventually there's going to be a cop around."

Pamela Soares
UNC Asheville

* * *

"Head Injuries", Janette Yanko, *Journal of Neurosurgical Nursing* 16, 173-180, August 1986.

The term "head injury" encompasses a wide variety of damages and consequences. A head injury can be incurred directly, such as that caused by an impact to another area of the body and ultimately involving the head (for example, a fall onto the buttocks may result in the spine impacting onto the head). An injury can be penetrating, such as a bullet entering the skull and brain tissue, or non-penetrating, such as a baseball striking the head. Direct non-penetrating injuries can be further classified as acceleration (a moving object strikes a stationary or slower-moving head) or deceleration (the moving head strikes a stationary or slower-moving object). Facial fractures may also play a role in head injuries. A blow to the lower jaw when the jaw is closed can cause the mandibular condyles to become displaced upward and backward against the base of the skull, leading to a concussion of basilar skull fracture. (This is part of the rationale for wearing mouth protectors during contact sports such as boxing and football.) A simple facial or mandibular fracture can indirectly cause brain injury via an internal carotid artery occlusion. Skull fractures can be the source of various complications including intracranial infections and hematomas as well as menigeal and brain tissue damage. The brain tissue can suffer a variety of injuries. In addition to hemorrhages and petchiae, the brain may be concussed, contused, or lacerated. Cranial nerves can be damaged by compression or stretching due to hemorrhage or edema, by fracture lines traveling across the foramina where the nerves exit the skull, or by movements of brain tissue which exert increased tension on the nerves. In summary, the broad term "head injury" represents a large variety of more specific injuries.

Louis A. Caliendo
UNC Asheville ⊕

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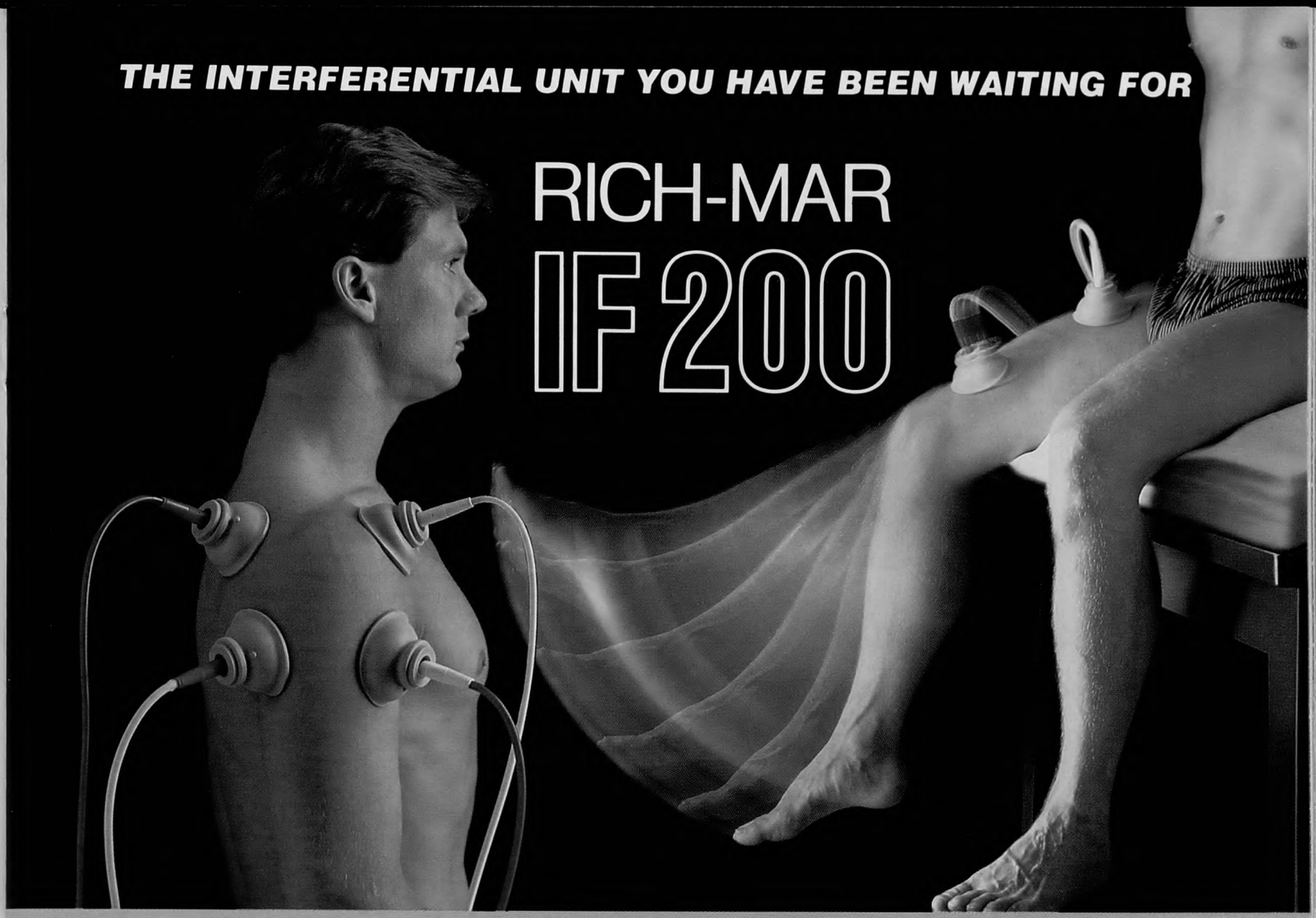

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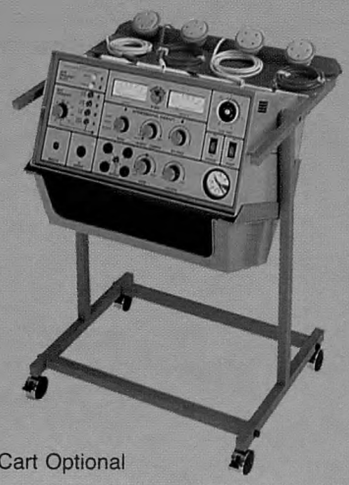

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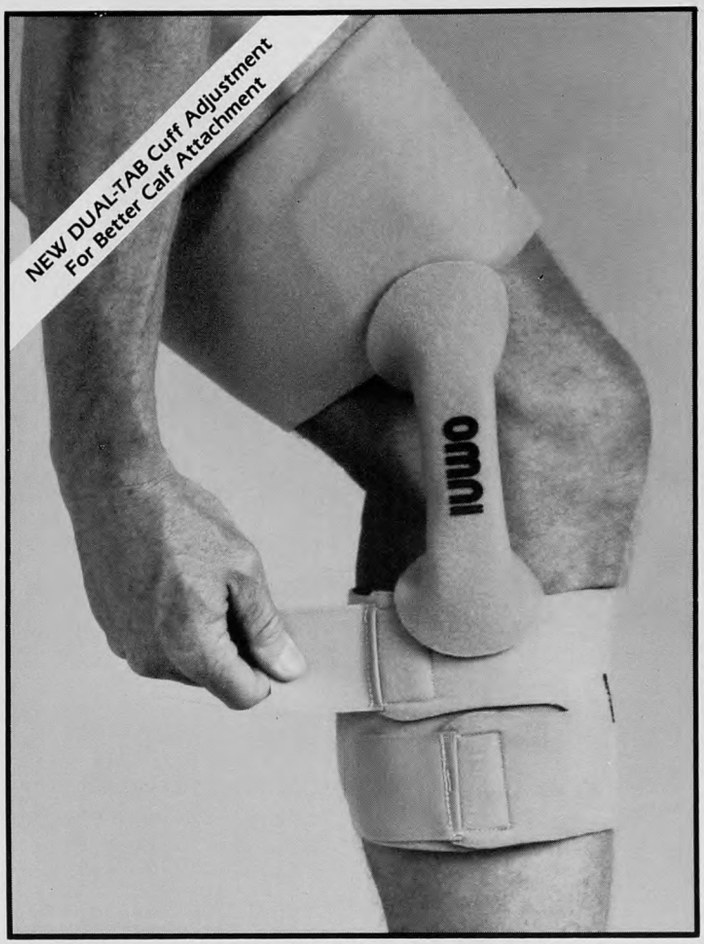

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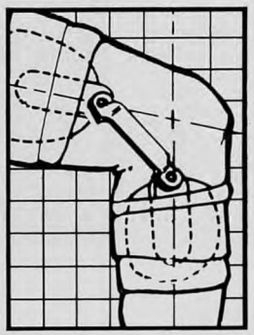

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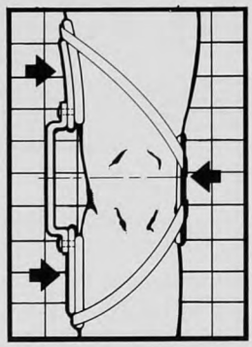

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Announcements

To: NATA BOARD OF DIRECTORS
From: Bruce M. Kola, ATC
Date: February 1, 1987
Subject: Information Report: U.S.O.C. SPORTS MEDICINE VOLUNTEER PROGRAM

Gentlemen:

The following informational report is submitted for your approval and distribution to the membership. It consists of two parts: one being the historical perspective of development of the Volunteer Program and the role of our membership in that development; and two, the current selection procedures provided by the Clinical Services Division of the U.S.O.C./Olympic Training Center, Colorado Springs.

HISTORICAL PERSPECTIVE

The U.S.O.C. Sports Medicine Volunteer Program began in 1977 with the development of the first Olympic Training Center in Squaw Valley. The capacity of that center was 1000 athletes, with volunteer ATCs being recruited to meet the medical needs of those athletes.

As the Olympic Training Center concept grew and matured, it became apparent that a more equitable basis for selection of volunteer ATCs was essential. 1979 became a milestone in the volunteer program when an objective "first come, first serve" criteria was added to the selection process to meet the demands of both OTC growth and the interest of our membership. The selection to advancement within the system is based upon an objective evaluation of on the job clinical and interpersonal skills that promote the teamwork approach to Sports Medicine. This process of evaluation is concurrently used for the volunteer physicians as well to insure the optimum professional rapport with the athletes, coaches, administrators, and National Governing Bodies (NGB).

Not all ATCs and physicians will advance on to the next stage of the selection process due to limitation numbers placed on the medical staffs by the I.O.C. and other governing bodies. Others will not advance through the system because their clinical and interpersonal skills may not have been as strong as those of their professional peers in that particular group of volunteers. Some have looked upon that as a negative. I must point out that not every ATC or physician can advance through the system based on sheer numbers. I would also interject that as a retired veteran of that system, I strongly prefer an evaluation process that is based on clinical and interpersonal skills as opposed to the thickness of one's curriculum vitae. Simply stated, the U.S.O.C. Sports Medicine Volunteer Program is no longer a "political football."

Lost in much of the mythology surrounding the OTC Volunteer Program is the educational and public relations components that each ATC finds through his/her experience. To many, if not most, of the ATCs who have spent time at an OTC the chance to work with a variety of new sports, superb physicians, and a complete range of modalities can only be interpretted as a very positive extension of one's continuing education. Exposure to the Exercise Physiology, Biomechanics, Sports Vision, Sports Dentistry, Sports Nutrition and other ancillary programs that fall under the umbrella of the Sports Medicine Program of the U.S.O.C. must be and have been an excellent experience for those volunteers involved.

The public relations aspect of our organization is just beginning to bear fruit. The Volunteer Program has aided in that effort since its inception in 1977. The Clinical Services Program has received a great deal of recognition by not only the general public, but more importantly the physicians, administrators, coaches and athletes involved in the U.S.O.C. programs. The role of the ATC has been recognized, promoted, and valued as a primary health care provider of the amateur athletes of this country.

The scope of involvement of our membership in the Volunteer Program is a very large one. Since 1977, well over 1000 of our Certified members have completed internships in the Volunteer Program. Since 1980, ATCs on duty at the Olympic Training Centers have accounted for 960 man days per year, 825 man days per year at Olympic Sports Festivals, and 250 man days at sanctioned Games. The total work by ATCs is over 20,000 hours of service provided per year. This is the largest volunteer hour-load of *any* discipline in Olympic Sports Medicine.

There are currently 90-110 ATCs per year involved in the Program: 56 ATCs in each Olympic Sports Festival and 40-55 ATCs in the Olympic Training Centers — almost all new and in their first experience at the OTCs.

Since 1979, there have been 127 different ATCs in sanctioned Games. It is essential to note that this number is representative of all areas of Athletic Training including high school, college and clinic.

Of those ATCs at the Olympic Sports Festivals, 25 percent are returning, while 75 percent are involved in their first Festival. N.G.B. recognition of the contribution of the ATC to their programs has resulted in placement of 39 of our members on foreign trips since 1980.

The female membership's role in the Volunteer Program is best illustrated by the numbers involved in major Games in 1984: 7 female ATCs out of a staff of 15.

The current trends in Sports Medicine and Olympic Sports Medicine are rapidly changing. Many other allied health professions are involved in promoting their membership's roles in providing health care. Simply stated, they want to provide the care and perform the duties that ATCs have historically done. There is a large contingent of Volunteer Alumni in our organization who are strong in their commitment to the continuation of the ATC's role in the U.S.O.C. Sports Medicine Volunteer Program. I speak from this perspective. We must continue to support our membership's involvement to increase public and professional awareness of our role.

U.S.O.C. SPORTS MEDICINE
VOLUNTEER PROGRAM:
SELECTION PROCEDURES
(Attachment)

Bruce M. Kola, ATC
Head Athletic Trainer
The Colorado College
Colorado Springs, CO 80903

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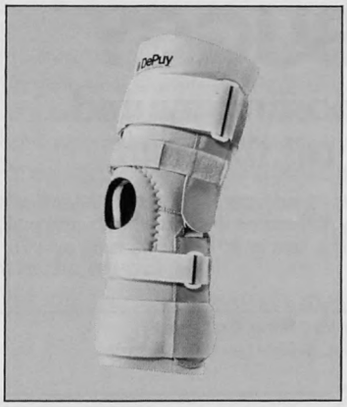

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USOC SPORTS MEDICINE VOLUNTEER PROGRAM
Olympic Training Center (OTC) Selection Procedures

Preface:

Volunteer physicians and athletic trainers complement USOC's core medical staff to provide the services to attend effectively to the hundreds of athletes from any of the 38 Olympic and Pan American Sports registered daily at the Olympic Training Centers at Colorado Springs and Lake Placid. These physicians and athletic trainers must be experienced, dedicated, and able to spend two weeks at an OTC for room, board, the experience, and possible opportunity for further service at a National Sports Festival or World University Games. From these competitions, the medical staff for the U.S. Pan Am and Olympic Teams are selected. Evaluation of the 1981-1984 group received consistently excellent ratings by athletes, coaches, and sports administrators.

The number of applications for such services exceeds USOC's opportunity to utilize all the volunteers in any given time frame. Therefore, the following criteria are utilized to fairly place each applicant in numerical order for consideration. NGB physicians and athletic trainers are encouraged to participate. Those with greater than three years' NGB experience will be given priority consideration in the coming year.

Criteria Considerations:

1. Physician applicants must possess a current active medical license.
2. Applicants must be available for a continuous two week assignment.
3. Applicants must demonstrate service during the immediate past five years as a varsity team physician or certified athletic trainer with on-the-court/field medical management responsibilities, not merely as a consultant or an athletic therapist.
4. All applicants must be U.S. Citizens.

Process:

1. When all required materials (application, information form, and curriculum vitae) are received, the application will be dated and placed in the numerical order of their arrival for an OTC volunteer assignment. All candidates' licensure will be screened by the USOC Sports Medicine Staff to determine compliance with temporary licensure requirements in Colorado and New York.
2. Whenever possible two physicians, one representing orthopedics and the second the primary and subspecialty areas of medicine, will be appointed for concurrent duty to provide the strongest medical base to accommodate the various teams in residence.
3. Selected practitioners who for legitimate reasons must reject assignments can be returned to the active file for consideration the following year at their request. This is a one time allowance.
4. The program steps are as follows:
   - No. 1 Two weeks (14 consecutive days) in the OTC program. (board and room only provided by USOC)
   - No. 2 Appointment, at USOC's invitation, to a National Sports Festival or World University Games. (This may require 2-3 weeks of service with transportation, board and room provided by the USOC.)
   - No. 3 Appointment, at USOC's invitation, to either a Pan American Games, Winter Olympic Games, or Summer Olympic Games. (This may require three to nine weeks of service with transportation, board and room provided by the USOC.)

   Evaluations are made at each program level by medical, administrative and NGB staffs to determine medical skills, rapport with athletes, cooperation with rules and policies of the Sports Medicine Council and demeanor with sports and administrative officials. This is to assure selection of the most compatible future medical team.
5. A volunteer may request requalification in the next following quadrennium if there is need as determined by the Sports Medicine Division, except for those who had been appointed to any of the four major Games in the preceding quadrennium. The USOC will reserve the right to return, however, one veteran M.D. and one veteran athletic trainer, if necessary, for program continuity.
6. Applicants who have met selection criteria may reapply anytime after qualification criteria have been satisfied.

The excellent ratings of the 1981-84 participants by athletes, coaches and sports administrators demonstrate that this program has worked exceedingly well and has helped the USOC and NGBs develop exceptionally well qualified Olympic medical volunteers. ⊕

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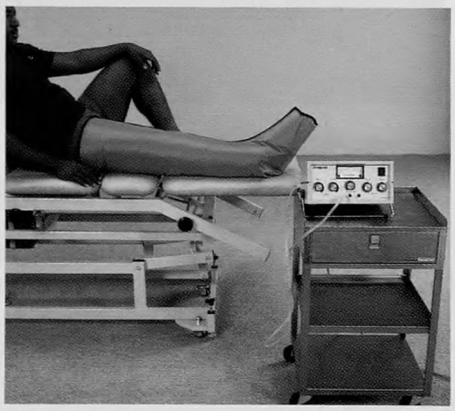

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A case for the Lenox Hill® Lightweight in facilitating Long Term Rehabilitation Programs.

PATIENT PROFILE:
Female, 29 years old, 5′3″, 114 lbs. Veteran of 14 years of gymnastic competition. Condition of chronic instability was first diagnosed following a hyperextension injury. Lachman test revealed 3+ anterior draw. Initial arthroscopic examination led to preliminary diagnosis of anterior cruciate and medial meniscus tears of both knees.

COURSE OF TREATMENT:
Bilateral medial misectomies were performed. Further evaluation indicated the necessity for major reconstruction, and surgery was begun in four stages. ACL and Lateral Collaterals were done bilaterally, followed by Posterior Lateral reconstructions. A Lateral Menisectomy was also performed on the right knee only.

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CONCLUSION:
The Lenox Hill brace can be used to allow patient mobility between and after major reconstruction, and to facilitate the rehabilitation process. In cases of chronic instability, the Lenox Hill Lightweight can be used to encourage patient acceptance of bracing as a way of life. The treatment team in this case included Douglas Jackson, M.D., Frederick Young, M.D., Donald Uttenreither, P.T., and Donald MacLaren, P.T.

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Calendar of Events

Jeff Fair, ATC, MS, CCT

June

5-7 Shoulder Rehabilitation in Sports, Wyomissing, PA. Contact Bob Engle, The Center for Sports Physical Therapy, 1150 Berkshire Blvd., Wyomissing, PA 19610.

9 Nutrition and Physical Activity: Keys to Health, Newark, DE. Contact Ann Marie Corrozi, University of Delaware, Newark, DE 19716.

14-17 National Athletic Trainers Association National Convention, Columbus, OH. Contact NATA, P.O. Box Drawer 1865, Greenville, NC 27858.

20 The Patellofemoral Joint, Atlantic City, NJ. Contact Bob Engle, The Center for Sports Physical Therapy, 1150 Berkshire Blvd., Wyomissing, PA 19610.

22-25 American Orthopaedic Society for Sports Medicine, Lancaster, PA.

22-26 Boston Sports Medicine Institute Eighth Annual Conference, Boston, MA. Contact Alfred Roncarati, University of Massachusetts-Boston, Division of Continuing Education, Harbor Campus, Boston, MA 02125.

26 The Injured Athlete: Initial Assessment and Management Techniques, Baltimore, MD. (CEU Approval for EMT's, CRT's, paramedics, athletic trainers and nurses) Contact The Health & Education Council, 7201 Rossville Blvd., Baltimore, MD 21237; (301) 686-3610.

28-July 2 American Physical Therapy Association Annual Meeting, San Antonio.

28-July 2 University of Pittsburgh 11th Annual Basic and Advanced Athletic Training Workshop for High School Students. Contact Rex Call, Athletic Training Education Program, Suite 140 Trees Hall, University of Pittsburgh, Pittsburgh, PA 15261.

29-July 2 13th Annual Meeting of the American Orthopaedic Society for Sports Medicine, Orlando, FL. Contact AOSSM, Box 94274, Chicago, IL 60690.

July

5-9 Sports Medicine Update 1987, Jackson Hole, WY. Contact Marge Adey, Center for Continuing Education, University of Nebraska Medical Center, 42nd and Dewey Avenue, Omaha, NE 68105.

8-10 National Athletic Purchasing Conference and Exposition, Lincoln, NE. Contact University of Nebraska-Lincoln, Greg Benson, Purchasing Department, 501 N. 10th Street, Room 120, Lincoln, NE 68588-0204.

10-15 U.S. Olympic Festival '87, Congress on Sports Medicine and Science: Sports Medicine and Science, July 10-12, Chapel Hill, NC, and Athletic Injuries, July 13-15, Durham, NC. Contact Mary Margaret Newsom, Head, Department of Education Services, USOC, 1750 East Boulder Street, Colorado Springs, CO 80909.

10-11 New Mexico Athletic Trainers' Association Annual Meeting, Las Cruces. Contact George Westbrook, Sports Medicine Clinic, Box 30001, Las Cruces, NM 88003-0001.

13-17 Universal Fitness Institute, Cedar Rapids, IA. Contact Universal Gym Equipment, Inc., 930 27th Avenue S.W., P.O. Box 1270, Cedar Rapids, IA 52406.

13-17 Teaching Stress Management and Relaxation Skills, La Crosse, WI. Contact Philip K. Wilson, La Crosse Exercise & Health Program, University of Wisconsin - La Crosse, La Crosse, WI 54601.

20-24 Cardiac Rehabilitation, La Crosse, WI. Contact Philip K. Wilson, La Crosse Exercise and Health Program, University of Wisconsin-La Crosse, La Crosse, WI 54601.

23-25 Southwest Athletic Trainers Association 33rd Annual Meeting, Arlington, TX.

26-31 Athletic Health Care System National Leadership Institute, Seattle, WA. Contact Chuck Marquardt, ATC, 300 Edmundson Pavilion, GB-15, University of Washington, Seattle, WA 98195.

ATHLETIC TRAINING will list events of interest to persons involved in sports medicine, providing items are received well in advance of publication. Please include the name and address of the person to contact for further information. Send items for the CALENDAR to Jeff Fair, Head Athletic Trainer, Athletic Department, Oklahoma State University, Stillwater, OK 74074. Refer to the following dates to ensure your event will appear in the desired issue. ⊕

ISSUE	COPY DUE DATE
Spring	December 15
Summer	March 1
Fall	June 15
Winter	September 15

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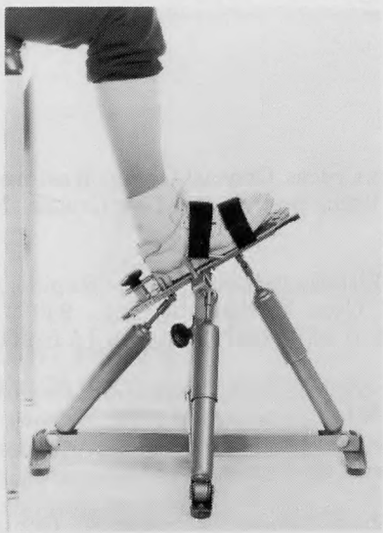

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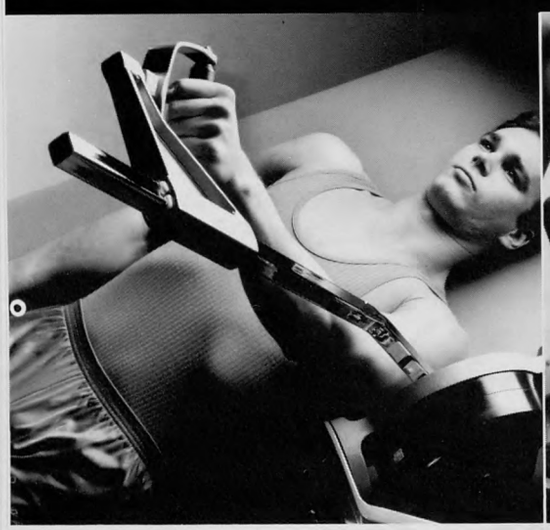

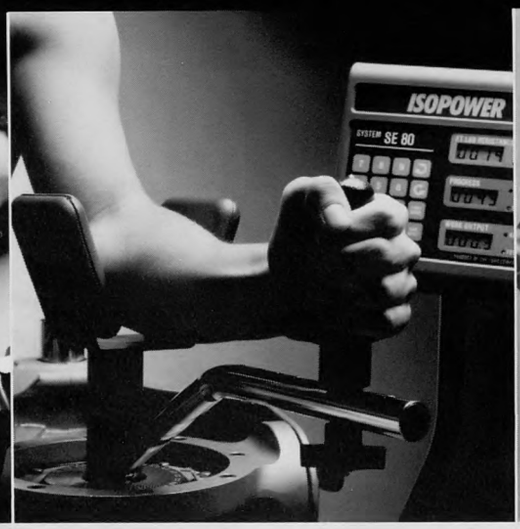

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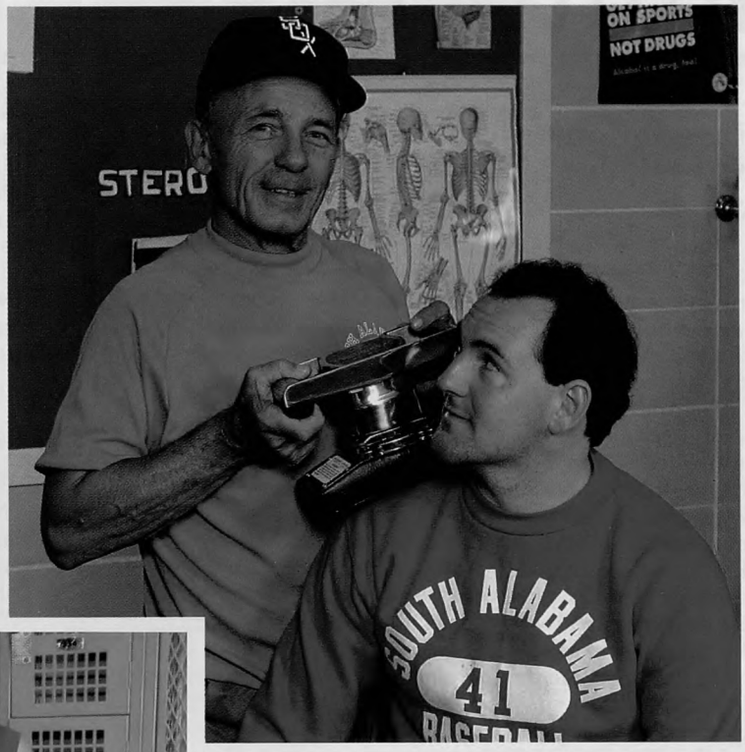

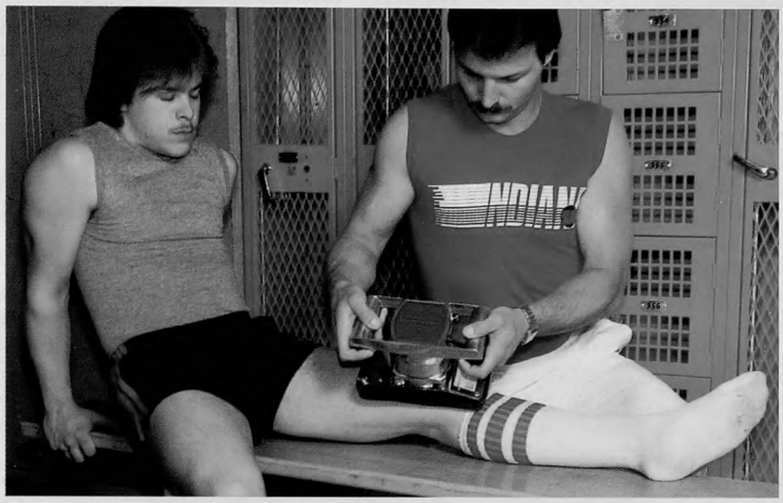

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Editorials

Free Communications and Knowledge Growth

Kenneth L. Knight, Editor

Hats off to the National Meeting planning committee, to John Powell and Russ Cagle of the Research and Injury Committee, and to the membership of the NATA as a whole. The free communications session of our national meeting in Columbus has been expanded to four hours.

The additional time was made possible and is necessary because of the increase in quality abstracts submitted to the Research and Injury Committee. Both the quality of abstracts and the total number submitted were greater than last year. In fact, there was a 40% increase in submitted abstracts over last year. I hope this trend continues. And I trust that the national meeting planning committee will continue to increase the time allotted to the free communications sessions as the need warrants.

Much of the body of knowledge of athletic training is unwritten. It is passed from one athletic trainer to another by word of mouth or through direct observation before, during, or after an athletic contest. Sometimes the recipient of idea or technique applies a different perspective, amplifies and improves on the original idea, and then passes it on to someone else. The unfortunate thing is that not enough people benefit from this word of mouth process. I'm convinced that most athletic trainers have ideas, skills, or techniques that many others would benefit from. The free communication session of the national meeting and clinical symposia offers many the opportunity to benefit from these ideas.

Elsewhere in this issue of *Athletic Training, JNATA* the abstracts are published. We feel that publishing these abstracts will help our readers in a number of ways. First it will allow those who attend the national meeting to preview the free communications session by reading the abstracts ahead of time and then choose those papers they want to hear presented. Previewing the abstracts gives you time to think about the ideas to be presented and to formulate questions for the author of the paper. Therefore the discussion following the paper may be more indepth.

Secondly, those who do not attend the national meeting, or who have other obligations at the national meeting at the time of the free communication session, will at least have some information from the free communication session. Additional follow-up can be accomplished through a letter or phone call to the author if necessary. Thus all members of the NATA can have at least partial access to the knowledge and ideas of the free communications.

A third benefit is that the main ideas of the free communication sessions are preserved for later reference. Even if you heard the presentation, you may not be able to recall some of the details of the presentation after you return home. And those who want to amplify or challenge the ideas through research or writing have a point of reference for all to examine.

Once again, thanks to all who made this possible. And to those of you who may have submitted an abstract that was not accepted, hang in there. Try again. Refine your abstract and then resubmit it. To those who thought about submitting an abstract but didn't get the job done, please try harder for next year. To others, seriously think about it. What do you know or do that is unique? We as individuals and the profession as a whole grow only to the degree to which we gain new knowledge. And new knowledge comes as we examine, evaluate, weigh, consider, debate and defend ideas of others as they relate to our own.

Major League Baseball Trainers Lend Some Help to Their Friends

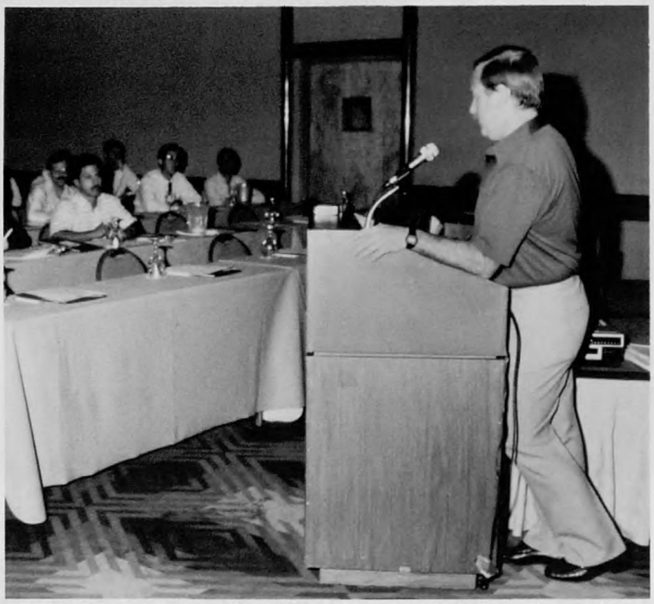
Ninety-five percent of athletic trainers in minor league baseball attended the first annual sports medicine seminar held in March by The Professional Baseball Athletic Trainers Society (PBATS).

"The near capacity turnout clearly demonstrates minor league trainers' desire to keep abreast of changing developments in the field of athletic training and sports medicine," said PBATS president Charlie Moss of the Boston Red Sox.

Some 140 athletic trainers preparing to begin their minor league season attended the PBATS seminar, which was held in two phases to accommodate persons working the pre-season for the 26 Major League Baseball organizations in Florida and Arizona.

It is widely recognized that professional baseball's athletic trainers have more difficulty meeting continuing education requirements than their colleagues in college and other pro sports. The annual NATA clinical symposium and most district meetings — where continuing education seminars are most accessible — are held during spring and summer to accommodate the majority of athletic trainers in the U.S.

"Attending anything but baseball games between March and October is almost impossible for our people,"



PBATS president Charlie Moss (right), Head Athletic Trainer for the Boston Red Sox, presides over the first annual PBATS sports medicine seminar held for the benefit of 150 athletic trainers in minor league baseball.

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Moss said.

"Athletic trainers in baseball, especially at the minor league level, have specialized needs that require special attention," Moss explained. "The purpose of the PBATS sports medicine seminar was to help provide what we perceive to be the single most critical need at this time — education."

Topics ranged from the adverse effects of chewing tobacco to lower extremity injuries. The faculty of more than one dozen included Dr. David Watson, president of the Major League Baseball Physicians Association and team physician for the Atlanta Braves; California Angels team physician Lou Yokum; author, pediatric orthopedic specialist and Boston Red Sox team physician Arthur Pappas; and NATA certification chairman Paul Grace from MIT.

Moss has already received assurance from The Quaker Oats Company, maker of Gatorade Thirst Quencher and sponsor of the PBATS seminar, that funding would be provided to stage the event again in 1988.

What is Chewing and Dipping?

American Cancer Society

Tobacco is chewed by placing a golf-ball size wad or quid between the cheek and teeth and sucking on it. Snuff is dipped by placing a pinch between the lower lip and teeth where it mixes with saliva and is absorbed. Chewing and dipping are considered to be undesirable socially by most people. The user has an increased amount of saliva and must either swallow the tobacco juices or spit often. Users also develop bad breath and discolored teeth.

What Tobacco Does to the Mouth

Tobacco and its by-products are extremely irritating to sensitive oral tissues. "Smokeless" tobacco causes many problems.

A look inside a dipper's or chewer's mouth will frequently reveal soft tissues on the inside of the cheek that appear peculiarly wrinkled, thickened and white (very much like the hide of an elephant)! These leathery appearing areas are called "leukoplakia" (resemble smoker's white patch). Leukoplakia is caused by irritation from direct contact with tobacco juice. Many cancer-producing substances have been identified in tobacco juices. About 6% of patients with leukoplakia develop oral cancer.

Tobacco chewers and snuff dippers tend to have greater tooth wear than non-users. The gums also tend to recede from the teeth in areas near where tobacco is held. The bare roots are then more susceptible to decay and are more sensitive to heat, cold, air, certain foods and chemicals. Sweetened tobacco may increase tooth decay.

Tobacco products decrease the user's ability to taste and smell bitter, salty and sweet foods. Dippers and chewers use more salt on their food. Additional sugar may also be required. Excessive salt contributes to abnormal blood pressure and kidney disease.

Tobacco juices also contain hundreds of chemicals which may delay wound healing. Tobacco can be especially undesirable when a tooth has been pulled or when oral surgery has taken place.

Other Effects of Nicotine

Nicotine is the habit forming part of tobacco and is in tobacco juice as well as smoke. It is readily absorbed through the lining of the mouth of the chewer or dipper and directly affects the nervous system. Nicotine first causes the user to be stimulated or excited and then causes him to be depressed or let down. To feel good a person with the nicotine habit needs a "booster" every 20 to 30 minutes while awake.

Nicotine also affects the heart and the rest of the circulatory system. As nicotine enters the bloodstream, the arteries tighten and become smaller, the blood platelets clot and the heartbeat rate increases. Since the heart is beating faster, it is pumping more blood through a narrower opening. A rise in blood pressure may result which may increase your risk of strokes and heart attacks. ⊕

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Current Literature

Brian Barry, ATC, MA

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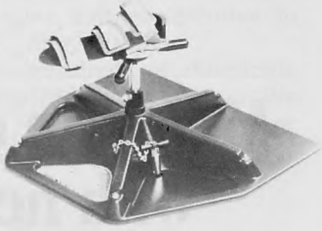

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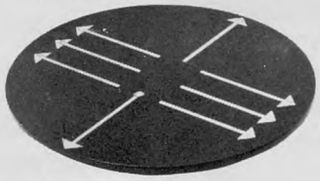

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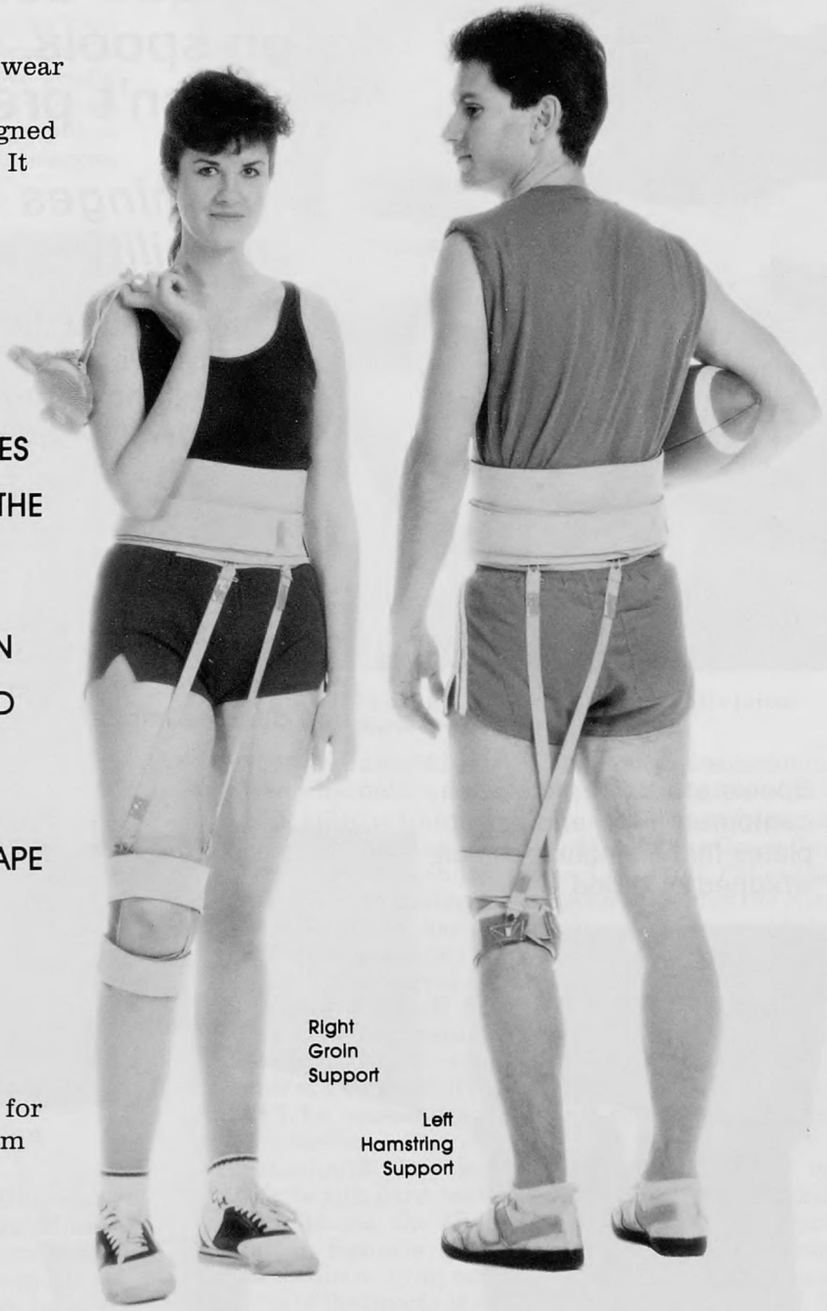

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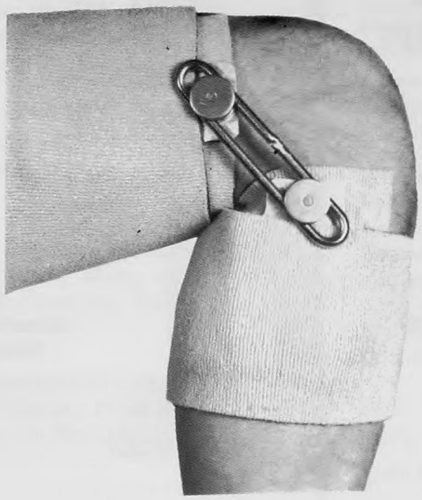

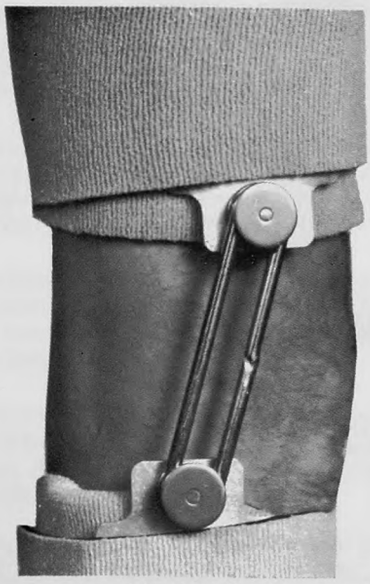

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Association Activities

David G. Yeo, ATC, DPE

Athletic Trainer of the Year

The recipients of the 1986 Athletic Trainer of the Year Awards, sponsored by NUTRAMENT, were noted in the Spring issue of the Journal. It is a privilege to briefly summarize the impressive backgrounds of the winners of this prestigious award. The following biographical material is the courtesy of Mike Samet of The Drackett Company.

Hal L. Hilmer - High School Division
John Hersey High School, IL

A 1979 graduate of Bowling Green State University with a bachelor's degree in health education, Hilmer also holds a master's in health education from Miami (OH) University. He has spent his entire post-graduate training career at John Hersey High, where he is in charge of athletic training for all sports as well as the adaptive physical education program for physically disabled, injured, or ill students.

Hilmer is entering his fourth year as NATA District IV representative to the NATA Board of Certification. He has also spent three years as State Secretary for the Illinois Athletic Trainers Association and has served as an athletic trainer for the Prairie Games since 1984. He also works with the Illinois Athletic Congress, providing athletic training for its youth track and field competition. Hilmer was recently named to the 1986 list of Outstanding Young Men of America for his dedicated community service.

Dean Kleinschmidt - Professional Division
New Orleans Saints, LA

A 1969 graduate of Indiana University, Kleinschmidt received a bachelor's degree in health and safety with a major in athletic training. While a student at Indiana, Kleinschmidt spent summers working for the Green Bay Packers and the legendary Vince Lombardi. Following graduation from Indiana, Kleinschmidt joined the New Orleans Saints as Assistant Trainer. He assumed the Head Trainer position in 1971, at the age of 22.

Kleinschmidt serves on the board of directors of the Professional Football Athletic Trainers Society as the organization representative to the National Football Conference. PFATS members voted Kleinschmidt and his staff the 1986 Athletic Training Staff of the Year in the NFL for outstanding service to their players, team, and profession.

Kleinschmidt has lectured around the world on athletic health care, including dates with the Swedish Olympic teams, the Middle East Sports Science Symposium in Bahrain, and the University of Chiuahua sports medicine symposium. He also serves as Clinical Director of the Sports Medicine Center at the Slidell (LA) Memorial Hospital.

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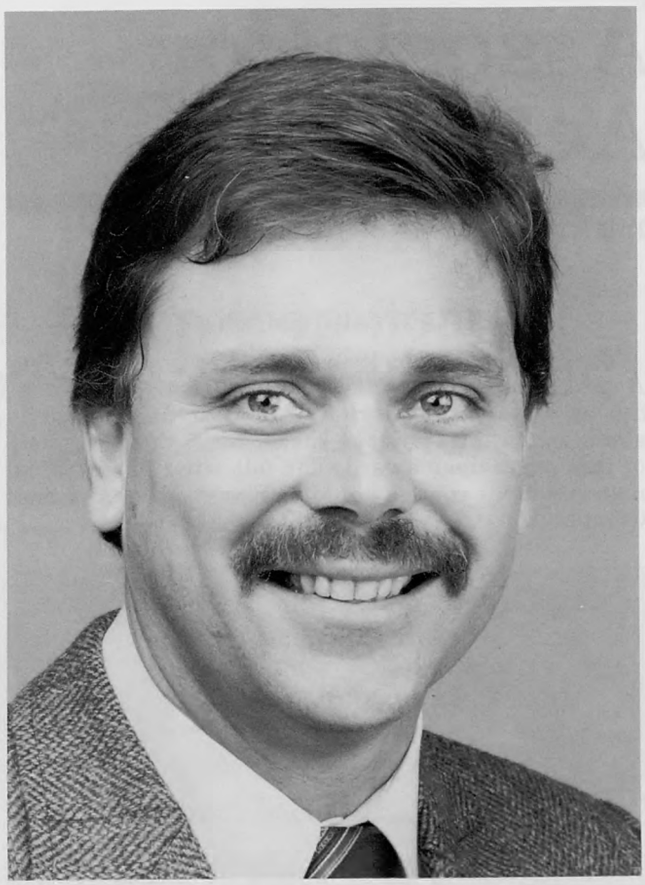
Donald Lowe - College Division
Syracuse University, NY

A 1964 graduate of Kent State (OH) University with a bachelor's degree in health and physical education, Lowe also holds a physical education graduate degree from Kent State. During his undergraduate days he began to work with the Kent State training staff and directed his coursework toward future athletic training. After graduation he accepted a job at Crestwood High School in Mantua, OH where he taught science, biology, coached and also served as athletic trainer. Lowe returned to Kent State as a graduate assistant in the summer of 1965. He became Assistant Trainer during the 1966-67 school year and Head Trainer in 1969.

He remained at Kent State until 1975, when he accepted the Syracuse job. His responsibilities included education and supervision of seven graduate assistants, and overseeing the care of all men and women athletes. Lowe serves as adjunct professor in the physical education department, teaching athletic training and sports medicine, injury prevention, and kinesiology.

Lowe is in his second, three-year term as Secretary of NATA District II, and serves on the national Membership Committee, of which he will become chairman in June. He is the 1983 recipient of the Thomas Sheehan Award as tops in the New York State Athletic Trainers Association and in 1986, completed a term as president of that organization.

In addition, he served as a trainer for the 1983 Pan American Games in Venezuala, trainer for the 1985 USA Select Basketball Team which competed in Taiwan, and as a trainer for two Olympic Festivals, 1981 and 1982, and will again be part of the sports medicine team for this year's games in Raleigh/Durham, NC. Lowe also wrote and consulted for the textbook on training, *Athletic Training and Sports Medicine,* by the American Academy of Orthopedic Surgeons.



Chip Marchbank - Junior College Division
Golden West College, Huntington Beach, CA

Marchbank attended Fullerton Junior College (CA) before graduating from Long Beach State in 1973 with a bachelor's degree in Physical Education. Upon graduation, Marchbank accepted an assistant trainer position at Northwestern University, and worked as a trainer for the old College Football All-Star Games.

In 1974 he returned to Long Beach State to work on a graduate degree. By then his value as an athletic trainer became known to Westminster (CA) High School, where he accepted a position as the first paid athletic trainer in the school district. No sooner had he set up shop than the Golden West College job became available. In addition to his responsibilities for 20 sports, Marchbank runs a rehabilitation program for stroke, heart attack, Parkinsons, and multiple sclerosis patients through the Community Services Program at Golden West, using school facilities. the success of the program allowed the school to recently build a new 2,000 square foot facility, with the stipulation that Marchbank be able to use it to practice his first love — athletic training.

continued on page 166

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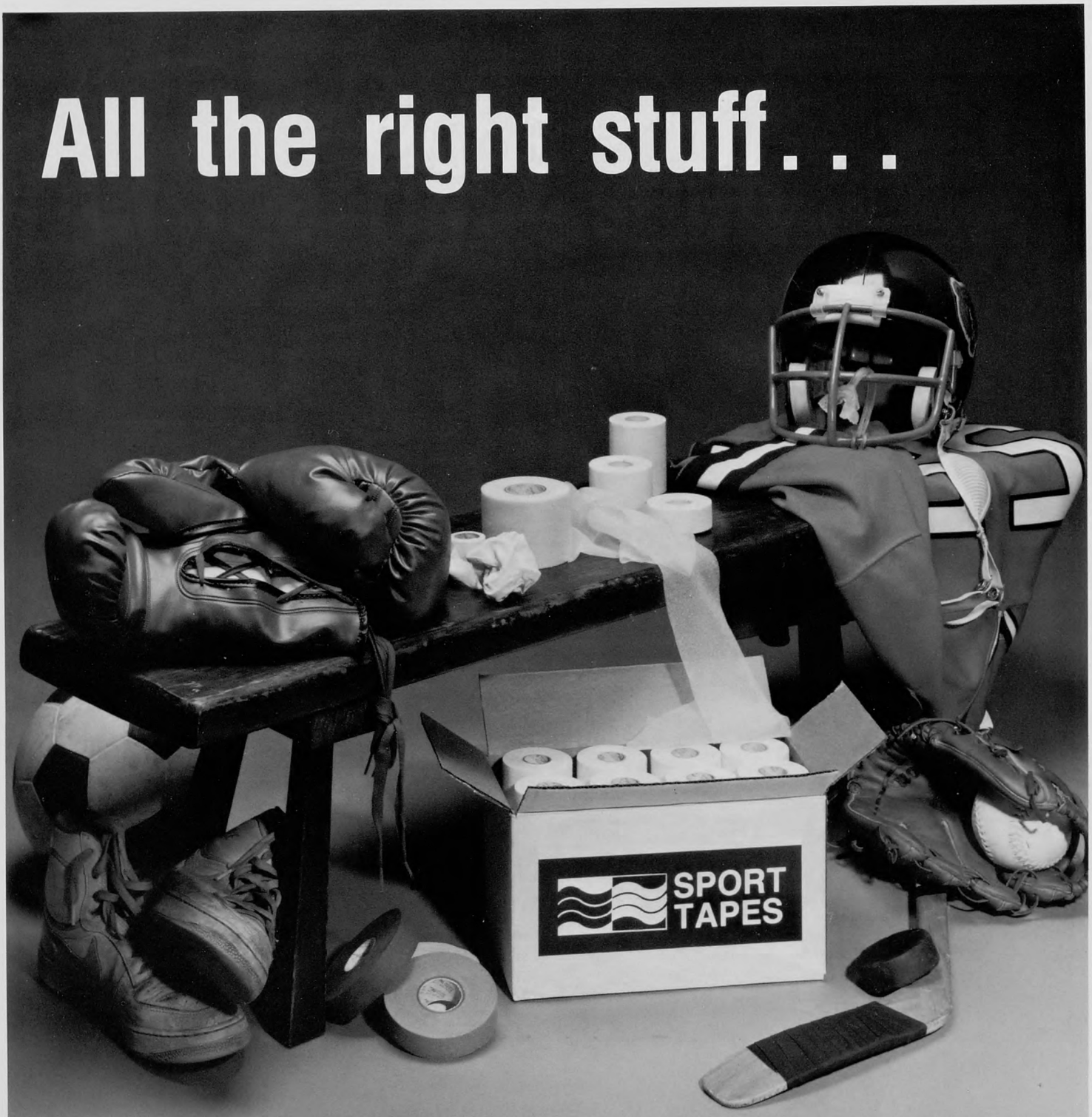

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ATC Demand Rising

Pro Football Athletic Trainer

Rising public awareness of sports medicine is generating unprecedented demand to fill new health care positions. And there is little reason to question its growth potential. Consider the level of activity:

— Twenty million joggers in the U.S. and 55 million adults overall say they exercise on a regular basis.

— There are 12,000 commercial health clubs and a $12 billion fitness equipment industry in the U.S.

— Approximately 9,000 corporations are offering Employee Assistance Programs (EAP) up from 700 companies in 1970.

— A concerted effort is underway to provide better health care for the nation's five million high school athletes, spearheaded by the National Athletic Trainer's Association.

The need for more certified health professionals in America's 24,000 high schools has existed for years, but rarely has it found its way to the top of administrator's priority lists. Even in this age of health awareness, less than five percent of all high school athletic programs have a certified athletic trainer on staff. Concerned parents are asking why. And the risk of litigation is weighing heavy on educators' minds.

Quick Energy?

Running and Fitnews

B12 Shots for Quick Energy: A common myth is that vitamin B12 injections will give you a boost of energy when you are tired. "Vitamin B12 injections will not pep you up unless your tiredness is caused by a deficiency of that vitamin," according to Gabe Mirkin, M.D. B12 deficiency is rare in the United States. It occurs in only two conditions — among pure vegetarians who eat no meat, fish, chicken, dairy products, and eggs and in people who cannot absorb B12 from the food they eat, such as those who have pernicious anemia. Vitamin B12 is in all tissues except those that come from plants. It is found in dairy products, snails, spiders, whales, snakes, and anything else that moves. And, even if you went on a diet in which you ingested no B12, it would take more than five years for you to run out of the B12 that is stored in your tissues. Tiredness caused by depression, infection, cancer, or any other illness will not be helped by B12 injections. If you are tired often, check with your doctor to get a blood test. If a deficiency is causing your tiredness, most likely the culprit is iron, not B12. (Gabe Mirkin, M.D., Ar&FA Board of Directors, Silver Spring, MD)

Foot Problems Increase

News Release AAPSM

A recent increase in injuries to the feet of players in the National Basketball Association has been the cause of great concern and speculation. Blame has been attributed to shoes, floor surfaces, size of the players, and increased speed of the game.

According to the American Academy of Podiatric Sports Medicine (AAPSM), there is no clear villain. However, shoes get more than their share of the blame. But since shoe companies have been custom-designing shoes for the stars who endorse them, they are better constructed in terms of stability and shock absorption than ever.

One factor that is clearly to blame for the injuries to players is the increased demands of the sport. Basketball is one of the most stressful sports for the knees and feet because of the running, jumping, and rapid direction changes involved. Many players are involved in summer league ball. Training camp entails twice-a-day practices. The season consists of 82 games, plus playoffs. Some players are in a game 40 to 45 minutes. They frequently have daily practice during the season. All this, plus the constant travel increases fatigue and the potential for injury. In addition, players are taller and faster than they were some years ago.

According to Dr. Paul Taylor, Secretary/Treasurer of the AAPSM, and the podiatrist for the Washington Bullets basketball team, "All of these factors provide an increasing opportunity for injury, especially to the foot which must absorb over three-million pounds of pressure during the course of a game. (This figure is based on the assumption that a player runs approximately six miles during a game, and with each foot strike at least twice the body weight - average 200 pounds - giving 400 pounds with each foot strike, times 9,000 per game, equals 3,600,000 pounds.)"

This incredible beating all too often results in athletes suffering more injuries than necessary. Sports podiatrists should provide the link between shoe companies, athletes, and their injuries. Many shoe companies consult with podiatrists to analyze elite athletes and evaluate their needs.

Obesity

Contemporary Nutrition

The evidence is now overwhelming that obesity, defined as excessive storage of energy in the form of fat, has adverse effects on health and longevity. Obesity is clearly associated with hypertension, hypercholesterolemia, NIDDM, and excess of certain cancers and other medical problems. Height and weight tables based on mortality data or the body mass index are helpful measures to determine the presence of obesity and the need for treatment. Thirty-four million adult Americans have a body mass index greater than 27.8 (men) or 27.3 (women). At this level of obesity, which is very close to a weight increase of 20% above desirable, treatment is strongly advised. When diabetes, hypertension or a family history for these diseases is present, treatment will lead to benefits even when lesser degrees of obesity are present.

Obesity research efforts should be directed toward elucidation of biologic markers, factors regulating the regional distribution of fat, studies of energy regulation and studies utilizing the techniques of anthropology, psychiatry and the social sciences.

Children's Sports-Related Eye Injuries Mount

Prevent Blindness News

Most of the 160,000 eye injuries suffered annually by American children occur during play or sports. And baseball-related accidents result in more eye injuries among youngsters between the ages of 5 and 14 than from any other sport.

The latest available U.S. Consumer Product Safety Commission report shows that in 1983 children 5-to-14

years old suffered an estimated 2,389 injuries from baseball; 1,010 from football, and 915 from basketball. There were 275 injuries from ice and field hockey.

For the past several years, NSPB's Sports Eye Safety Committee has led a vigorous campaign to promote the use of eye protection in sports. Paul F. Vinger, M.D., a Concord, MA, ophthalmologist and co-chairman of this Committee, has crusaded to make facial protectors mandatory in hockey. In 1976, this was approved by the Amateur Hockey Association. Later, national technical standards for hockey face guards were issued by the American Society for Testing and Materials (ASTM) and by the Canadian Standard Association. By 1980, nearly all U.S. and Canadian amateur hockey organizations mandated face protectors.

Unfortunately for the children getting hurt, the more popular game of baseball has not caught up with hockey. Last year the Society's Sports Eye Safety Committee recommended that baseball batters 5-to-14 years old wear helmets with face protectors. This guard protects not only the eyes, but nose, mouth and facial bones.

"But for most amateur players, the guard is seldom used," comments Ed Hall, manager of NSPB's corporate health and safety programs, "perhaps because parents, coaches and players have not been made aware of the potential for injury. Wearing proper eye protection could make the game more enjoyable — not only for the players, but for the parents who surely don't want their child to become part of next year's tragic statistics."

Report on Chronic Disabilities Issued

News Release

The Medical Advisory Committee of the President's Committee on Employment of the Handicapped today issued its latest report, "Management of Chronic Disabilities." The 92-page report examines two "hidden" disabilities, diabetes and epilepsy.

"Management of Chronic Disabilities" is the fourth special report issued by the Medical Advisory Committee. The mission of the Medical Advisory Committee is "to encourage employers, the medical profession and other interested parties to adopt and utilize practices that will facilitate the hiring and progression in employment of qualified handicapped individuals."

The five contributors to the report have developed the subject matter from the perspective of the employability of people with chronic and troublesome disabilities. The contributors include: James C. Folsom, MD, Veterans Administration Medical Center, Topeka, KS; Gerald J. Friedman, MD, Epilepsy Foundation for the National Capital Area, Washington, DC; Robert Fried, PhD, Hunter College, New York, NY; and Robert B. Zagoria, Esquire, Princeton, NJ, in collaboration with Jerry L. Brimberry, BS and Pomeroy Sinnock, PhD of the Centers for Disease Control, Atlanta, GA.

Paul S. Entmacher, MD, Metropolitan Life Insurance Company, New York, NY and Chairman of the Medical Advisory Committee, wrote the foreword to the report.

Single copies of "Management of Chronic Disabilities" are available without charge from the President's Committee on Employment of the Handicapped, Suite 636, 1111 20th Street, N.W., Washington, DC 20036.

Editor-in-Chief Comments, *continued from page 98*

I hope that you had a good holiday season and a healthy New Year. Thanks for your cooperation. See you in Columbus.

Sincerely,

Maria J. Hutsick, L.A.T.,C.
Head Athletic Trainer

Dear Mr. Yates:

While women live longer, the quality of their life can adversely be affected if they are sedentary. Women are more vulnerable to disease such as osteoporosis and illness such as mental depression, which can be alleviated by regular physical activity.

Girls sports have made progress, but there is still a long way to go. Only 15% of youth participants in after school sports are girls; girls receive two-thirds less instructional time than boys in physical education; the over all health and fitness of young women in particular is dismal.

This inequality will be addressed in Indianapolis on June 19-21 at *New Agenda II: A Sporting Chance for Women,* national conference. The Women's Sports Foundation (WSF) will join forces with Girls Club of America and National Association for Girls and Women in Sport in conducting a forum for sharing research and advocacy information about girls sports participation.

Prominent athletes, such as Olympians Anita DeFrantz, Donna de Varona and Tracy Caulkins, will attend the conference, as well as researchers and practitioners from a wide spectrum of the sports industry to discuss social, psychological, and physiological aspects of girls and women in sports as well as lectures on professional preparation and resources for girls sport activities.

This conference is the offspring of The New Agenda conference of 1983, heralded as the most important event for the development of equality of women's sports. The 1987 conference seeks to reach every leader of girls sports and fitness in America.

I feel a story on the status of girls sport opportunities would make for an interesting feature for your readers. As a prelude to the Indianapolis conference (and the Pan-American Games), this is an opportune time to convey to administrators, parents and young women the state of sport and fitness levels in general, and the importance of regular physical fitness activity in particular.

Thank you for your time and consideration.

Cordially,

Kelly S. Swanson
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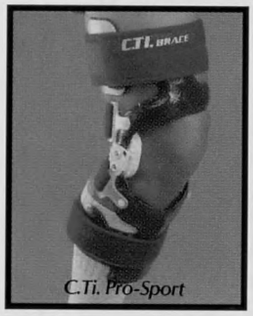

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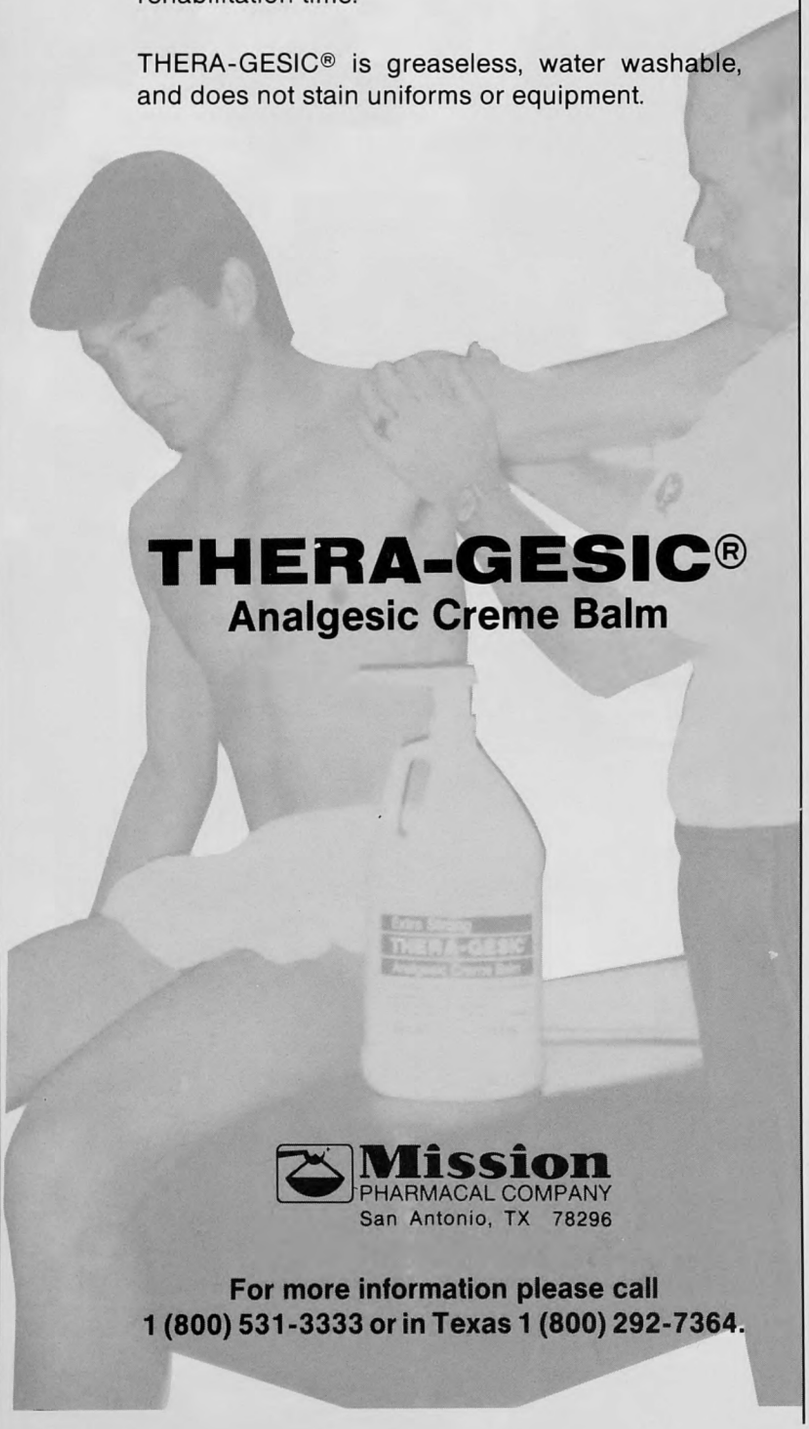

Book Reviews

Phil Callicutt, ATC, EdD

The Baseball Player's Guide To Sports Medicine
Pat Croce, ATC, LPT
Leisure Press
1607 North Market Street
Champaign, IL 61820
1987
120 pages: illustrated
$9.95

Every sport has a group of "special" injuries which are more common in that sport than in any other, and baseball, the national pastime, is no different. A baseball trainer or a player is confronted with these injuries on a daily basis from Spring training to the end of the season. These injuries are of the same magnitude to the athlete whether he/she is in the opening game of the Little League season or the finale of the Major League World Series. Correct diagnosis and treatment is extremely important in all situations.

Pat Croce has devoted a large amount of time to this very informative paperback and has given us an excellent product. It is divided into eight well written and illustrated chapters and covers all aspects of baseball related injuries and conditions. Pat starts the reader off with chapters on prevention, stretching strategy, conditioning of the throwing arm, emergency first aid, care of the common conditions, treatment of baseball injuries, and last, but not least, the ballpark diet.

Every chapter is well written and is filled with basic sound information for readers of all ages. Chapter Three, Conditioning the Throwing Arm, is the one which caught and held my attention the most. This chapter takes the reader from a stretching routine through a safe throwing routine. The common problem of rotator cuff strengthening is also covered in detail. Chapter Eight, The Ballpark Diet, is filled with common sense information on what, where, and when to eat.

I strongly recommend this well written and enjoyable book to everyone who has an interest in Sports Medicine in general. For the $9.95 price it should be considered a must for every resource library. In today's marketplace how can you pass up the opportunity to get an excellent book at an excellent price?

Recipes For Fun

New Play Guide for Disabled Children Stresses Activities for Entire Family

(EDITOR'S NOTE: In a departure from our usual format and subject matter in **Book Reviews**, this review is presented in conjunction with the Journal's promotion and support of the Special Olympics.)

Parents of young children with disabilities are often frustrated by the challenges of fully participating in their children's development. They may feel they need the help of specialists to promote important motor, sensory, language and other development. Yet, they often find that these specialized services are lacking or inadequate in their communities.

"RECIPES FOR FUN", just published by Let's Play To Grow, presents a solution, offering hundreds of illustrated ideas for games and activities that parents

and siblings can participate in along with the child with a disability. Let's Play To Grow is an education, play and recreation program for children with disabilities and their families, created by the Joseph P. Kennedy, Jr. Foundation. It serves thousands of families throughout the world through Local Let's Play To Grow Clubs, publications and special events.

"There is a myth that only a specialist can design a program which will promote the child's development," says Eunice Kennedy Shriver, Executive Vice President of the Kennedy Foundation and founder of Let's Play To Grow which published the guide with a grant from the Equitable HCA Corporation.

"The truth is," she says, "that while many young children with disabilities need physical, speech, occupation and other therapy provided by professionals, it is critically important for children with disabilities and their parents to enjoy the simple, spontaneous play activities that should by a part of every child's experience."

In preparing the non-technical guide, staff members of the Let's Play To Grow program were assisted by more than 30 parents, educators, therapists and other experts. All the "recipes" for the games, which carry such names as "Hide and Find", "Family Bunny Hop", "Backyard Waterslide", come with clear directions, a list of "ingredients," and explanations of the benefits of each activity.

Linda Schulz, Director of Let's Play To Grow, says the new guide shows parents how best to adapt or enrich an environment so that the child with a disability can express fully his or her natural capacity to learn and grow." For example, she says, "to make sure a child with a visual impairment gets the most from playing with toys, parents should use bright-colored or shiny toys to take advantage of any residual vision, or toys that make a noise or have an interesting texture to help assure the development of the child's other senses. These are the kinds of practical tips we have included to make each activity as effective as possible and to help parents develop confidence in their abilities to promote their child's development."

"RECIPES FOR FUN" can be ordered for $8.50 plus $1.50 postage and handling directly from Let's Play To Grow, 1350 New York Avenue, N.W., Suite 500, Washington, DC 20005. Also available is free information about starting a Let's Play To Grow program in your community. ⊕

Current Literature, *from page 148*

The Use and Misuse of Sex Chromatin Screening for 'Gender Identification' of Female Athletes. de la Chapelle, A. *Journal of the American Medical Association,* 1986 October 10; 256(14): 1920-1923.

Gender Testing in The Olympics [editorial]. Simpson, J.L., *Journal of the American Medical Association,* 1986 October 10; 256 (14): 1938.

Amenorrhea in the Adolescent Athlete. Exploration of a Growing Phenomenon. Litt, I.F., *Postgraduate Medicine,* Vol. 78, No. 5, November, 1986: 245-7, 250, 253.

Pediatric Team Physicians, Luckstead, E.F., *Pediatrics,* Vol. 78, No. 5, November, 1986: 941-942.

[Evaluation and Treatment of Lateral Ankle Sprain in the Emergency Department; Is Systematic Radiography Necessary?] Bealieu, M.D., et al. *Journal of the Canadian Medical Association,* Vol. 135, No. 9, November, 1986: 1003-1006. (English Abstract) ⊕

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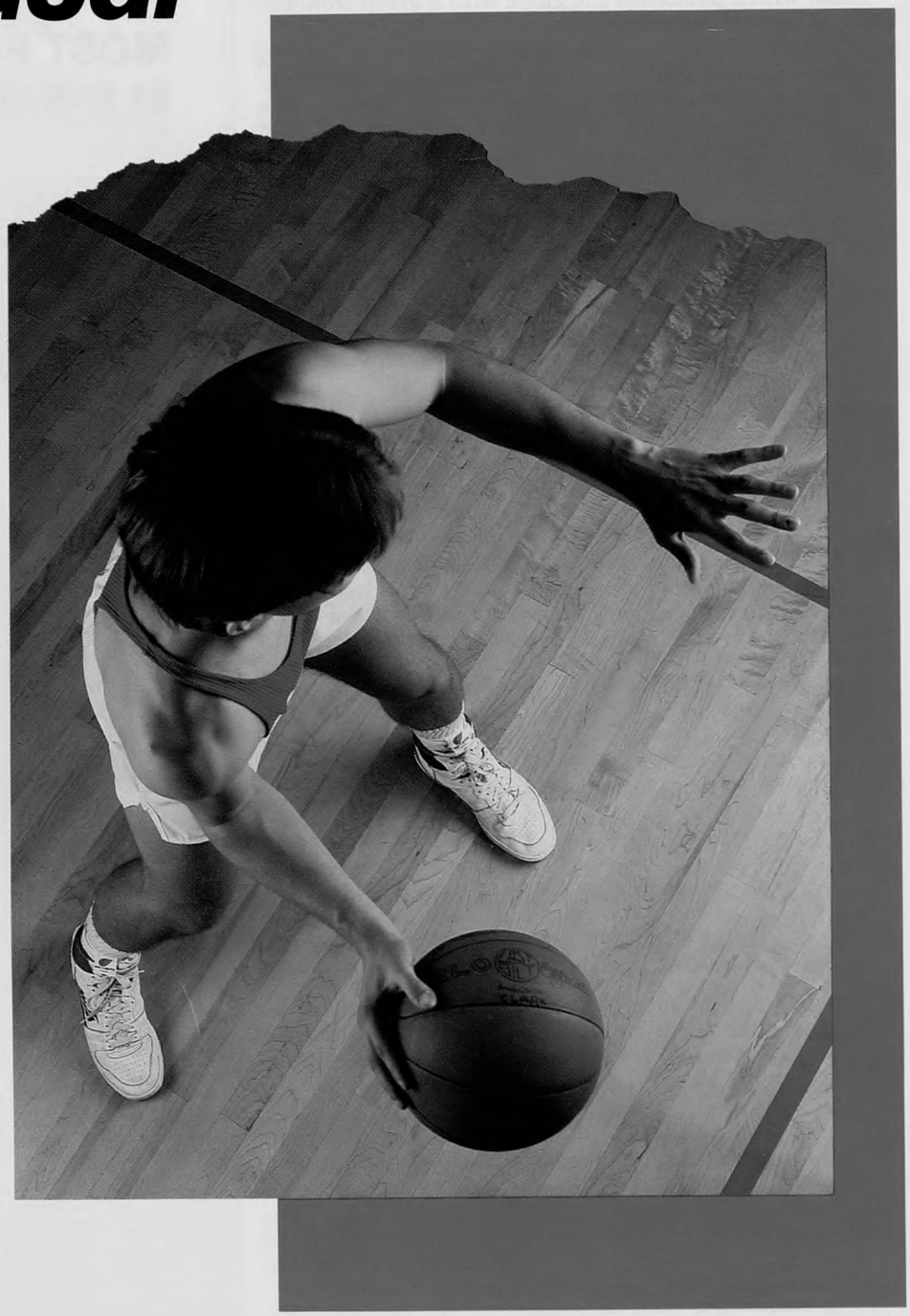

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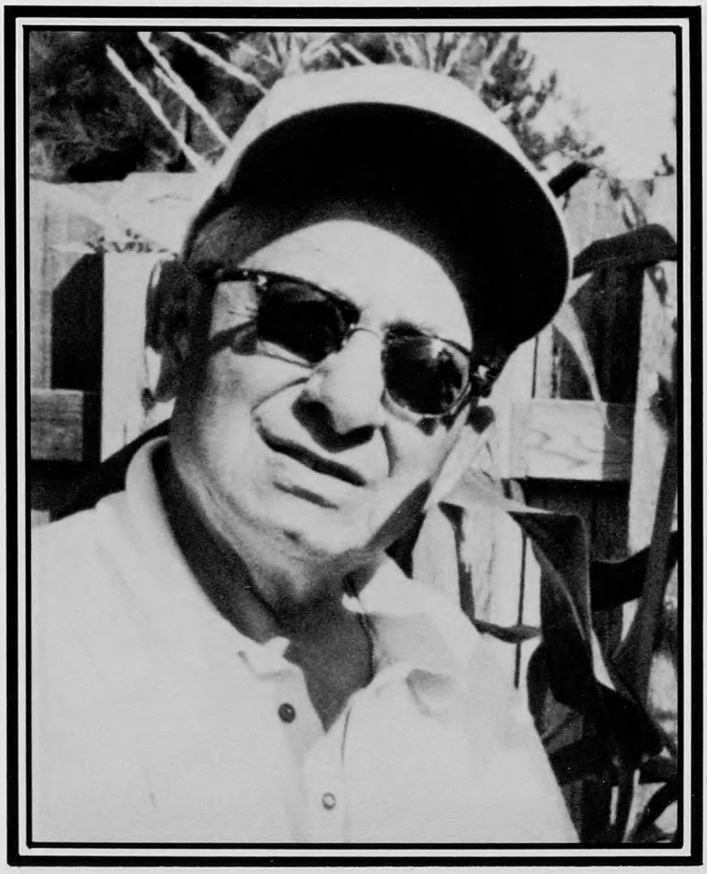
In Memoriam



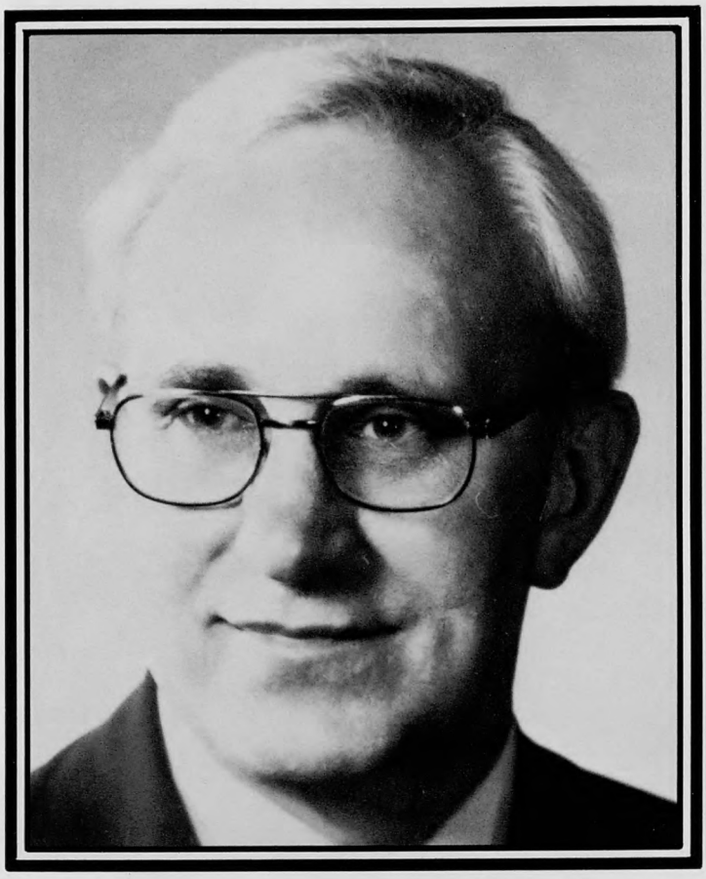
Raymond C. Mauro
May 28, 1903 - November 3, 1986

Ray "Doc" Mauro, an Honorary member of the National Athletic Trainers Association, died in Spokane, Washington on November 3, 1986 at the age of 83. "Doc" was a long time trainer at Gonzaga University in Spokane. He also served as a trainer with the Washington Redskins (1936-42) of the National Football League and the New York Yankees (1946-48) of the All-American Professional Football League. Under his care, the Redskins won two NFL titles.

"Doc" Mauro, born in Colorado but reared in Spokane, began his career as a trainer in 1929 with the New York Football Giants and ended his training career in 1948 after working with the Football Yankees. Mauro served as promotional director with the Spokane Indians baseball team in 1952 and was the athletic director of the Spokane Elks Lodge from 1952-57.

Ray "Doc" Mauro was a pioneer in the profession of Athletic Training. His guidance, leadership, and personality will be sorely missed to our profession. The ingenuity and integrity of trainers like "Doc" has allowed our profession to develop to our present levels of excellence. Our sympathies are extended to his wife, Mary.

In Memoriam



John L. Sciera
June 1, 1927 - March 28, 1986

John Sciera graduated from Cortland State Teacher's College with a Bachelor of Science degree in Physical Education in 1952. He continued on to the University of Buffalo for Certification in Physical Therapy. He stayed at the University of Buffalo as the Head Athletic Trainer from 1958 through 1965, while also completing a Master of Education degree in Physical Education.

In 1965, John returned to his alma mater to serve as the Head Athletic Trainer and develop the first NATA-approved undergraduate curriculum in New York State. He served in this capacity until his retirement in 1985.

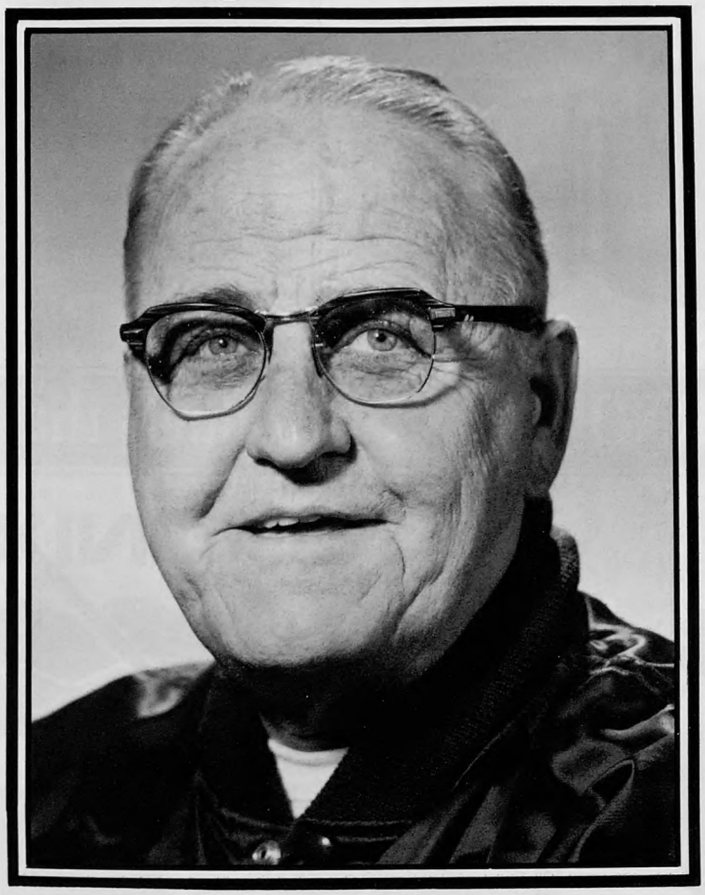
While at the State University of New York at Cortland, John was the recipient of numerous honors. In 1983, he was named to the National Athletic Trainers Association Hall of Fame and received the Cramer Award recognizing his leadership and excellence in the profession of Athletic Training. He received the National Athletic Trainers Association Twenty-five Year Award in 1981. He was recognized as the outstanding athletic trainer in New York State in 1978 with the presentation of the Tom Sheehan Award. He also was chosen as an athletic trainer for the 1975 Pan American Games in Mexico City and the 1978 North/South All-American Lacrosse Game in Baltimore. An award has been established in his name at the State University of New York at Cortland to honor the person who contributes the most toward the advancement of the Athletic Training Program at the school.

As a leader in the athletic training profession in New York State, John was the initiator and first president of the New York State Athletic Trainers Association. He was a leading proponent for licensure of athletic trainers in New York State, serving as the chair of the committee while also a member on the National Athletic Trainers Association Licensure Committee. The ultimate goal for licensure in New York State would be to open the public schools to better health care for athletes.

Most noteworthy, John Sciera fought the use of butt-blocking and spear-tackling in football. His investigations and related articles brought out the danger of these practices and subsequently led to the abolishment of these techniques from all levels of play. Thousands of youths participate safely and successfully in the game of football today thanks to this effort.

John L. Sciera is survived by his wife, Bonnie; four sons, John, Gregory, Brian, and David: a daughter, Lynn; and two grandchildren. His Cortland Athletic Training family will long remember his impact on their lives as students, athletic trainers, and friends. Contributions may be made to the John L. Sciera Memorial Scholarship Fund, care of the Alumni Association at the State University of New York at Cortland.

In Memoriam



Lloyd "Snapper" Stein
April 9, 1907 - January 1, 1987

Lloyd "Snapper" Stein, longtime athletic trainer at the University of Minnesota, died January 1, 1987. He grew up in Two Harbors, Minnesota and attended the University of Minnesota. He was the starting center for the football team for three years. After graduating in 1932, he served as freshman trainer for the University and augmented his salary by playing professional football in Canada. Up there the center position was called "snapper-backer", which is how he earned his nickname.

"Snapper" was promoted to head trainer at Minnesota in 1935 and began a career that lasted 40 years. During that same span he served as official trainer for all the Minnesota State High School League state tournaments. Snapper took three years off and entered the U.S. Navy. He was assigned as head athletic trainer at the Iowa Pre-Flight Training School in Iowa City. He was discharged in 1945 as a Lieutenant Commander.

Upon retirement in 1975, he was named professor emeritus at the University and continued to ply his trade serving as a sportsmedicine consultant. Being true to his past thirst for knowledge, Snapper actually decided to quit his consulting post when, after researching medical journals, he diagnosed himself correctly as having Alzheimer's disease. He died of a heart attack.

Snapper's legacy is well put by Jim Marshall, Coordinator of Sports Medicine at the University of Minnesota: "Sometimes it's just enough to hear about a legend. But to know one personally, to work with a legend, a ground breaker, an innovator, a founding father . . . that's something else. I'll miss him as will everyone else ever connected with the University of Minnesota or athletic training in general."

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Guide to Contributors

Athletic Training, the Journal of the National Athletic Trainers Association (NATA), Inc., welcomes the submission of manuscripts which may be of interest to persons engaged in or concerned with the progress of the athletic training profession. Manuscripts should conform to the following:

SUBMISSION POLICIES

1. Submit one original and three copies of the manuscript and artwork to the editor.
2. We accept manuscripts for review with the understanding that they are original, have been submitted solely to *Athletic Training*, and are not under simultaneous review by any other publication. All manuscripts must be accompanied by a letter, signed by each author, containing the following statements. Manuscripts which are not accompanied by such a letter will not be reviewed.

   "This manuscript contains original unpublished material that has been submitted solely to *Athletic Training*, is not under simultaneous review by any other publication, and will not be submitted elsewhere until after a decision has been made concerning its suitability for publication by *Athletic Training*. In consideration of the NATA taking action in reviewing and editing my (our) submission, the author(s) undersigned hereby transfers, assigns or otherwise conveys all copyright ownership to the NATA, in the event that such work is published by the NATA."
3. Materials taken from other sources, including text, illustrations, or tables, must be accompanied by a written statement from both the author and publisher giving *Athletic Training* permission to reproduce the material. Photographs of individuals must be accompanied by a signed photograph release form. Accepted manuscripts become the property of the *National Athletic Trainers Association*. For permission to reproduce an article, or part there-of, published in *Athletic Training*, send request to the Editor-in-Chief.
4. Published manuscripts and accompanying artwork cannot be returned. Unused manuscripts will be returned when submitted with a stamped, self-addressed envelope.
5. Manuscripts are reviewed and edited to improve the effectiveness of communication between the author and the readers, and to assist the author in a presentation compatible with the accepted style of *Athletic Training*. The author accepts responsibility for any major corrections of the manuscript as suggested by the editor. The initial review process usually takes from six to 12 weeks.
6. *Athletic Training* utilizes a double blind review process. Authors should take care that they are not identified in any way except on the first title and biographical sketch pages.

STYLE POLICIES

7. Personal pronouns (I, we) and the active voice are preferred. Use the third person for describing what happened, "I" or "we" (if more than one author) for describing what you did, and "you" or the imparitive for instructions.
8. Each page must be typewritten on one side of 8½ x 11 inch plain paper, double spaced, with a one and one-half inch left margin and one inch margins elsewhere.
9. Manuscripts should contain the following information, organized in the order listed, with each section beginning on a separate page:
   a. Title page
   b. Biographical sketch
   c. 2nd Title
   d. Abstract
   e. Text (body of manuscript)
   f. References
   g. Acknowledgements
   h. Legend to illustrations
   i. Illustrations - each on a separate page
   j. Tables - each on a separate page
10. Titles should be brief within descriptive limits (a 16 word maximum is recommended). The name of the disability treated should be included in the title if it is the relevant factor; if the technique or type of treatment used is the principle reason for the report, this should be in the title. Often both should appear. The title page should also include the names, titles, and affiliations of each author, and the name and address of the author with whom correspondence is to be directed. Both the title and biographical sketch pages should be unnumbered.
11. A brief biographical sketch of each author is requested.
12. A second title page which includes only the title and with no reference to the authors is next. Begin numbering the pages of your manuscript with this page as #1.
13. A comprehensive abstract of 75 to 200 words must accompany the manuscript. This abstract should succinctly summarize the major intent of the manuscript, the major points of the body, and the author's summary and/or conclusions. To state in the abstract words to the effect of "the significance of the information is discussed in the article", is unacceptable.
14. Begin the text of the manuscript with an introductory paragraph or two in which the purpose or hypothesis of the article is clearly stated. Highlights of the most prominent work of others as related to the subject at hand is often appropriate for the introduction, but a detailed review of the literature should be reserved for the discussion section. The body or main part of the manuscript varies according to the type of article (examples follow). Regardless of the type of article, however, the body must include a discussion section in which the importance of the material presented is discussed and related to other pertinent literature. Liberal use of headings and subheadings, charts, graphs, and figures is recommended.

    The body of an experimental report consists of a methodology section, a presentation of the results, and a discussion of the results. The methodology sections should contain sufficient detail concerning the methods, procedures, and apparatus employed that others can reproduce the results. The results should be summarized using descriptive and inferential statistics and a few well planned and carefully constructed illustrations.

    The body of a review of the literature article should be organized into subsections in which related articles of others is presented and summarized. Each subsection should have a heading and a brief summary, possibly one sentence. Sections must be arranged so they progressively focus on the problem or question posed in the introduction.

    The body of a **Case Report** should include the following components: personal data (age, sex, race, marital status, and occupation when relevant — but not name), chief complaint, history of present complaint (including symptoms), results of physical examination (example: "Physical findings relevant to the physical therapy program were . . ."), medical history (surgery, laboratory, exam, etc.), diagnosis, treatment and clinical course (rehabilitation until and after return to competition, criteria for return to competition, and deviation from the expected [what makes this case unique].). NOTE: It is mandatory that *Athletic Training* receive, along with the submitted manuscript, a signed release form by the individual being discussed in the case study injury situation. Case studies cannot be reviewed if the release is not included.
15. The Reference page(s) accompanying a manuscript should list authors numerically and in alphabetical order. Citations in the text of the manuscript will take the form of a number in parentheses, (7), directly after the reference or name of author being cited, indicating the number assigned to the citation. The list of references and citations should be in the following form: a) articles: author(s) (list all) with family names then initials, title of article, journal title (abbreviated as per *Index Medicus* and underlined), volume, inclusive pages, year. Issue number is required if each issue begins with page #1, but must not be included otherwise. b) books: author(s), title of book (underlined), city of publication (and state if the city is not major), publisher, year, inclusive pages of citation. Examples of references to a journal, book, chapter in an edited book, and presentation at a meeting are illustrated below. Note lack of punctuation in authors names.
    a. Knight K: Preparation of manuscripts for publication. *Athletic Training* 11:127-129, 1976.
    b. Klaufs CE, Arnheim DD: *Modern Principles of Athletic Training*. 4th edition. St. Louis, CV Mosby Co. 1977 p. 61.
    c. Albohm M: Common injuries in women's volleyball. in Scriber K, Burke EJ (eds): *Relevant Topics in Athletic Training*. Ithaca NY: Monument Publications, 1978, pp. 79-81.
    d. 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 Vegas, Nev, June 15, 1978.
16. Good quality color photography is acceptable for accompanying graphics but glossy black and white prints are preferred. Graphs, charts, or figures should be of good quality and clearly presented on white paper with black ink in a form which will be legible if reduced for publication. Tables must be typed, not hand written. Photographs cannot be returned if the manuscript is published. Please refrain from putting paper clips on any photograph.

    All artwork to be reproduced should be submitted as black and white line art, with a Rapidograph, a velox stat, or PMT process. Tonal values, shading, washes, Zip-a-tone - type screens effects, etc. are not to be used. All artwork to be reproduced in black plus a second (or more colors) should be submitted as black and white line art (see above paragraph), with an Amberlith or similar-type overlay-employed for each area of additional color(s). Also, all areas of tonal value, shading, "washes", etc. should be supplied on a separate clear or frosted acetate or Amberlith overlay. In addition, all areas to be screened (a percent or tint of black or color) should be supplied on an Amberlith overlay. Artwork cannot be returned if the manuscript is published.

Committee Forum

Placement

The telephone number for the twenty-four hour PLACEMENT VACANCY NOTICES regarding job opportunities is (919) 752-1266.

Public Relations

NATA PUBLIC RELATIONS WORKSHOP

The second annual public relations workshop, which is open to all members of the NATA, will be held on Tuesday, June 16, from 8:30 until 10:30 a.m. in the Franklin Room at the Ohio Center in Columbus. The two-hour workshop is intended to assist those wishing to promote the value of athletic training in their community.

Among agenda items to be included are:

- What NATA information is newsworthy, and what isn't.
- The basics of holding a news conference in your city.
- Distribution channels for the new NATA film, "The Injury Factor."
- NATA public relations in the year ahead.

The workshop will be hosted by Public Relations Committee Chairman Dr. Bobby Barton and Public Relations Director John LeGear. Two hundred members of the NATA public information network are urged to attend.

NATA FILM

The 24-minute film documentary entitled "The Injury Factor" is now available to NATA members on half-inch VHS and three-quarter inch videotape.

The film, an NATA presentation that illustrates the value of certified athletic trainers at all levels of sport —but especially in secondary schools where it is most needed — reveals how the issue of injury management is perceived by other members of the sports community.

Among those featured in the film are risk management consultant Rick Ball and DePaul team physician Robert Hamilton, both national spokespersons for the NATA; former DePaul coach Ray Meyer and Chicago Sun-Times sports writer Taylor Bell.

Cost of the film is $30. To order, please specify either VHS or three-quarter inch format and send it on a note with your name, address, phone number and a check to: The Injury Factor, c/o The National Athletic Trainers' Association, 1001 E. Fourth Street, Greenville, N.C. 27858.

NATA NEWS GATHERING

Thirty news organizations attended a press conference in New York February 3, 1987, to hear results from the NATA's first national surveillance study on injuries to high school football players. News stories, all citing the NATA as the source of information, appeared on "**The Today Show**," **Cable News Network**, in **USA Today** and **The Physician and Sports Medicine**. In addition, the story was conveyed to media outlets throughout the U.S. via **The Associated Press** and **United Press International** wire services.

On June 15 in Columbus, Ohio, the NATA will announce results of its study of injuries to girls in high school basketball. Among several speakers will be NATA Executive Director Otho Davis, NATA President Jerry Rhea and Research and Injury Committee Chairman Dr. John Powell. Although the news conference will be confined to speakers and members of the media, results will be announced at the NATA public relations network and in the Fall issue of the NATA Journal. ⊕

Association Activities, *from page 152*

District 4 News

The Illinois Athletic Trainers Association membership has selected the following athletic trainers for the 1987 All-Star events:

Elks Collegiate Basketball
- Jack Mansfield - Wabash College
- Don Crowder - University of Evansville

High School Track and Field
- Pete Just - Lawrence North HS
- Steve Schlinder - Floyd Central HS

High School Football
- Thomas Baker - North Central HS
- Jeff Fransciosi - Noblesville HS

High School Baseball
- Bob Shriner - Mishawake HS
- Kent Evans - Franklin Central HS ⊕

Journal Deadlines

The Editorial Board will review papers submitted on an individual basis, work with the authors and prepare the papers for publication.

As stated in number 5 of the **Guide to Contributors**, this review process takes from 6 to 12 weeks. Send manuscripts, **Case Reports**, and **Tips from the Field** to:

Ken Knight, Editor
Physical Education Department
Indiana State University
Terre Haute, IN 47809

In order to avoid confusion and delays on other contributions to the Journal, the deadlines are provided below.

The deadlines are:

Journal	**Deadline**
Spring Issue	December 15
Summer Issue	March 1
Fall Issue	June 15
Winter Issue	September 15

Send material for **Announcements, Letters to the Editor** and **Committee Forum** to:

Steve Yates, Editor-in-Chief
P.O. Box 7265 - Sports Medicine Unit
Wake Forrest University
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Information on upcoming events for the **Calendar of Events** section should be sent to:

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

New Products should be sent to:

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Head Athletic Trainer
University of Idaho
Moscow, Idaho 83843

Items for the **Student Trainer Corner** should be sent to:

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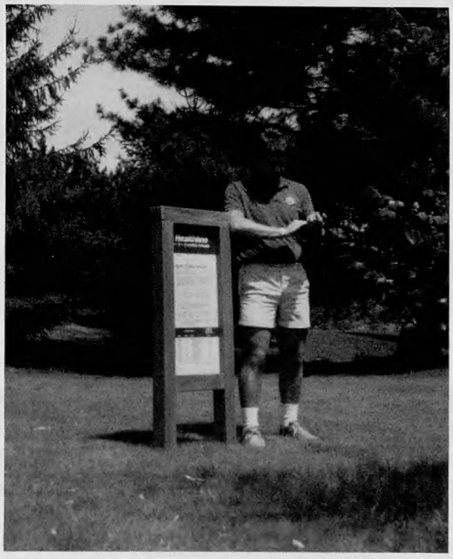
HEALTH



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PROCEEDINGS of the NATIONAL ATHLETIC TRAINERS ASSOCIATION

February 8, 1987
Sheraton Park Central Hotel
Arlington, Texas

SUMMARY OF ACTIONS BOARD OF DIRECTORS

The following agenda items were considered and actions taken by the NATA Board of Directors, at its meeting held at the Sheraton Park Central Hotel, Arlington, Texas, commencing at eight o'clock a.m., on Sunday February 8, 1987 and terminating at ten-forty-five o'clock p.m. with Mr. Jerry Rhea, President, presiding and with the following present:

Mr. Jerry Rhea, President
Mr. Otho Davis, Executive Director
Mr. Charles Redmond, District 1
Mr. Hal Biggs, District 2
Mr. Terry O'Brien, District 3
Mr. Dennis Miller, District 4
Mr. Paul Zeek, District 6
Mr. Mike Nesbitt, District 7
Ms. Janice Daniels, District 8
Mr. James D. May, District 9
Mr. Mark Smaha, District 10
Mr. Bruce Melin, Parliamentarian

I. REAPPROVAL OF MAIL ITEMS:
Moved by District 6, seconded by District 8 and carried 9-0 that the action of the previously approved mail vote items as below indicated be again reapproved:

1. Appointment of Dr. Campbell to Licensure Committee.
2. Appointment of Sally Shuster Shoff to Certification Committee.
3. Accepted resignation of Don Kaverman as Editor of Athletic Training and the Journal of the NATA.
4. Appointment of Ken Knight as Editor of the Journal.
5. P.E.C. recommendation concerning Honor Awards.
6. Appointment of Dean Weber to Drug Education Committee.
7. P.E.C. recommendation to place University of Virginia program on probation.
8. Accept the resignation of Tanda McMillin as member of P.E.C.
9. Approval of Merchandising Agreement between NATA and Iowa State University Athletic Trainers' Association.
10. Reapproval of Appointments to Minority Trainers' Committee of Bernard B. James (District 3), Henry "Buddy" Taylor (District 3), Arnold T. Bell (District 9) Benjamin L. Carbajal (District 7), Robert Rodriguez (District 7), Ronnie P. Barnes (District 2), Billy Hill (District 4) and Paul Tarbedsky (District 9.)

II. APPROVAL OF INFORMATIONAL ITEMS:
The following reports containing no recommendations or requests for action were, in accordance with motion duly made, seconded and carried 9-0, accepted as information.

Audio Visual Aids
Career Information and Services
Grants and Scholarships
Publications
A.A.F.P.
A.A.H.P.E.R.D.
American College Health Association
American College of Sports Medicine
American College Corrective Therapy Association
A.O.S.S.M.
American Running and Fitness Association
Joint Commission of Competitive Safeguards and Medical Aspects of Sports
National Academy of Sports Vision
National Association for Girls and Women in Sports
National Association of College Directors of Athletics
National Association of Intercollegiate Athletics
National Athletic Head and Neck Injury Registry
N.C.A.A.
National Strength and Conditioning Association
Vice-President
Legal Counsel
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A.A.S.A. and N.A.S.B.
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President's Council On Physical Fitness and Sports
American Medical Association
Maginnis and Associates
American Academy of Podiatric Sports Medicine
Catastrophic Injury Data

III. NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS
Moved by District 10, seconded by District 6 and carried 9-0 that Hal Hilmer be appointed as NATA liaison to this group.

IV. A.P.T.A.
Following a brief discussion concerning the preparation of a paper by the A.P.T.A. concerning the role of sports therapists and the role of the Athletic Trainer in relation to athletic training and a request by District 8 that a response on the part of the NATA was concerned, it was moved by District 9, seconded by District 4 and carried 9-0 that Charles Redmond, Janice Daniels, Dennis Miller, in conjunction with Gary Delforge will respond in writing to the Physical Therapy Sports Medicine Section's position statement on the professional role of the certified athletic trainer and sports physical therapist.

V. AMERICAN ACADEMY OF PEDIATRICS:
Moved by District 10, seconded by District 6 and carried 9-0 that this report be accepted for informational purposes.

VI. N.O.C.S.A.E.:
Moved by District 2, seconded by District 7 and carried 9-0 that a statement be sent to this group indicating that before the NATA would consider rejoining the group that it must first show evidence of insurability.

VII. AUDIO VISUAL AIDS:
It was indicated that the only matter presently under consideration by this committee concerned the filming of the National Convention, that this matter was still under consideration at this point and with nothing definite to report at this time.

VIII. FINANCIAL REPORT:
Mr. McIntyre presented a detailed report as to the present state of NATA finances, indicating that in general the organization was in excellent financial position at this point of the year and that a further report would be made in June, at which time more definitive figures would be available. Following the presentation of several informational questions by various Board members, it was moved by District 10, seconded by District 1 and carried 9-0 that the mid-year financial report, as presented, be accepted.

Moved by District 10, seconded by District 6 and carried 9-0 that the annual budget report for the 1987-1988 year be accepted as presented with the stipulation that Mr. McIntyre and Mr. Davis may adjust and amend it as necessitated by the rest of the events occurring at the Board meeting.

IX. NATA FOUNDATION:
Moved by District 6, seconded by District 10 and carried 9-0 that the financial report as presented concerning the NATA Foundation be accepted.

X. NATIONAL COMMISSION FOR HEALTH CERTIFYING AGENCIES:
Moved by District 10, seconded by District 6 and carried 9-0 that the report of this group be accepted for information purposes.

XI. NATA PRESIDENT:
The Board received as information that the nominations for the next term for President would be voted on by the Board at its next meeting in June, to be held at Columbus, Ohio and that for any individual to be considered as a candidate, that individual must have served on the Board of Directors within the last four years prior to date of nomination.

XII. ASSISTANT TO THE EXECUTIVE DIRECTOR:
Following discussion as to a possible assistant to the Executive Director and upon suggestion by Mr. Davis, it was moved by District 2, seconded by District 1 and carried 9-0 that Mr. Paul Grace be approached as to a possibility for this position.

XIII. EXECUTIVE DIRECTOR:
It was further moved by District 7 and seconded by District 4 that the position of a full-time Executive Director come about within five years from the time that the National Office was moved to another location. A vote on this motion indicated Districts 7 and 8 being in favor of the motion, Districts 1, 2, 3, 6, 9 and 10 being in opposition to the motion and District 4 abstaining from the vote.

XIV. SIGNING OF CONTRACTS:
Moved by District 6, seconded by District 2 and carried 9-0 that all contracts for and on behalf of the NATA, including convention arrangements will be signed by the Executive Director and that authority and responsibility for this will be added to the duties of the Executive Director as paragraph 23, under Article IV of the functions, duties and responsibilities of the Executive Director.

Moved by District 9, seconded by District 7 and carried 9-0 that all liaison personnel, committee chairs and personnel in the National Office write a job description concerning their areas of responsibility for inclusion in a procedure manual.

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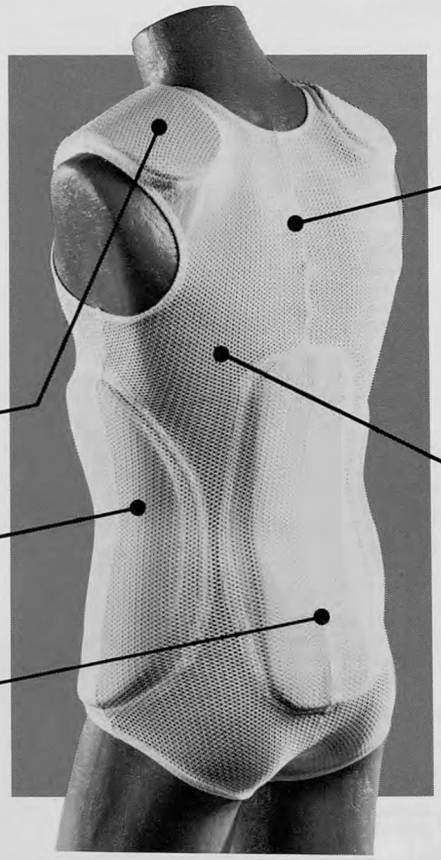

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XV. PREPARATION OF REPORTS:
Moved by District 9, seconded by District 10 and carried 9-0 that all reports of liaison personnel and committee chairpersons be submitted in typewritten form.

XVI. CONTINUING EDUCATION:
Moved by District 6, seconded by District 10 and carried 9-0 that this report be accepted for informational purposes.

XVII. BOARD OF CERTIFICATION:
Moved by District 8, seconded by District 10 and carried 9-0 that this report be accepted for informational purposes.

XVIII. PROFESSIONAL EDUCATION:
Moved by District 8, seconded by District 10 and carried 9-0 that item 1 as recommended and as below indicated by accepted.

The probationary status of the undergraduate athletic training education program (curriculums) at the State University of New York-Cortland be removed effective February 8, 1987, due to demonstrated compliance with the following sections of the Guidelines, 1980 edition:

Section I, F (Implementation of the Program) All courses must have been taught at least once prior to NATA approval.

Section II, G, 1 (Clinical Experience). Required 800 clock hour clinical experience requirement must be distributed as equally as possible over a minimum of two academic years.

Section II, G, 2, c (Affiliated Settings). Formal arrangements must be made with cooperating schools for affiliated settings.

Section II, I (Program Evaluation). A satisfactory system of evaluation of student performance shall be established.

Concerning the 1987-88 budget request of December 12, 1986, it was moved by District 8, seconded by District 10 and carried 9-0 that this interim budget be approved at the discretion of the Executive Director.

Moved by District 1, seconded by District 8 and carried with Districts 1, 2, 3, 7, 8 and 9 voting in the affirmative and with Districts 3, 6 and 10 abstaining, that the Board of Directors approve a PEC policy of encouraging, but not requiring, development of NATA approved graduate athletic training education programs (curriculums) as two-year programs.

Moved by District 8, seconded by District 1 and carried 9-0 that the Board of Directors recognize and approve the PEC plans to identify specific competencies in athletic training that would appropriately serve as a basis for development of learning experiences in NATA approved graduate athletic training education programs (curriculums).

Moved by District 1, seconded by District 7 and carried 9-0 that the Board of Directors approve a PEC policy of encouraging research activities in athletic training and sports medicine by faculty and students in NATA approved graduate athletic training education programs (curriculums).

Moved by District 8, seconded by District 1 and carried 9-0 that the Board of Directors recognize and approve the PEC continuing policy of reviewing and recommending appropriate and timely changes in admission requirements for NATA approved graduate athletic training education programs (curriculums).

Moved by District 9, seconded by District 2 and carried 9-0 that the PEC direct all of its legal problems to the Executive Director and that the Executive Director, at his discretion, will direct these issues to the appropriate attorney.

Moved by District 2, seconded by District 4 and carried 9-0 that the PEC look into the possibility of requiring one hundred hours in an allied clinical situation in support of their programming.

Moved by District 7, seconded by District 2 and carried 9-0 that the PEC look into the feasibility of requiring a minimal number of hours working directly with a contact sport in both undergraduate and graduate levels and present their recommendations in their next report to the Board.

XIX. PUBLIC RELATIONS:
Moved by District 6, seconded by District 10 and carried 9-0 that the report on Public Relations be accepted for informational purposes.

XX. ATHLETIC TRAINING SERVICES:
Moved by District 2, seconded by District 8 and carried 9-0 that Athletic Training Services be sent a letter thanking them for their interest and that the NATA will recognize them as a valuable recruiting service for athletic trainers seeking employment.

Further, in order for the record to be clear, regarding this organization, it was further moved by District 7, seconded by District 6 and carried 9-0 that during the ensuing period since February of 1986, there had been a change of philosophy among the Board so that a decision had been reached not to become allied with Athletic Training Services.

XXI. MERCHANDISING OF PRODUCTS:
Moved by District 10, seconded by District 6 and carried 9-0 that the written and oral report made concerning this issue be accepted for informational purposes.

XXII. NATIONAL HIGH SCHOOL ATHLETIC COACHES ASSOCIATION:
Moved by District 10, seconded by District 2 and carried 9-0 that this report be accepted for informational purposes.

XXIII. 1987 PAN AMERICAN SPORTS MEDICINE CONGRESS:
Moved by District 6, seconded by District 2 and carried 9-0 that this report be accepted for informational purposes.

XXIV. ATHLETIC TRAINERS OF THE YEAR:
Moved by District 10, seconded by District 6 and carried 9-0 that this report be accepted for informational purposes.

XXV. UNITED STATES OLYMPIC COMMITTEE AND INTERNATIONAL GAMES:
Moved by District 6, seconded by District 9 and carried 9-0 that this material be received for informational purposes.

XXVI. ACCIDENTAL DEATH INSURANCE:
Following a brief review of the expenditures incurred by the NATA on furnishing this type of insurance to the membership it was moved by District 10, seconded by District 2 and carried 9-0 that this insurance be kept in force.

XXVII. CANADIAN ATHLETIC THERAPIST ASSOCIATION:
Moved by District 10, seconded by District 6 and carried 9-0 that this report be accepted for information purposes.

XXVIII. SPLINTER GROUPS:
Moved by District 10, seconded by District 1 and carried 9-0 that this report be accepted for informational purposes.

XXIX. AMERICAN SPORTS HEALTH ASSOCIATION:
Moved by District 6, seconded by District 10 and carried 9-0 that this report be accepted for informational purposes.

XXX. AMERICAN TRAUMA SOCIETY:
Due to unexpected difficulties being experienced in relation to mail and other communications and at the suggestion of the Executive Director, it was Moved by District 6, seconded by District 2 and carried 9-0 that additional discussion pertaining to this organization be tabled until the Board's June meeting.

XXXI. SPECIAL OLYMPICS PROGRAM:
Mr. Davis urged the Directors to encourage their district members to become more active in the Special Olympics Program because of the past performance of this group in assisting the young trainer in many ways. It was moved by District 6, seconded by District 2 and carried 9-0 that the Districts be encouraged to become more involved in this program where possible.

XXXII. PHYSICAL EXAMINATION SURVEY:
Moved by District 9, seconded by District 1 and carried 9-0 that this Survey as made by Mr. Patrick be accepted for informational purposes.

XXXIII. DRUG EDUCATION:
Moved by District 1, seconded by District 9 and carried 9-0, that this report be accepted for informational purposes.

XXXIV. HISTORY AND ARCHIVES:
It was indicated and accepted by the Board members that they go back to their Districts and ascertain if there were any qualified individuals that might be interested in assuming this task and report back any findings at the June meeting of the Board, with some possible recommendations.

XXXV. HONOR AWARDS:
Attention of the Board was called to the shortage of candidates for the President's Challenge Award with the Directors being asked verbally for nominations. Following the submission of five names from various districts, it was Moved by District 10, seconded by District 6 and carried 9-0 that further action on this matter be taken by a mail vote.

XXXVI. JOURNAL:
Moved by District 10, seconded by District 6 and carried 9-0 that the Executive Director handle the requests concerning computer terminals and typewriters in relation to the needs of the Journal Committee.

XXXVII. LICENSURE:
Moved by District 8, seconded by District 7 and carried 9-0 that the Licensure Committee be directed to analyze the impact concerning the number of high school athletic trainers hired in the high schools since licensure was established in that particular state.

It was further moved by District 9, seconded by District 2 and carried 9-0 that the report be accepted for informational purposes.

XXXVIII. MEMBERSHIP:
It being indicated by Mr. Melin that the numbers contained in this report were taken from the numbers presently in the book concerning the various membership classes, and there being no discussion, it was moved by District 7, seconded by District 8 and carried 9-0 that this report be received for informational purposes.

XXXIX. MEMORIAL RESOLUTIONS:
Mr. Davis again called attention to the difficulty of staff being informed upon the death of members and the difficulty in preparing satisfactory memorial resolutions. It was moved by District 8, seconded by District 9 and carried 9-0 that the report be accepted for informational purposes and that the present committee be restructured by the Board in June.

XL. MINORITY ATHLETIC TRAINERS:
Moved by District 9, seconded by District 6 and carried 9-0 that Carl Williams be accepted as a member of this committee.

XLI. CONVENTION COMMITTEE:
Moved by District 7, seconded by District 8 and carried 9-0 that Phoenix be considered for 1992 convention site.

It was likewise moved by District 10, seconded by District 1 and carried 9-0 that the convention be considered for Portland, Oregon in 1992.

XLII. RESEARCH AND INJURY:
Moved by District 10, seconded by District 9 and carried 9-0 that the report be accepted for informational purposes.

Moved by District 6, seconded by District 2 and carried 9-0 that the study performed by the committee be immediately copyrighted.

XLIII. ETHICS:
Attention of the Board was called to the material furnished by Mr. Zeitlin regarding his activities concerning ethics and the various resolutions furnished for Board consideration by him.

The Board, by unanimous action, approved Board Resolutions 1, 2 and 3 as follows:

BOARD RESOLUTION No. 1
RESOLVED, that the proposed amendment concerning indemnification is adopted.

BOARD RESOLUTION No. 2
RESOLVED, that the Executive Director is authorized in consultation with counsel to enter into contracts of insurance and to report to the Board at the June, 1987 Annual Meeting.

BOARD RESOLUTION No. 3
RESOLVED, that the submitted ethical principles, membership standards and certification standards are adopted as proposed ethical principles, membership standards and certification standards; following execution of contracts of insurance by the Executive Director in consultation with Counsel, the Executive Director shall cause the ethical principles, membership standards and certification standards to be published and circulated to the athletic training community for a thirty-day comment period; and at the June, 1987 Annual Meeting, the Board shall reveiw and consider any comments received during the comment period and approve final text for publications and incorporation into the Association's publications and materials.

Moved by District 10, seconded by District 1 and carried 9-0 to continue to update policies concerning consultants, namely Board of Certification, Ethics, etc.

PROFESSIONAL ETHICAL, MEMBERSHIP AND CERTIFICATION PRINCIPLES

The following "NATA Ethical Principles", "NATA Membership Standards, Eligibility Requirements, and

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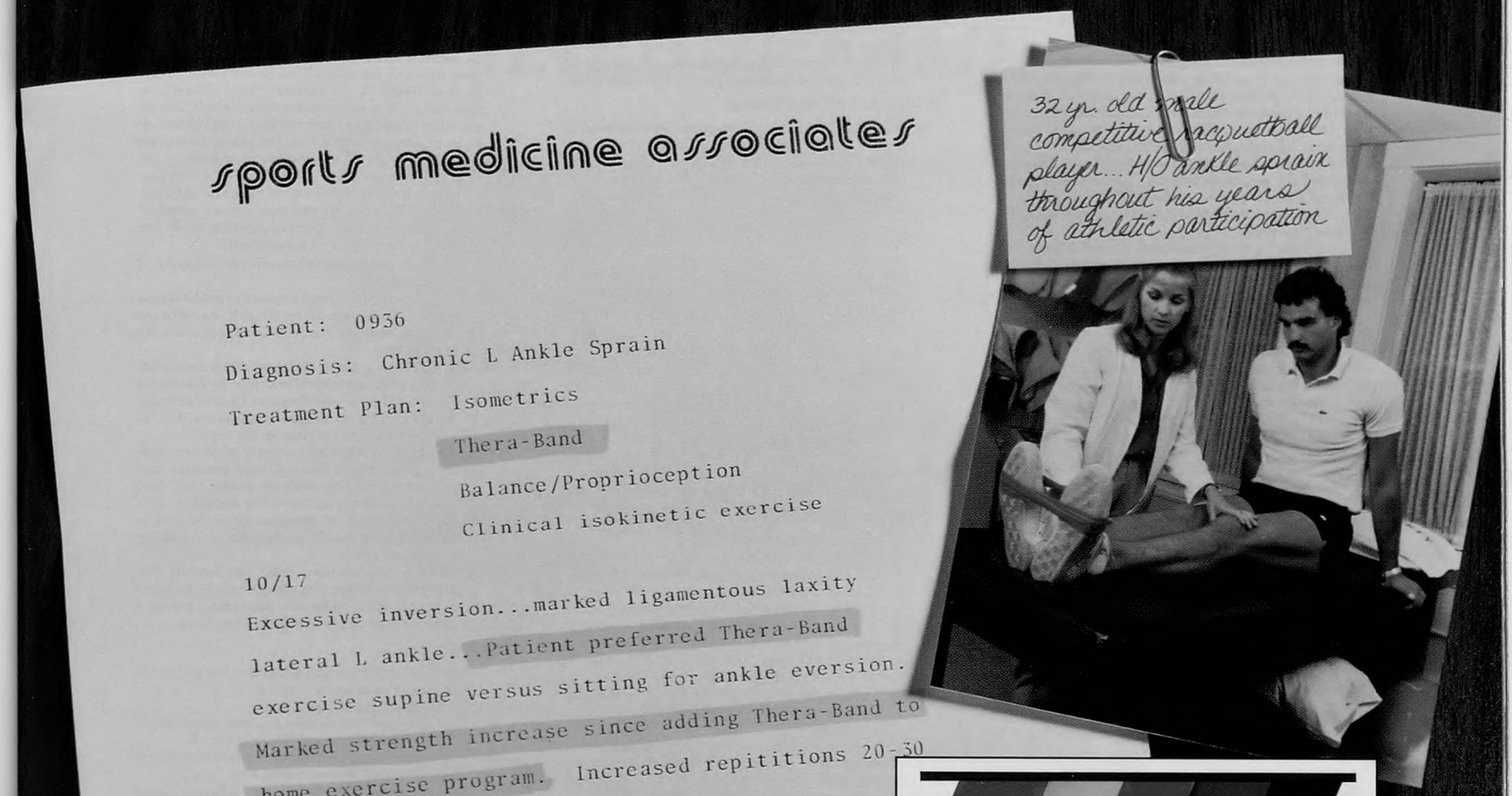

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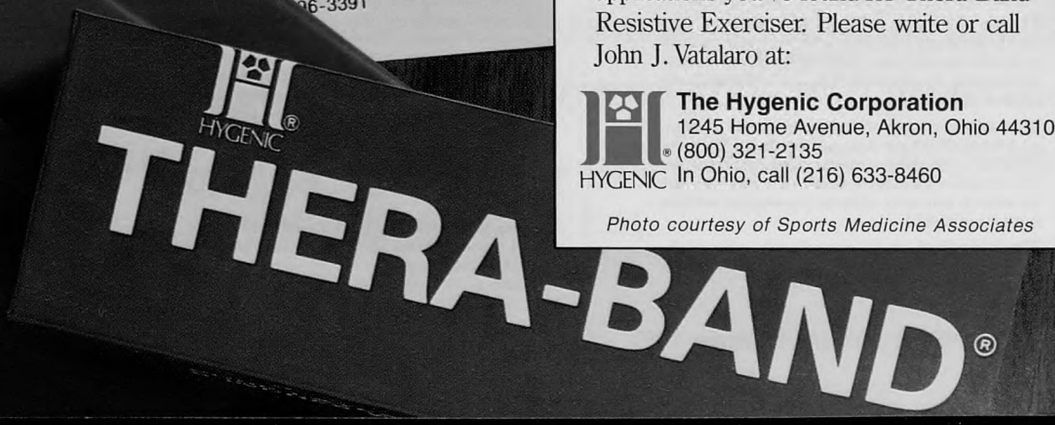

Membership Sanctions and Procedures" and "Certification, Review of Certification and Disciplinary Procedures" were initially approved by the Board in February 1987 and are published for your information. Any comments you may have should be sent in writing to the Executive Director and shall be reviewed no later than June 1, 1987.

NATA ETHICAL PRINCIPLES

I. PREAMBLE

Our profession is a calling which requires application of specialized knowledge and skill for the benefit of others. The profession of athletic training also endeavors to promote the highest standards of conduct and integrity in professional service and in our activities. After considerable study and discussion, the NATA Board has identified several professional principles for emphasis and has revised its previous **Code of Ethics** which had been in effect since June 1957. This document, adopted in February 1987, is the result of that study.

In considering these principles, it should be remembered that these or any other statements of professional athletic training are not all-inclusive, are subject to interpretation, and are subject to change.

In approving the Ethical Principles and Membership Standards, the Board of Directors believes that maintaining the standards and principles set forth in this document can make a substantial contribution to the service of the profession and its members to athletics and sports medicine.

II. ETHICAL PRINCIPLES

By setting out several basic ethical principles for athletic trainers, the NATA seeks to encourage competent and honest professional practice. These principles in Section II are not in themselves grounds for sanctions of members. However, athletic trainers should strive to reflect these characteristics as an expression of dedicated athletic training service.

Athletic trainers should have pride in their professional endeavors. Their obligation to act competently calls for higher motivation than that arising from concerns of civil liability or disciplinary penalty. Athletic training carries a significant responsibility to others and all athletic training services should reflect this recognition. Athletic trainers should make every effort to ensure that their services are used properly.

* Athletic trainers should neither practice nor permit discrimination on the basis of race, color, sex, age or national origin.

* Athletic trainers should not condone, engage in or defend unsportsman-like conduct or practices.

* Athletic trainers should provide care on the basis of the needs of the individual athlete. They should not discriminate in providing care on the basis of athletic ability.

* Athletic trainers should strive to achieve the highest level of competence. They should use only those techniques and preparations for which they are qualified and authorized to administer.

* Athletic trainers should recognize the need for continuing education to remain proficient in their practice. They are willing to consider new procedures within guidelines that assure safety.

* Athletic trainers should recognize that personal problems and conflicts may occur which may interfere with professional effectiveness. Accordingly, they should refrain from undertaking any activity in which their personal problems are likely to lead to inadequate performance or harm to an athlete or colleague.

* Athletic trainers should use care to be truthful and not misleading when stating their education, training and experience.

NATA MEMBERSHIP STANDARDS, ELIGIBILITY REQUIREMENTS, AND MEMBERSHIP SANCTIONS AND PROCEDURES

I. Membership Standards

In applying for membership, an applicant agrees that:

A. The individual complies with and will comply with all rules and standards of NATA and bears the burden for showing and maintaining compliance at all times.

B. The cards and logos of NATA, the name "National Athletic Trainers Association, Inc.", the term "NATA", and abbreviations relating thereto are all exclusive property of the NATA and may not be used in any way without the express written consent of NATA.

C. The individual shall immediately relinquish, refrain from using and correct at the individual's expense any outdated or other inaccurate use of any NATA card, logo, emblem and the NATA name and related abbreviations in case of suspension, limitation or expulsion from NATA or as otherwise requested by NATA.

D. If the individual refuses to relinquish immediately, refrain from using and correct at his or her expense any misuse or misleading use of any of the above items when requested, the individual agrees that NATA shall be entitled to obtain injunctive relief, damages, costs and attorney's fees incurred in obtaining any such or other relief.

II. Eligibility for Membership

A. No individual is eligible to apply for membership unless in compliance with all NATA rules and standards. NATA may deny, expel or otherwise act upon membership where an individual is not in compliance with NATA rules and standards.

B. The individual must truthfully complete and sign an application in the form provided by NATA and shall provide additional information as requested. The individual must notify NATA of any changes in address, telephone number, and any other facts bearing on eligibility or membership within thirty (30) days of such occurrence.

C. An individual convicted of a felony directly related to public health or athletic care or education shall be ineligible to apply for membership for a period of one year from the exhaustion of appeals or final release from confinement (if any), whichever is later. Convictions of this nature include but are not limited to felonies involving rape, sexual abuse of an athlete or child, and actual or threatened use of a weapon or violence.

III. Membership Sanctions and Procedures

A. Grounds for Sanctions

When a person becomes a member of the NATA he or she assumes certain obligations and responsibilities. A member is responsible for dues as provided by the Membership Committee. A member whose conduct is not in accordance with the following principles below may be subject to one or more of the sanctions set out in subpart E, below. These principles are:

1. Knowingly assisting another to obtain or attempt to obtain membership by fraud or deception;
2. Misrepresentation of NATA membership status, NATA affiliation or NATA approval;
3. Misstatement of material fact or failure to make statement of material fact in application for membership; or
4. The conviction of, plea of guilty or plea of *nolo contendere* to a felony which is directly related to public health or athletic care or education. This includes but is not limited to a felony involving: rape; sexual abuse of an athlete or child; actual threatened use of a weapon or violence; the prohibited sale or distribution of a controlled substance, or its possession with the intent to distribute; or use of position of athletic trainer improperly (i) to influence or attempt to influence the outcome or score of an athletic event or (ii) in connection with any gambling activity.

B. Panels and Review Procedures

Panels

1. The NATA Committee on Membership Standards by a majority vote shall elect (i) a Review Panel, (ii) a Hearing Panel and (iii) an Appeals Panel to consider alleged violations of any membership standard set forth in Section III A(1)-(4). These Panels may be established as standing panels.
2. Each of these Panels shall be composed of three full-voting members and up to four non-voting members, whose terms shall run for three years and may be renewed. A full or substitute member may not serve more than two terms consecutively and may not serve on more than one membership or certification review, hearing or appeals panel at a time. If a full or substitute member serves as a member of one of these panels, he or she may not consider the same matter while serving on a different panel. A full or substitute member may not serve in any situation where his or her impartiality or the presence of actual or apparent conflict of interest might reasonably be questioned.
3. A majority of full-voting members of a panel shall select their Chair at the beginning of each year.
4. A quorum consists of three full-voting members and panel action shall be determined by majority vote.
5. Where a vacancy of a full-voting member occurs in any of the panels as a result of resignation, unavailability or disqualification, the Chair of the Committee on Membership Standards shall designate a full-voting member from the substitute members.

Review Procedures

Where the Executive Director receives allegations which raise issues under Section III A(1)-(4) of the Membership Standards, the Executive Director shall transmit such allegations to the Chair of the Committee on Membership Standards, who shall then forward the allegations to the Chair of the Review Panel. If the Review Panel determines that no good cause exists to deny eligibility or question compliance with the Membership Standards, no adverse action shall be taken. However, if the Review Panel determines by majority vote that good cause does exist, it shall direct the transmittal of the statement of allegations by the Executive Director to the member by certified mail, return receipt requested, setting forth the applicable standard and a statement:

1. Of facts constituting the alleged violation of the standard;
2. That the member may request an oral hearing for the disposition of the allegations, with the member bearing his or her own expenses for such matter;
3. That the member shall have fifteen days after receipt of the statement to notify the Executive Director if he or she disputes the allegations, has comments on available sanctions, and/or requests an oral hearing on the record;
4. That the member may appear in person with the assistance of counsel, may examine and cross-examine any witness under oath, and produce evidence on his or her behalf;
5. That the truth of allegations or failure to respond may result in sanctions including expulsion; and
6. That if the member does not dispute the allegations or request a hearing, the member consents that the Review panel may render a decision and apply available sanctions.

C. Hearing

If a member disputes the allegations or available sanctions or requests a hearing:

1. The Executive Director shall:
   (a) forward the allegations and response of the member to the Hearing Panel;
   (b) schedule a hearing of the Hearing Panel after the request is received;
   (c) send by certified mail, return receipt requested, a Notice of Hearing to the member. The Notice of Hearing shall include a statement of the time and place of the hearing as selected by the Executive Director after consultation with the Chair of the Hearing Panel.
2. The Hearing Panel shall maintain a verbatim oral or written transcript.
3. The NATA and the member may make opening statements, present documents and testimony, examine and cross-examine witnesses under oath, make closing statements and present written briefs as scheduled by the Hearing Panel.
4. The Hearing Panel shall determine all matters relating to the hearing. The hearing and related matters shall be determined on the record by majority vote.

D. Evidence

Formal rules of evidence shall not apply. Relevant evidence may be admitted. Disputed questions shall be determined by majority vote of the Panel.

E. Sanctions

Sanctions for violation of any NATA membership Standard may include one or more of:

1. Denial or suspension of eligibility;
2. Expulsion;
3. Non-renewal;
4. Censure;
5. Reprimand;
6. Suspension;
7. Training or other corrective action;
8. Reports; and
9. Conditions relating to the above.

F. Appeal

1. If the decision rendered by the Hearing Panel finds that the allegations are not established, no further action on the appeal shall occur.
2. If the decision rendered by the Hearing Panel is not favorable to the member, the member may appeal the decision to the Appeals Panel by submitting a written appeals statement within thirty (30) days following receipt of the decision of the Hearing Panel. NATA may file

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a written response to the statement of the member.

3. The Appeals Panel shall render a decision on the record below without oral hearing, although written briefing may be submitted.

G. Decision

The decision of the Hearing Panel or the Appeals Panel shall be rendered in writing following the hearing and any briefing. The decision shall contain factual findings, conclusions of law and any sanctions applied. It shall be transmitted to the applicant or member by certified mail, return receipt requested.

H. Release of Information

The individual applicant or member authorizes NATA and its agents to communicate all information relating to NATA membership and review thereof including pendency or outcome of disciplinary proceedings to state and federal authorities, employers, other members, training programs, and others by means of newsletter or otherwise.

I. Waiver of Recourse

The individual applicant or member waives any right to recourse against NATA, its officers, directors, agents employees, committees, counsel and others for disciplinary or other action taken pursuant to the rules and standards of NATA.

J. Reinstatement of Eligibility or Membership

If eligibility or membership is denied for grounds set forth at II.(A)-(D) or III. (A) (1)-(4), they may be reconsidered on the following basis:

1. in the event of a felony conviction directly related to public health or athletic care or education, no earlier than one (1) year from the exhaustion of appeals or release from confinement, whichever is later;
2. in any other event, no earlier than one (1) year from the final decision of ineligibility or expulsion.

In addition to other facts required by NATA, such an individual must fully set forth the circumstances of the decision denying eligibility or expelling the member as well as all relevant facts and circumstances since the decision. In such cases, and especially where a member has been expelled due to felony conviction, the individual bears the burden of demonstrating by clear and convincing evidence that the individual has been rehabilitated and does not pose a danger to others.

K. Submission of information to NATA concerning possible violation of NATA standards

Persons concerned with possible violation of NATA standards should identify the persons alleged to be involved and the facts concerning the alleged conduct in as much detail and specificity as possible with available documentation in a written statement addressed to the Executive Director. The statement should identify by name, address and telephone number the person making the information known to the NATA and others who may have knowledge of the facts and circumstances concerning the alleged conduct. Supplementation relating to the content or form of the information may be requested.

CERTIFICATION, REVIEW OF CERTIFICATION, AND DISCIPLINARY PROCEDURES

I. NATA Standards and Review of Certificates

The NATA conducts a certification program for individual applicants and registrants, although it does not express an opinion on competence or warrant job performance of applicants and registrants.

In applying for certification, an applicant or registrant agrees that:

A. The individual complies and will comply with all rules and standards of NATA and bears the burden for showing and maintaining compliance at all times.

B. The examinations, certificates, cards, logos, of NATA, the name "National Athletic Trainers Association, Inc.", the term "NATA", and abbreviations relating thereto are all the exclusive property of the NATA and may not be used in any way without the express written consent of NATA.

C. The individual shall immediately relinquish, refrain from using and correct at the individual's expense any outdated or other inaccurate use of any NATA certificate, card, logo, emblem, and the NATA name and related abbreviations in case of suspension, limitation, revocation or resignation from NATA or as likewise requested by NATA.

D. If the individual refuses to relinquish immediately, refrain from using and correct at his or her expense any misuse or misleading use of any of the above items when requested, the individual agrees that NATA shall be entitled to obtain injunctive relief, damages costs and attorney's fees incurred in obtaining any such or other relief.

II. Eligibility for Certification or Recertification

A. No individual is eligible to apply for certification or recertification unless in compliance with all NATA rules and standards. NATA may deny, revoke, or otherwise act upon certification or recertification where an individual is not in compliance with NATA rules and standards.

B. The individual must truthfully complete and sign an application in the form provided by NATA and shall provide additional information as requested. The individual must notify NATA of any change in address, telephone number, and any other facts bearing on eligibility or certification within fifteen (15) days of such occurrence.

C. An individual convicted of a felony directly related to public health or athletic care or education shall be ineligible to apply for certification or recertification for a period of one year from the exhaustion of appeals or final release from confinement (if any), whichever is later. Convictions of this nature include but are not limited to felonies involving rape, sexual abuse of an athlete or child, and actual or threatened use of a weapon or violence.

III. Score Reports

The NATA is concerned with reporting only valid scores. On rare occasions, misconduct or circumstances beyond the individual's control may render a score invalid. If doubts are raised about a score because of these or other circumstances, NATA expects all individuals to cooperate in any NATA investigation. NATA reserves the right to cancel any exam score if, in the sole opinion of NATA, there is adequate reason to question its validity. NATA in its discretion will (i) offer the individual an opportunity to take the exam again at no additional fee, or (ii) proceed as described in Section IV, Review of Applications and Certificates, below.

IV. Review of Applications and Certificates

A. Application and Certification Standards

NATA may revoke or otherwise take action with regard to application or certificate of an applicant or certificant in the case of:

1. Ineligibility for NATA certification;
2. Irregularity in connection with any NATA examination;
3. Unauthorized possession of, use of or access to NATA examinations, documents or materials;
4. Material misrepresentation or fraud in any statement to NATA, including but not limited to statements made to assist the applicant, certificant or another to apply for, obtain or retain certification;
5. Habitual use of alcohol or any drug or any substance, or any physical or mental condition, which impairs competent and objective professional performance;
6. Gross or repeated negligence or malpractice in professional work;
7. Revocation, suspension, or other disciplinary action by a licensing board; or
8. The conviction of, plea of guilty or plea of nolo contendere to a felony which is directly related to public health or athletic care or education. This includes but is not limited to a felony involving: rape; sexual abuse of an athlete or child; actual or threatened use of a weapon or violence; the prohibited sale or distribution of a controlled substance, or its possession with the intent to distribute; or use of position of athletic trainer improperly (i) to influence or attempt to influence the outcome or score of an athletic event or (ii) in connection with any gambling activity.

B. Panels and Review Procedures

Panels

1. The NATA Board of Certification by a majority vote shall elect (i) a Review Panel, (ii) a Hearing Panel, and (iii) an Appeals Panel to consider alleged violations of any Application or Certification Standard set forth in Section IV A(1)-(8). These Panels may be established as standing panels.
2. Each of these Panels shall be composed of three full-voting members and up to four non-voting members, whose terms shall run for three years and may be renewed. A full or substitute member may not serve more than two terms consecutively and may not serve on more than one membership or certification review, hearing or appeals panel at a time. If a full or substitute member serves as a member of one of these panels, he or she may not consider the same matter while serving on a different panel. A full or substitute member may not serve in any situation where his or her impartiality or the presence of actual or apparent conflict of interest might reasonably be questioned.
3. A majority of full-voting members of a panel shall select their Chair at the beginning of each year.
4. A quorum consists of three full-voting members and panel action shall be determined by majority vote.
5. Where a vacancy of a full-voting member occurs in any of the panels as a result of resignation, unavailability or disqualification, the Chair of the Board of Certification Standards shall designate a full-voting member from the substitute members.

Review Procedures

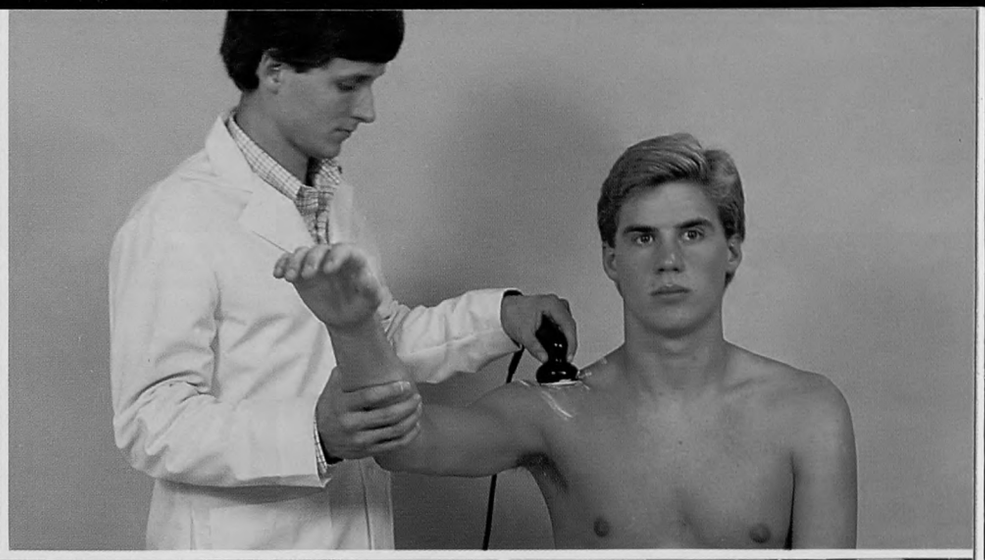
Whenever the Executive Director receives allegations which raise issues under Section IV A(1)-(8) of the Application and Certification Standards, the Executive Director shall transmit such allegations to the Chair of the Board of Certification, who shall then forward the allegations to the Chair of the Review Panel. If the Review Panel determines that no good cause exists to deny eligibility or question compliance with the Application and Certification Standards, no adverse action shall be taken. However, if the Review Panel determines by majority vote that good cause does exist, it shall direct the transmittal of the statement of allegations by the Executive Director to the applicant or certificant by certified mail, return receipt requested, setting forth the applicable standard and a statement:

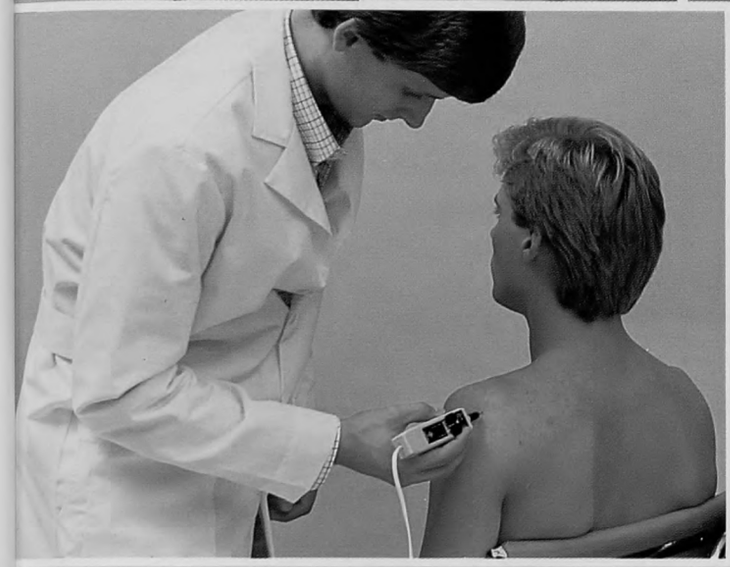
1. Of facts constituting the alleged violation of the standard;
2. That the applicant or certificant may request an oral hearing for the disposition of the allegations, with the applicant or certificant bearing his or her own expenses for such matter;
3. That the applicant or certificant shall have fifteen days after receipt of the statement to notify the Executive Director if he or she disputes the allegations, has comments on available sanctions, and/or requests an oral hearing on the record;
4. That the applicant or certificant may appear in person with the assistance of counsel, may examine and cross-examine any witness under oath, and produce evidence on his or her behalf;
5. That the truth of allegations or failure to respond may result in sanctions including revocation; and
6. That if the applicant or certificant does not dispute the allegations or request a hearing, the applicant or certificant consents that the Review panel may render a decision and apply available sanctions.

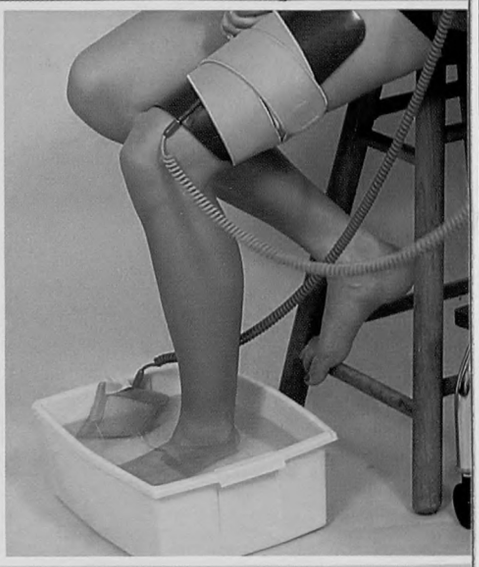
C. Hearing

If an applicant or certificant disputes the allegations or available sanctions or requests a hearing:

1. The Executive Director shall:
   (a) forward the allegations and response of the applicant or certificant to the Hearing Panel;
   (b) schedule a hearing of the Hearing Panel after the request is received;
   (c) send by certified mail, return receipt requested, a Notice of Hearing to the applicant or certificant. The Notice of Hearing shall include a statement of the time and place of the hearing as selected by the Executive Director after consultation with the Chair of the Hearing Panel.
2. The Hearing Panel shall maintain a verbatim oral or written transcript.
3. The NATA and the applicant or certificant may make opening statements, present documents and testimony, examine and cross-examine witnesses under oath, making closing statements and present written briefs as scheduled by the Hearing Panel.
4. The Hearing Panel shall determine all matters related to the hearing. The hearing and related matters shall be determined on the record by majority vote.







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D. Evidence

Formal rules of evidence shall not apply. Relevant evidence may be admitted. Disputed questions shall be determined by majority vote of the Panel.

E. Sanctions

Sanctions for violation of any NATA Application or Certification Standard may include one or more of:

1. Denial or suspension of eligibility;
2. Revocation;
3. Non-renewal;
4. Censure;
5. Reprimand;
6. Suspension;
7. Training or other corrective action;
8. Reports; and
9. Conditions relating to the above.

F. Appeal

1. If the decision rendered by the Hearing Panel finds that the allegations are not established, no further action on the appeal shall occur.
2. If the decision rendered by the Hearing Panel is not favorable to the applicant or certificant, the applicant or certificant may appeal the decision to the Appeals Panel by submitting a written appeals statement within thirty (30) days following receipt of the decision of the Hearing Panel. NATA may file a written response to the statement of the applicant or certificant.
3. The Appeals Panel shall render a decision on the record below without oral hearing, although written briefing may be submitted.

G. Decision

The decision of the Hearing Panel or the Appeals Panel shall be rendered in writing following the hearing and any briefing. The decision shall contain factual findings, conclusions of law and any sanctions applied. It shall be transmitted to the applicant or certificant by certified mail, return receipt requested.

H. Summary Procedure

Whenever the Review Panel determines that there is cause to believe that a threat of immediate and irreparable injury to the health of the public exists, the Review Panel shall forward the allegations to the Hearing Panel. The Hearing Panel shall hear the matter by immediate telephonic or other expedited notice and hearing procedure. Following such notice and opportunity by the individual to be heard, if the Hearing Panel determines that a threat of immediate and irreparable injury to the public exists, certification may be suspended for up to 60 days pending a full hearing under the procedures in Section IV, above.

I. Release of information

The individual applicant or certificant authorizes NATA and its agents to communicate all information relating to NATA application, certification and review thereof including pendency or outcome of disciplinary proceedings to state and federal authorities, employers, other members, training programs, and others by means of newsletter or otherwise.

J. Waiver of Recourse

The individual applicant or certificant waives any right to recourse against NATA, its officers, directors, agents, employees, committees, counsel and others for disciplinary or action taken pursuant to the rules and standards of NATA.

K. Reconsideration of Eligibility and Reinstatement of Certification

Eligibility will be reconsidered and certification granted on the following basis:

1. in the event of a felony conviction directly related to public health or athletic care or education no earlier than one year from the exhaustion of appeals or release from confinement, whichever is later;
2. in any other event, no earlier than one year from the final decision of ineligibility or revocation.

In addition to other facts required by NATA, such an individual must fully set forth the circumstances of the decision denying eligibility or revoking certification as well as all relevant facts and circumstances since the decision relevant to the application. Where eligibility is denied because of felony conviction, the individual bears the burden of demonstrating by clear and convincing evidence that the individual has been rehabilitated and does not pose a danger to others.

L. Submission of information to NATA concerning possible violation of NATA standards

Persons concerned with possible violation of NATA standards should identify the persons alleged to be involved and the facts concerning the alleged conduct in as much detail and specificity as possible with available documentation in a written statement addressed to the Executive Director. The statement should identify by name, address and telephone number person making the information known to the NATA and others who may have knowledge of the facts and circumstances concerning the alleged conduct. Supplementation relating to the content or form of the information may be requested.

XLIV. DIRECTORS' LIABILITY INSURANCE:

Moved by District 10, seconded by District 9 and carried 9-0 to instruct the Executive Director to continue his search for Director's Liability Insurance.

Moved by District 10, seconded by District 3 and carried 9-0 that it be NATA policy that whenever an athletic trainer is indicted in any manner in relation to any article written about that individual, that Mr. Ehrlich determine the name of the individual indicted and the facts surrounding that particular indictment.

XLV. NEW NATIONAL HEADQUARTERS AND HALL OF FAME LOCATION:

The Board listened to two presentations, one of them being a group of individuals from Birmingham, Alabama, offering facilities and various forms of inducements for the NATA to locate in Birmingham and the second presentation being from a group of trainers from Texas offering an already constructed building at Grand Prairie, Texas for the housing of both the NATA Headquarters and Hall of Fame.

Following subsequent discussion on this issue, the following motions were presented and actions taken thereon:

Moved by District 9, seconded by District 4 that the National Office be moved to Birmingham, Alabama. A hand vote indicated District 9 as being in the affirmative and Districts 8, 7, 6, 4, 3, and 2 being in the negative and with District 1 abstaining — the motion thereby being declared to be defeated.

Moved by District 6, seconded by District 7 and carried 9-0 that the facilities offered in Grand Prairie, Texas be purchased for investment purposes for the NATA Foundation.

Moved by District 6, seconded by District 7 that the National Office by moved to Grand Prairie, Texas. The vote was District 6 and 7 - yes; District 2, 3, 4 and 8 voting no; Districts, 1, 9 and 10 abstaining, with District 5 absent. ⊕

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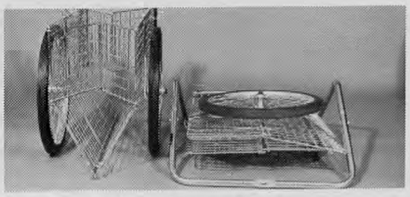

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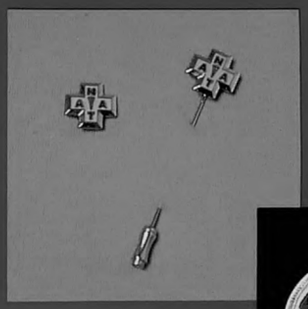

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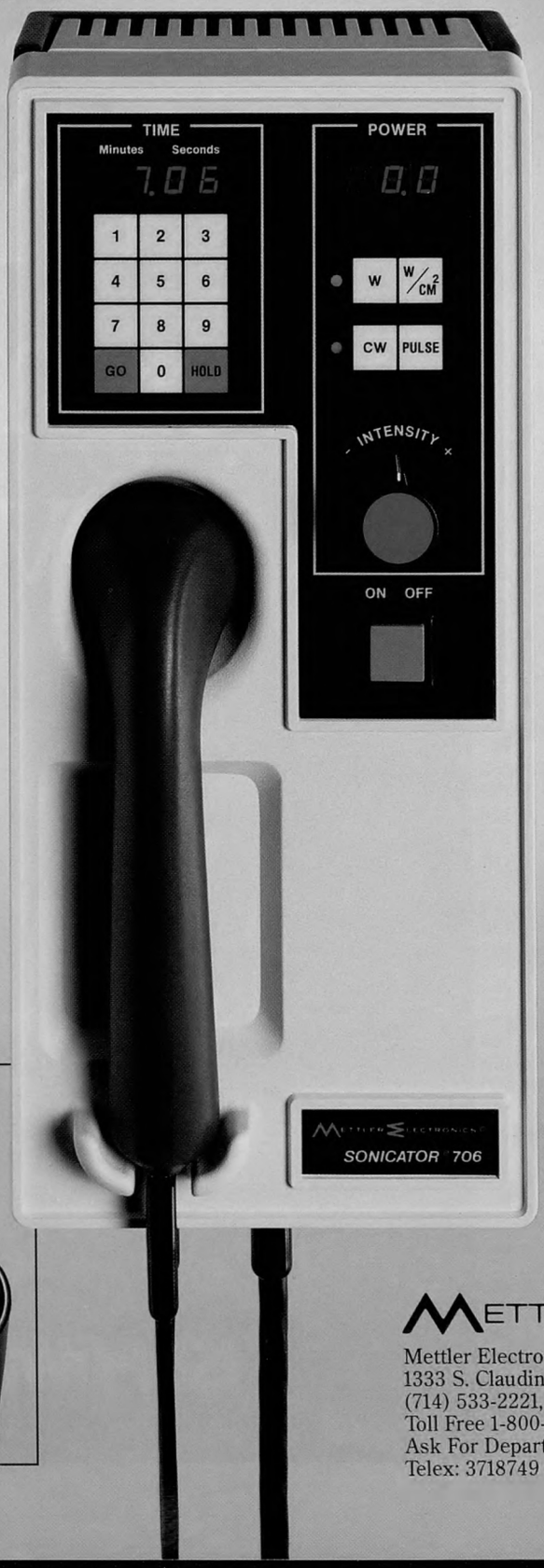

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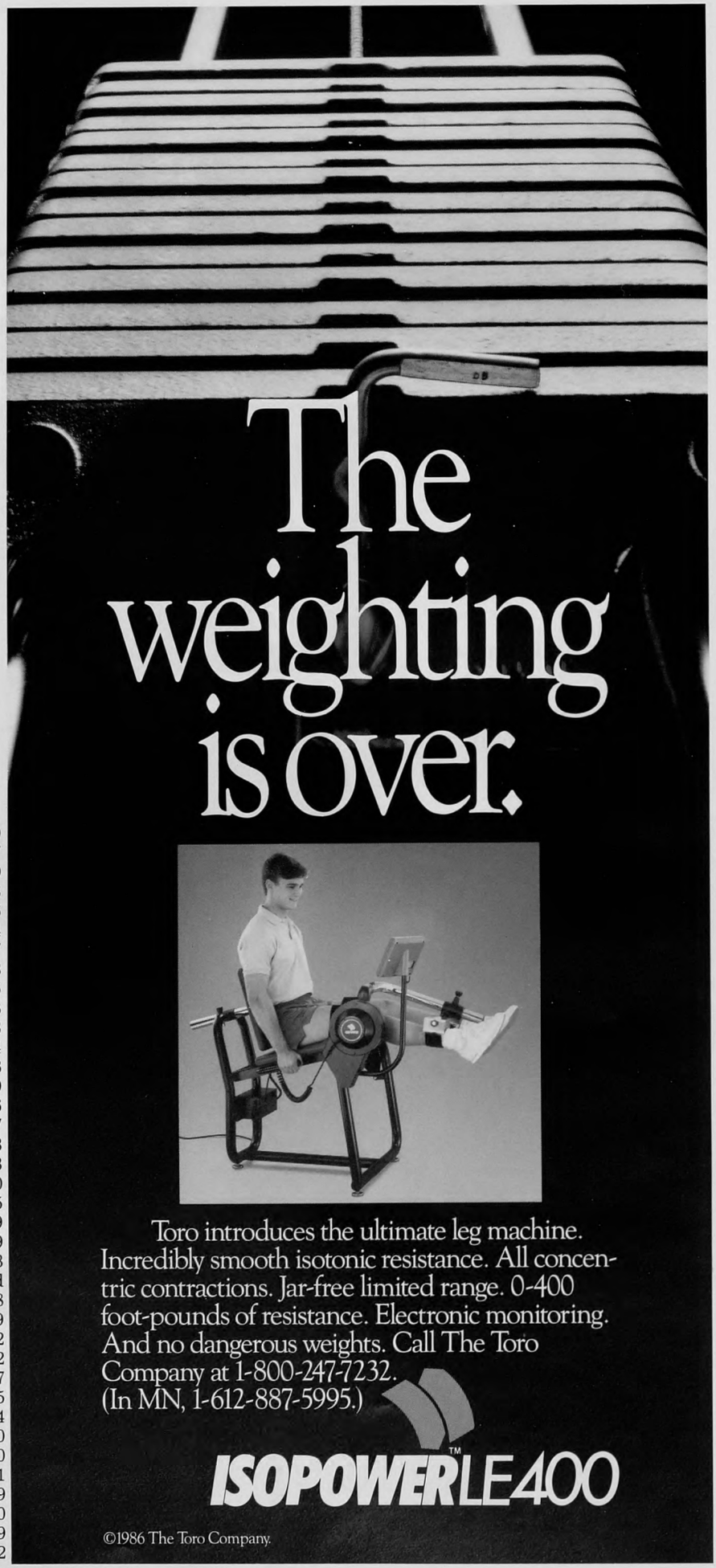

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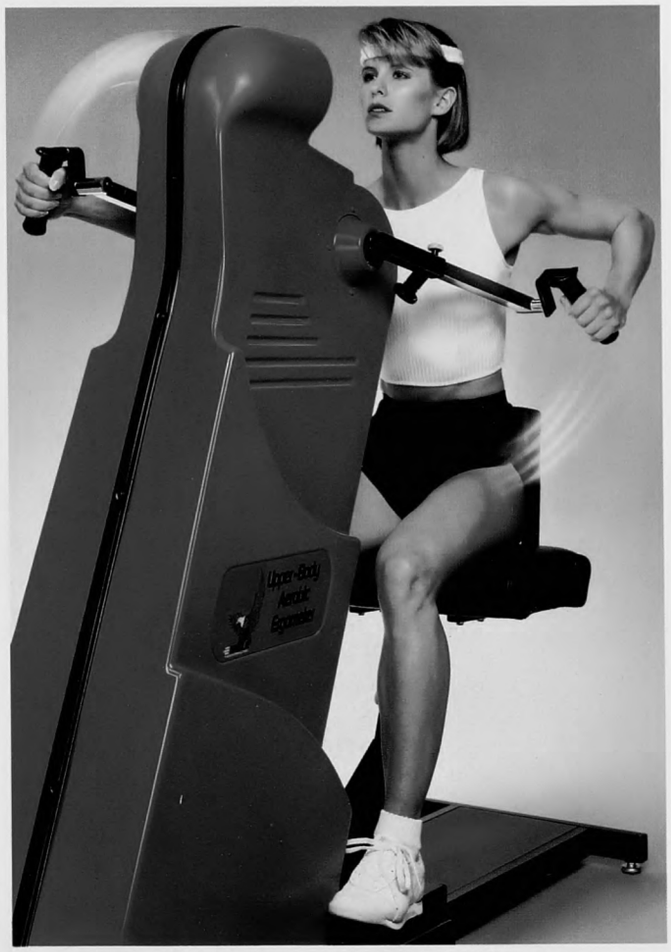

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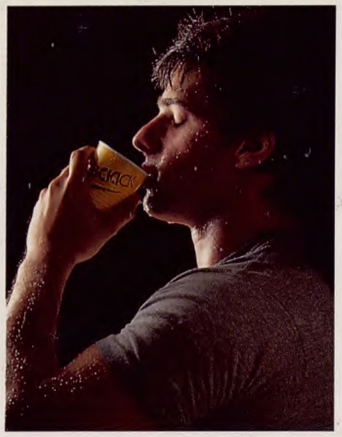

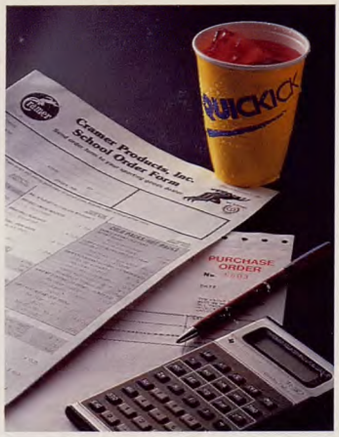

QUICKICK TASTES GREAT
Quickick's great taste promotes rehydration, thus helping to prevent heat injury. By maintaining the body's electrolyte-fluid balance, athletes can stay physically and mentally sharp. Performance is enhanced and injuries are prevented.

QUICKICK COSTS LESS
Compared with its major competitors, Quickick is less expensive. And with the Bucks for Budgets Rebate Offer, Quickick saves you even more —up to $2 extra per case.

FIVE FLAVORS
Quickick comes in a variety of flavors: Fruit Punch, Orange, Lemonade, Lemon-Lime and Grape. Each flavor provides energy while replacing the essential fluids and electrolytes athletes lose through exertion.

QUICKICK IS TIME-TESTED
It's the original electrolyte drink. Season after season, coaches and athletic trainers rely on Quickick's proven formula to reduce heat stress and help their athletes maintain sharper reflexes.

IF THESE REASONS AREN'T ENOUGH TO GET YOU TO TRY QUICKICK,® MAYBE THIS IS.

Up to $2.00 A Case Rebate Offer To Stretch Your Budget.

Order Quickick as your school's electrolyte drink in 1987 and earn rebate dollars for your program.

For every one-gallon case of Quickick, Cramer will rebate $1.00 ($2.00 for every five-gallon case) for your school's athletic program.

Look for details in specially marked BUCKS FOR BUDGETS cases of Quickick. Available at your local sporting goods dealer. Offer expires 11/30/87.

QUICKICK
BUCK$ FOR BUDGET$
REBATE OFFER

Need more reasons to make Quickick your electrolyte drink?

Cramer Products, Inc.
P. O. Box 1001
Gardner, KS 66030
(913) 884-7511

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