THE JOURNAL OF THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

VOLUME 4 NUMBER 3 FALL 1969


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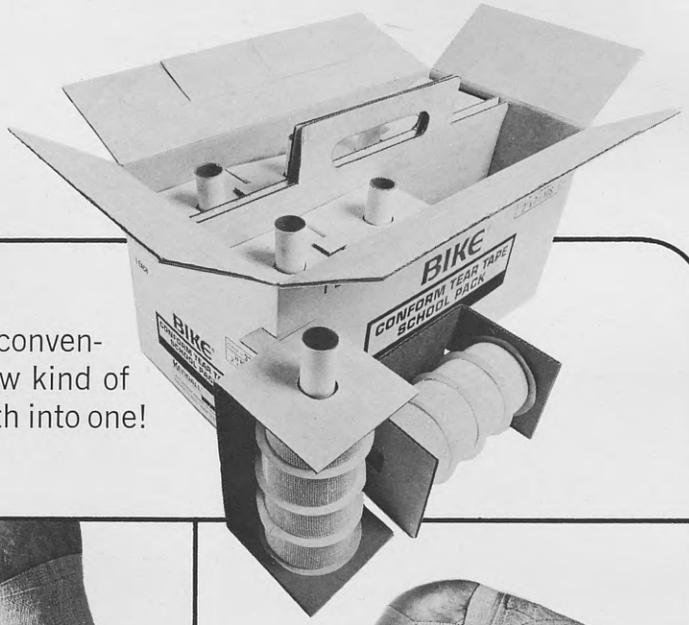

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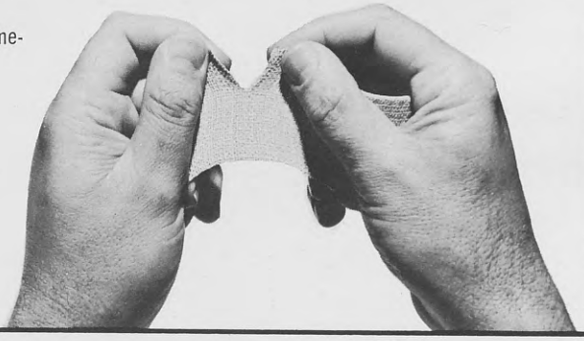

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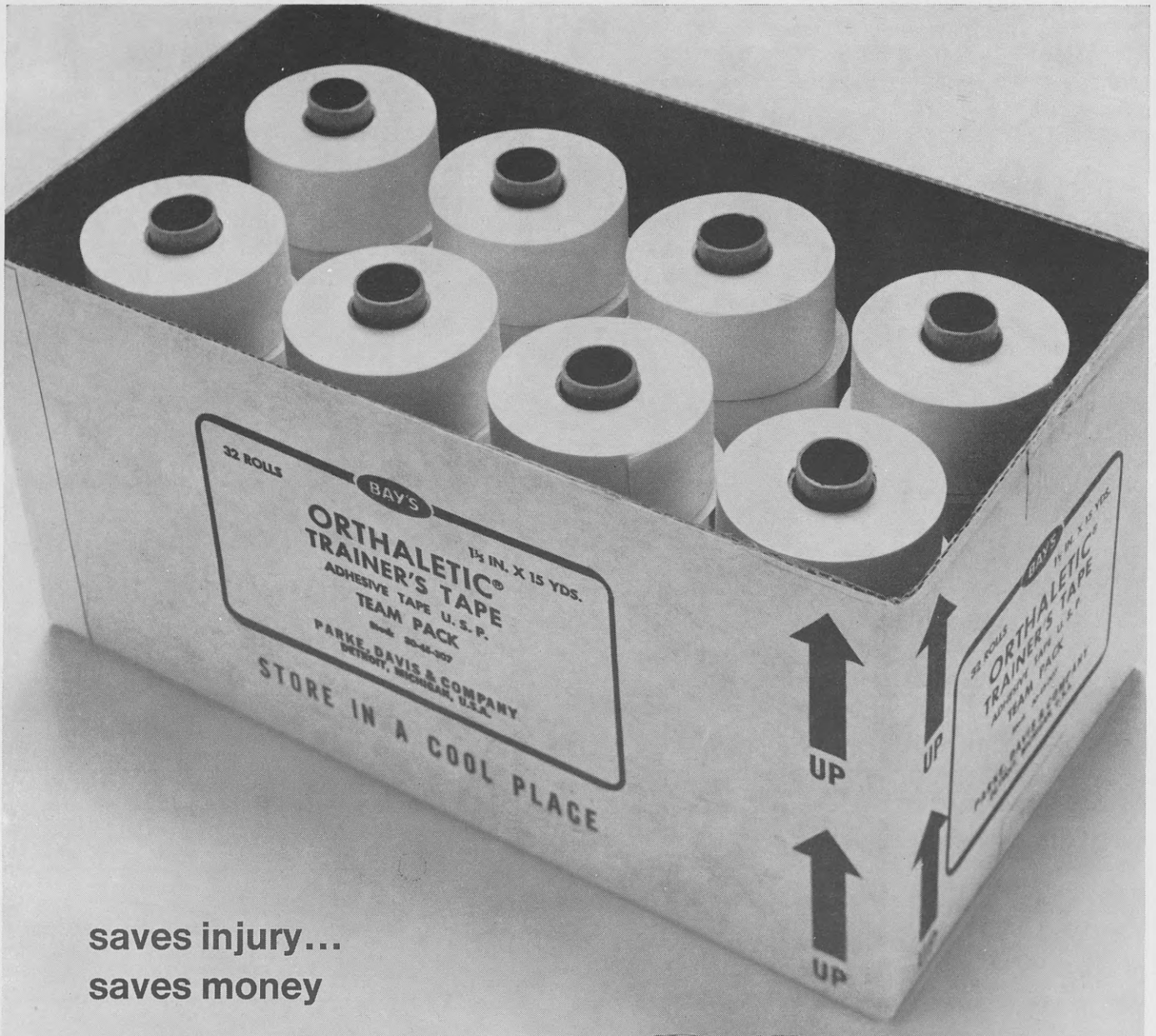

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THE JOURNAL OF THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

VOLUME 4 NUMBER 3 FALL 1969

CONTENTS

DIRECTORS AND SECRETARIES

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

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

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

Second class postage paid at Lafayette, Indiana 47904.

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

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

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

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

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

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

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

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

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EDITORIAL I

Listed on the title page of this issue, as in the past, are the names and addresses of the Board of Directors of the National Athletic Trainers Association. Being added this issue is a list of the district secretaries. These names and addresses are provided as a service to the members of our organization.

With the state of flux that now exsists in the organization, the men in these positions take on ever increasing loads in the service of those members that they represent. In their capacity as decision makers, the Board of Directors are directly responsible for the great strides that are now being taken. The hours of study preceding the national meeting, accompanied by the long arduous meetings themselves, make the national meeting a veritable business trip for the directors. This work, accompanied by each director's business on the district level, in addition to the continued functioning as professionals in their field, provide these men with a very active two years in office.

The district secretaries manage to stay busy as well. The work of these men is aimed at the district level rather than the national level, however, the work is no less important. Generally, these are the men who handle the dues, process memberships, stay abreast of job openings and publish the district newsletter in addition to their functions at district meetings. They handle a lot of the organizational work and do an efficient job.

EXIST TO SERVE

It must be remembered, though, that both of these groups exist to represent and serve the membership at large, with other functions secondary to these. They cannot do this work alone. The job they do in representing and serving you as a member depends a great deal upon you. It is through your interest and cooperation that these men function. It is you, the individual member, who forms the entire structure upon which the organization is built. It is for you that it functions.

So, if you have a question, a gripe, or a compliment in regards to the organization, get in touch with one of your district representatives. This gives them an opportunity to serve you better, and you, in turn, help to build the quality of the National Athletic Trainers Association. – C.S.

EDITORIAL II

As reported in the minutes of the June 7,1969 Board of Directors meeting, a special committee was established to provide an improved Journal with a more professional format.

Some of the changes that are forthcoming will be of a technical nature, and are due within the next two or three issues. Some of the alterations expected will be of a graphic nature and more readily seen. These changes, however, may have to wait for a reevaluation of the editorial structure and any of the subsequent changes coming from it. These changes, depending on the time required for reevaluation will be a year or two in the future.

The possibility of providing an additional two issues annually would, at present, have to be considered immenent even though no time table is possible right now.

All of the proposals mentioned in the Board of Directors meeting are related to the changes mentioned here. Some of those proposals are excellent, but some of them are in need of a closer scrutiny. This will be the work of the committee until the next Board of Directors meeting.

How does all of this involve each member? First, the committee would appreciate any comments concerning the Journal as it now exists, including suggestions for improvement. Such comments cannot be considered, however, unless they are submitted. Second, as has been mentioned elsewhere, and will probably be mentioned again, a call to your library with a request that the Journal be included as a part of its stacks will be a big step forward. And last, a situation that is of importance now, and will become far more important in the near future is the submission of articles. Consideration of an increase in the number of issues to be published annually must be based to a great extent upon the probability of material being made available for publication increasing proportionally. This leaves the opportunity for growth almost entirely up to the membership, as an article cannot be accepted or rejected for publication unless it is first written and then submitted.

The committee, completely open for comments or questions, includes Mr. Marvin Roberson, Editor; Mr. Clyde Stretch, Assistant Editor; Mr. Ellis Murphy, Managing Editor; and Mr. Jack Rockwell, Executive Secretary of the N.A.T.A. The addresses of each of these men appear on the title page of each issue. –C.S.

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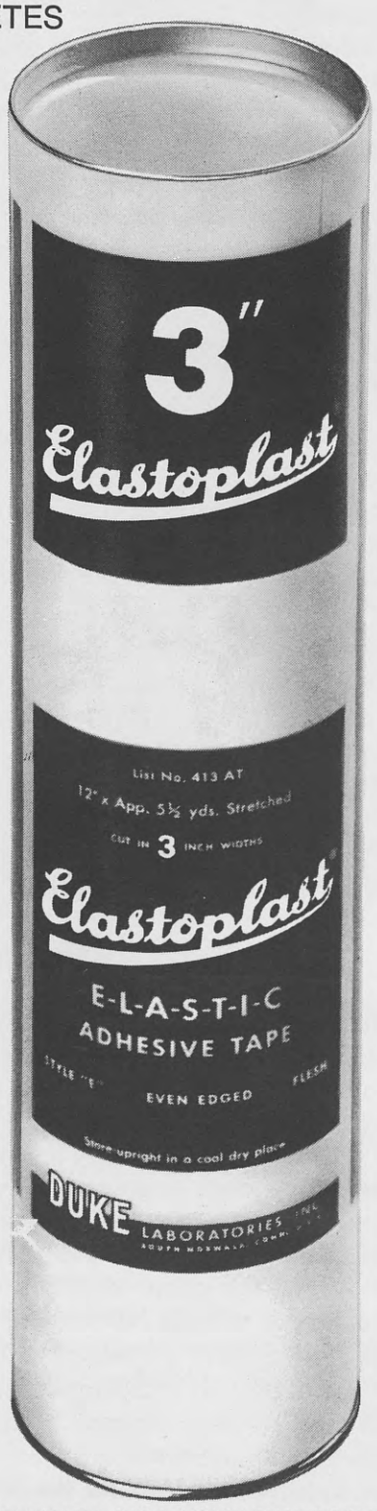

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ELASTOPLAST–MADE IN U.S.A.–THE ORIGINAL E-L-A-S-T-I-C ADHESIVE TAPE AND UNIT DRESSINGS

The Neck Collar: An Evaluation

by Alan T. Marshall, Maryville College*
Maryville, Tennessee

INTRODUCTION

The occurrence of serious and fatal injuries to the head, neck, and cervical spine is a significant problem in football. In the ten-year period of 1956-1966, the average yearly number of fatalities which resulted directly from head and neck injuries represented three out of every four fatalities, or 73.1 per cent of the total number of fatalities.[2] In 1966 and 1967, this percentage increased to 95.8 per cent, or twenty-three out of the twenty-four fatalities which occurred during these two years.[2,3,5]

The 1967 Special Football Injury Survey, sponsored by the National Collegiate Athletic Association and the National Athletic Trainers Association, reported that injuries to the neck and cervical spine constituted 12 per cent of all injuries compiled from the 336 reporting colleges.[1] Although comprehensive national statistics are nonexistent, there have been a number of serious injuries to the cervical spine which have led to complete or partial disability to football participants.

The neck collar used in interscholastic and intercollegiate football has been in use for about fifteen years; and at the present time, there have not been any research studies made exclusively about it. The purpose of this research paper is to evaluate the neck collar and report upon its effectiveness as preventive equipment to reduce injuries to the neck and cervical spine.

METHOD

Subjects

The subjects used in the present study were groups of male college students from the Maryville College football team. All subjects had "no history of neck injury or disability."

Apparatus

The primary apparatus of this experiment was the neck collar which is employed in interscholastic and intercollegiate football. Neck collars were obtained from various manufacturers and, for the purposes of analysis and experimentation, were classified into three types. Neck collars of type A were round with a diameter of two inches. Type B neck collars were round with a diameter of one inch. Neck collars which were contoured with a greatest width of one and one-half inches were classified as type C. All collars were made of plastic-coated foam rubber and were equipped with laces for attachment to shoulder pads.

The measuring device employed in the present study was similar to that used by Chrisman, Snook, Stanitis, and Keedy.[4] It was composed of an indicator, which could be attached to the helmet at various points, and a chart bearing a semicircle which had been marked in degrees by tens. A small refrigerating unit was used in testing the neck collar for the effects of cold.

Procedure

The present study was divided into three experiments, or parts, to provide for a complete analysis of the neck collar.

Part I – Twenty-eight offensive and defensive football players were divided as evenly as possible according to the positions played by the subjects. To give the subjects experience with neck collars, four trial situations were employed: use of collar type A, use of collar type B, use of collar type C, and no neck collar used. The four groups of subjects experienced each of the trial situations for a period of four days or practice sessions (Table 1).

TABLE 1
TRIAL SITUATION FOR EACH GROUP OF SUBJECTS DURING EACH FOUR-DAY PERIOD

Days	Group I	Group II	Group III	Group IV
1-4	A	B	C	No collar
5-8	B	C	No collar	A
9-12	C	No collar	A	B
13-16	No collar	A	B	C

At the end of the sixteen days of trial sessions, each subject was given the choice of whether or not to wear a neck collar in a final practice session. If the subject chose to wear a neck collar, he was asked to indicate his preference of collar type A, B, or C. For each subject, the position played and the choice made were recorded; and for each positive choice, the preferred collar type was listed.

Part II – After a brief period of warm-up exercises for the neck, forty-four subjects wearing their own shoulder pads and a helmet provided by the experimentor were individually seated in front of the chart of the measuring device. The indicator

*From a preparation for The Committee on Competitive Safeguards and Medical Aspects of Sports of the National Collegiate Athletic Association, Carl Blyth, Chairman

was attached to the front of each subject's helmet. Flexions laterally to the right and left shoulders were recorded in degrees as indicated by the measuring device. This process was then repeated with the subjects wearing neck collar types A, B, and C. For each neck collar, lateral flexions to the right and left were measured in degrees and recorded as indicated.

Each subject then was seated in front of the chart in the side position, facing left; and the indicator was attached to the right side of the helmet. As each subject forced the neck in hyperextension, measurements in degrees were recorded. This process was repeated for each subject wearing neck collar types A, B, and C.

Thus each subject was measured for lateral flexion to the left shoulder, lateral flexion to the right shoulder, and hyperextension with the following variables: shoulder pads only, shoulder pads with type A neck collar, shoulder pads with type B neck collar, and shoulder pads with type C neck collar.

Part III – Neck collar types A, B, and C were placed in a small refrigerating unit for a period of one hour. They were cooled to a temperature of 40° F. to simulate cold weather during a game or practice session.

RESULTS

Part I – Of the twenty-eight subjects who were given the choice of whether or not to wear a neck collar in a final practice session, fourteen subjects chose to do so. Two subjects selected neck collar type A, eight chose type B, and four chose type C. The positions played by the fourteen subjects and their choices of neck collar type are shown in Table 2.

TABLE 2
POSITIONS PLAYED AND PREFERENCE OF NECK COLLAR TYPES FOR FOURTEEN SUBJECTS WHO CHOSE TO WEAR A NECK COLLAR IN A FINAL PRACTICE SESSION

Position	Choice of Neck Collar
Safety	Type B
Defensive End	Type C
Defensive End	Type B
Interior Lineman	Type A
Interior Lineman	Type A
Interior Lineman	Type B
Interior Lineman	Type B
Offensive Halfback	Type C
Offensive Halfback	Type C
Defensive Halfback	Type C
Linebacker	Type B
Linebacker	Type B
Linebacker	Type B
Linebacker	Type B

Part II – For the total number of subjects, the average measurement in degrees was found in each situation: lateral flexion to the right shoulder, lateral flexion to the left shoulder, and hyperextension. This was done with each of the four variables:

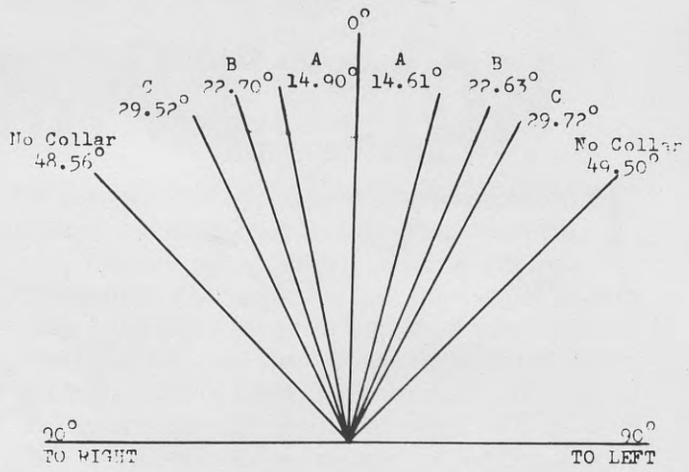

Fig. 6.—Average measurement in degrees for lateral flexion to the left and to the right for each variable

no neck collar, neck collar type A, neck collar type B, and neck collar type C. These average measurements are given in Table 3 and are illustrated in Figure 6 and Figure 7.

TABLE 3
AVERAGE MEASUREMENTS IN DEGREES FOR EACH SITUATION UNDER EACH VARIABLE

Situation	No Collar	Type A	Type B	Type C
Lat. Flexion to Left	49.50°	14.61°	22.63°	29.72°
Lat. Flexion to Right	48.56°	14.90°	22.70°	29.52°
Hyperextension	56.31°	18.34°	31.20°	43.61°

Part III – It was noted that neck collar types A, B, and C were hard to the touch when cooled to a temperature of 40° F.

DISCUSSION

Several conclusions can be drawn from the results of the present study. They encompass both physical and psychological factors, and added information which has aided in the evaluation of the neck collar.

The neck collar provides neck restriction in varying degrees according to the type of collar worn. Type A neck collar provides the greatest restriction, followed by type B, whereas type C neck collar provides the least restriction to the neck. The neck collar also restricts the visual field in certain movements. The collar will not restrict vision laterally because the athlete will naturally roll his shoulders in order to compensate for this loss. Since the collar provides no restriction to the flexion of the neck, no loss of visual field will occur; however, the collar does limit the visual field when the neck is in hyperextension. This visual

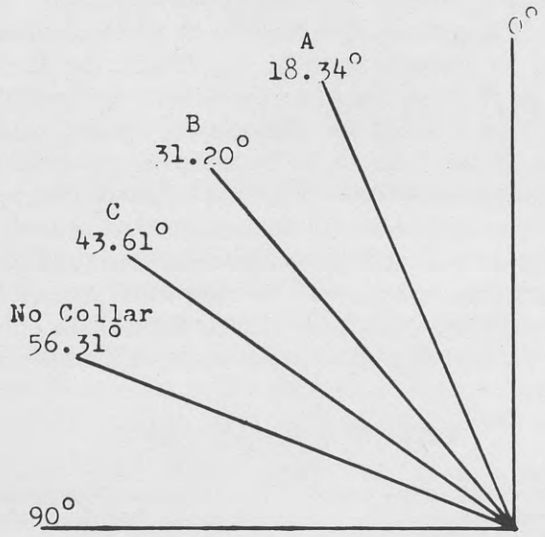

Fig. 7—Average measurement in degrees for hyperextension under each variable

reduction will occur in a progressive ratio, with type A neck collar giving the greatest reduction in visual field, followed by type B, and then type C. If the collar is to be worn for prevention of injuries to the neck, specific collars should be worn by participants in the following player positions. Collar type A is recommended for the interior linemen, while type B should be worn by linebackers, defensive ends, and monster men. Type C collar is best suited for safety men, quarterbacks, offensive and defensive backs, and offensive ends.

The results of the trial period, in which players chose whether or not to wear a collar and indicated their preference of collar type, represent the psychological aspect of the collar. For years the collar has been the sign of the "big hitter." Although it was impossible to determine accurately the personal reasons for the selection of a specific collar, all the players mentioned that they felt more secure with a neck collar. Those participants who decided not to wear a collar reported that it either made them feel uncomfortable or that it restricted the neck and visual field. Any player who had had no previous neck disability, and who is sincere in his desire to wear a collar, should be given the opportunity.

During the trial period and throughout the football season, no significant injuries were recorded. From the present study, it cannot be accurately determined whether the neck collar will significantly reduce neck injuries; however, the increased restriction effected by the collar signifies that any participant who has had any previous injury should wear a neck collar to help prevent reinjury.

Throughout the present study, this researcher gained much experience in the everyday use of the neck collar. This experience has led to the formulation of the following recommendations:

1. *Because the neck collar must be adjusted around the neck in order to provide the proper restriction, the collar must be fitted to the shoulder pads under the supervision of the trainer. The anchors and laces must be attached securely. Figure 8 illustrates the manner in which the collar should be worn in order to provide the proper neck restriction. A daily functional test of the collar must be made by the trainer, and this can be accomplished during the warm-up period by using the procedure which follows:*
   (1) *Check the condition of the anchor laces.*
   (2) *Test the laces to see if they are tight.*
   (3) *Check and test to see if the collar is securely tied to the front of the shoulder pads.*
   (4) *Have the participant rotate his neck to make certain the collar is providing the proper restriction.*
2. *When the collar is adjusted properly, the neck will rub on the inside of the collar, especially in the area of the woven anchor straps; therefore, the use of skin lubricant is required in order to prevent irritation of the neck.*
3. *During hot weather, the collar curtails the proper evaporation of perspiration; therefore, the use of a V-neck football shirt has an advantage over the crew-neck type.*

The physical characteristics of the collar have been studied in terms of the environmental conditions to which it is subjected. Since football is played in temperatures which usually never exceed 105°F., the environmental heat conditions will have no effect upon the collar; however, cold temperatures have a definite effect. When the environmental temperature decreases to 40°F., the molecular structure of the collar contracts, resulting in hardening of the collar. In severe temperatures, below 30°F., the collar becomes so hard that it may subject the neck to a contusion injury when the neck is forced either laterally or in hyperextension.

SUMMARY

The purpose of the present study was to evaluate the neck collar used in interscholastic and intercollegiate football. The collars presently utilized were classified into three types. Research was divided into a trial period for use of the collar to determine the psychological factors involved, an experiment to measure neck restriction, and a test to discover the environmental effects of cold upon the collar. The results of the research led to the conclusion that the psychological factor has a definite effect upon those who wear the collar. The collar provides restriction to the neck, the amount varying according to the type of collar worn; furthermore, restricted vision results when the neck

is in hyperextension. Environmental hardening may result in sufficient hardening of the collar to cause contusion.

The following five recommendations were made about the use of the collar. (1) Collar type A should be worn by interior linemen; collar type B by linebackers, defensive ends, and monster men; collar type C by safety men, quarterbacks, offensive and defensive backs, and offensive ends. (2) Any participant who expresses his sincere desire to wear a collar should be given the opportunity. (3) The collar must be fitted to the shoulder pads under the supervision of the trainer, and a daily functional test must be made. (4) In order to prevent irritation of the neck in the areas of the woven anchor straps, a skin lubricant should be applied. (5) In hot weather, the V-neck football shirt has an advantage over the crew-neck type.

The observed restriction to the neck by the collar has led to the conclusion that the neck collar is an effective device to aid in the prevention of injuries to the neck; however, further research must be made in this area before the collar should be accepted as manditory equipment. The observed restriction to the neck has also led to the conclusion that the collar should be required equipment for any player who has had previous neck disability or injury. However, the collar must be correctly adjusted in order to provide proper restriction.

As it is questionable whether or not the collar would be properly worn by all players, the decision to wear a collar as preventive equipment should be decided by the player, trainer, and coach. If the collar is to be worn as preventive equipment, the safety factor must be recognized by the player so that he will be conscientious in making proper adjustments to the collar during practice sessions and games. As with other types of protective equipment, the effectiveness of the collar is directly related to the attitude with which it is worn.

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Anthology of Sports Medicine Articles

American Academy of Orthopaedic Surgeons Symposium on Sports Medicine

Reviewed by Clyde Stretch
Michigan State University, East Lansing, Michigan

The first hard cover book of this kind dealing with sports medicine and the first published group of articles dealing with athletics since the demise of the ***Proceedings of the National Conference on the Medical Aspects of Sports,*** will hopefully be the first of many to come from the American Academy of Orthopaedic Surgeons. Although the price of the book ($15) is considerably higher than that of the American Medical Association's previous publications, it is an investment of considerable quality.

Almost any time that twenty different articles on varying subjects by several authors are placed within a single cover, it is difficult to have the reader completely satisfied with every aspect of the book. This book would have to be categorized as that type. From the trainer's point of view, a couple of the articles are fairly technical. Several others deal with aspects of orthopaedic surgery of interest primarily to physicians.

Again from the trainer's standpoint, over half of the articles should be found to range from interesting to excellent. Three outstanding articles are presented dealing with various aspects of throwing, one on the shoulder, one on the arm, and one dealing specifically with trauma to baseball pitchers' elbows.

One article of questionable relevance to athletic injuries, but which makes fascinating reading. This is a discussion of the anthropologic and physiologic observations of a tribe of Mexican indians who, as a whole, are outstanding endurance runners.

Considering the book as a whole, it would have to be rated very good. Considering the pocketbook, however, it would probably best be examined in terms of its uesfulness to each individual as a pertinent source of reference.

Published by the C. V. Mosby Company, St. Louis, Missouri (1969) *Literature Available from The Publisher on Request.*

CERVICAL SPINE INJURIES: IMMEDIATE FIRST AID

by Ralph W. Berlin, Trainer, Pittsburgh Steelers Football Club, Pittsburgh, Pennsylvania*

The season of 1967 will be one I will never forget. I was then the Trainer at the University of Kentucky. During the early pre-season practices, we had two severe cervical spine injuries; one resulting in death, the other resulting in permanent partial paralysis. The two injuries occurred within two weeks of one another.

The first injury occurred on August 22nd during the first period of the afternoon session. Due to the fact that we had so much time prior to our opening game, we were working out in shorts, shoulder pads, and head gear. After the usual warm-up exercises, a five-minute period called "explode and pursuit" began. The drill is really a warm-up drill designed to get the kids used to hitting. I was approximately twenty yards from the drill. The athlete was a nineteen-year-old sophomore defensive end.

Several plays were run and after a pile unpiled, I saw a boy apparently unconscious on the ground. When I arrived it was obvious he was not unconscious, but something was definitely wrong. The athlete was conscious and was trying to tell me something. My first reaction was that he had had the wind knocked out of him.

The boy could not talk due to the fact that this injury was at the C-1 level. He did move his lips and tried to tell me he couldn't breathe.

All the years I have been a trainer I have carried a oral screw, tongue forceps, tongue blades, and resusitube in a pouch. I never had to use them. It was apparent that the boy was in real trouble.

One of our team physicians, Dr. William Wheeler (a fine athlete during his college days), was in attendance at practice. I sent my student assistant after him.

We were unable to get the boy's mouth open for an airway originally, and mouth-to-mouth resusitation was given till he was oxygenated enough to cooperate and open his mouth. The resusitube was inserted and we began to breathe for him.

The on-field diagnosis was a total quad with no respiratory effect. We had a stretcher in the dummy shack on the field.

With the doctor supporting his neck and head, we placed the boy on the stretcher and removed him from the field to the training room which is adjacent to the practice field.

All this time we were breathing for the boy. His uniform and pads were cut off him in the training room. Further diagnosis reaffirmed the doctor's initial diagnosis.

I had a student call the ambulance service which was located not three blocks from our practice field. We also called the University Hospital emergency room and told them we were on our way with a total quad with no voluntary respiratory function.

The ambulance arrived in a matter of minutes. As the ambulance turned in, Dr. Ralph Angelucci, our neurosurgeon was passing on his way home. He and the ambulance arrived simultaneously. He headed right for the hospital. Dr. Wheeler and myself accompanied the boy to the hospital.

Once there, a tracheotomy was performed and the pins inserted. Since X-rays revealed no fracture or dislocation, the boy was not decompressed. Our hopes were that it was a severe bruise and that the paralysis would be temporary.

The elapsed time from the time of injury until the boy was on the emergency room table was fourteen minutes.

This boy lived thirty-seven days and died the night prior to our Ole Miss game. An autopsy revealed unrepairable damage to the spinal cord in the form of a rather large circular area which resulted in a cavity-type defect in the cord at the C1-C2 level.

We talked with all the boys involved in the drill. The reports were varied. Some said he had hyperextended, others said he had hyperflexed. The doctors felt he had hyperflexed thus causing a subluxation of the cervical vertebra and unrepairable damage to the spinal cord.

The doctors told me we were fortunate to have gotten him to the hospital, and that had this been a high school situation, the boy possibly would have died on the field.

The second injury occurred on September 9th during the third quarter of a scrimmage. The athlete was an eighteen-year-old freshman defensive

*Based on a presentation made at Twentieth Annual Meeting National Athletic Trainers' Association Cincinnati, Ohio, June 9-11, 1969.

linebacker. In this instance, the boy remained conscious throughout. I was on the sidelines and was to him within seconds. Since he was conscious, on his back, and breathing normally, it was not necessary to use the resusitube.

Whenever the injured athlete is conscious, I always ask him what has happened. I have found that in most cases the athlete can give you a pretty good idea as to what has happened. In this case the boy told me he had broken his neck. I tried to calm him down and sent my student assistant after the stretcher.

Dr. George Gumbert, our team physician, came on the field immediately. The athlete was paralized from the mid chest down. He had partial control of one arm.

The doctor splinted the head and neck with his hands, and we placed the boy on the stretcher and removed him to the hospital. X-rays at the hospital revealed a fracture dislocation at the C-5 level. Traction was applied and the cervical spine did not return to proper alignment. Due to the inability to reduce the dislocation, the decision to surgically decompress his cervical cord was made that evening.

On examination, the cervical cord showed no visible sign of damage. Again we hoped that no permanent damage had been done. Unfortunately this was not the case. Last year he was sent to the Rancho Los Amigos Rehabilitation Center in Downey, California. Today the boy is still paralized from mid chest down. He has regained slight control of his arms. He has returned to school and is pursuing his education.

The boy was tackled with his head down thus forcing the cervical spine into hyperflexion and causing a fracture dislocation at the C-5 level. The boy had been advised several times by the doctor and myself to avoid the type of position he was placing his head in when he was about to make contact. Also, he used the spearing technique of tackling. We can only assume that the same tackling techniques were used by the first athlete. We had first thought that the boy had been possibly kicked in the head or neck. However, close examination of the film revealed that the only contact was the initial contact. The contact was of such force that the ball carrier was out two weeks with a moderately severe contusion to the vastus medialis even though he was wearing bridged thigh pads.

There is no question that there has been a sharp increase in the incidence of severe neck injuries. By severe I mean an increase in fractures and dislocations involving the cervical spine. We must impress over and over the vital necessity of tackling with the head up and the neck bulled. I feel proper tackling techniques are part of the answer to decreasing this type of injury. Also exercises to strengthen and maintain the musculature of the neck should be given daily. Still I am sure we will see injuries such as these again. Being properly prepared to handle these situations is a must on our part. As I stated earlier, I have always carried:

1. **Oral Screw**
2. **Tongue Forceps**
3. **Tongue Blades**
4. **A Resusitube**

All student trainers should be trained on the use of all. A few minutes can make the difference. Also several resusitubes should be in the training room. It so happened that in removing the first boy from the field the tube slipped out. Once in the training room I grabbed another out of a drawer.

A stretcher should be kept in the dummy shack or in an easily accessible area.

A station wagon at all practice sessions should be parked near or on the field.

Whenever possible the team physician should attend all scrimmage sessions.

Personally make arrangements for the ambulance for all games. Be sure visiting teams know where it is located.

Have a pre-arranged emergency plan and be sure all concerned know the procedure to be followed.

Usually fractures and dislocations produce similar signs:

1. **Spasm**
2. **Extreme Pain**
3. **Deformity**
4. **Some Degree of Paralysis**

When the injury occurs you will be the first to reach the athlete. The first minutes are the most important. If the athlete is not or cannot breathe, you will have to use the resusitube to establish an air way.

If he is conscious, let him tell you what happened. Don't panic; the athlete can sense this and you may cause him to go into shock thus compounding your problems. Exhibit confidence and reassure the injured player that everything will be okay.

The spinal cord and nerve roots may be injured in three basic ways: lacerations by body fragments, hemorrhage and contusion. These may be combined into a single trauma or may act as separate conditions.

If you suspect a cervical spine injury, a doctor and an ambulance should be summoned at once. Slight traction should be maintained on the neck to lessen the chance of further damage due to un-

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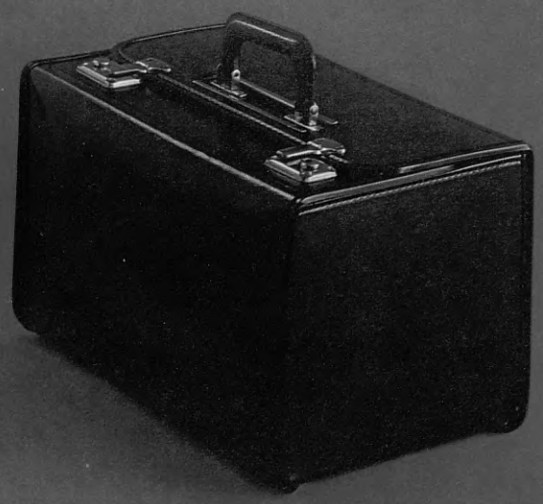

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necessary movement. Not until the physician has examined the athlete and given his permission should transportation be attempted.

If the team physician is not on hand and movement is necessary, splint the neck and head with as little body movement as possible.

Spinal cord shock, or the pinched nerve syndrome is very common today with all the head butting occurring. The athlete complains of numbness and a tingling sensation in his arms and fingers. After a while all of these signs leave and the athlete can move his arms freely with no remaining symptoms except a sore neck. This is caused by a mild compression type injury to the spinal cord. The physician should be consulted in all cases of moderate and severe neck condition. In some X-ray examination is the only method of detecting cervical dislocations or fractures.

Several years ago I had a defensive back come out of a scrimmage complaining of a so-called pinched nerve. He had been hit by one of his teammates in attempting a tackle. Fortunately for me it was late in the scrimmage for the pain and numbness subsided and the athlete was eager to return. The scrimmage ended before he was put back in.

I had him come into the training room after he had showered. He stated he felt okay except for a slight stiff neck.

The next morning he came in complaining of extreme pain, and muscle spasm. I sent him to our team physician where X-rays revealed a fracture to the dorsal arch at the C-6 level. Had the boy returned to the scrimmage the previous day, the results could have been catastrophic.

In the NFL prior to this year if an athlete were injured, his teammates could help him off the field without having a timeout charged to his team.

In professional football a rule change has just been legislated to protect injured players especially with back and neck injuries.

No longer are teammates permitted to run on the field and help a downed player off. The official now will stop the clock and, if necessary, charge the team with a timeout insisting the team's trainer and doctor come onto the field to assist the injured player.

It will also be required from now on in every case where there is the slighest thought of problems in getting a boy off that a stretcher must be used. It may take a little longer and charge the team with a timeout but the boy's safety is to be the first thought, and he is to be given the most diligent care.

If this information saves one boy next fall it will be well worth the time and effort involved.

Reference: *Modern Principles of Athletic Training,* Khalfs and Arnheim, Chapter 17.

Heat and Antihistamines

by W. Gary Carlton, Jr.
Assistant Athletic Trainer
University of Richmond
Richmond, Virginia

Football practice began at the University of Richmond on August 23, 1968 for the 1968-69 season. In preseason drills we practice twice a day at nine o'clock A.M. and three o'clock P.M., thus avoiding the hottest parts of the day.

On the first day of practice in light clothing, we had a football player suffer heat stroke. Toward the end of the morning, after approximately one hour and forty-five minutes of practice, this boy became quite dizzy and nauseated and presented the typical picture of heat exhaustion. He was brought into the gymnasium and subsequently into the training room. At this time he was semi-conscious and after a very short interval became totally unconscious. His symptoms at this time still presented the picture of heat exhaustion but his unconsciousness complicated that picture. He was pale, his skin was cool, and he was still sweating.

In the training room, his clothes were removed and he was sponged with cold water and given an ice massage. He did not respond to this and began to vomit. His pulse was unobtainable at the wrist. His blood pressure was taken with difficulty in reading and was 90/60 mm Hg.

Our team physician was advised and ordered the boy taken to a hospital emergency room. He was transported by ambulance. Ice massage was continued aboard the ambulance. His temperature rose on route to the hospital and on admission his rectal temperature was 104°F. His blood pressure was unobtainable. His temperature rose to 108°F. whereupon he was transferred to the intensive care unit.

He was treated with several drugs to maintain circulation, wrapped in an ice blanket, and his respiration was maintained for 12 hours with a bird respirator. He was also given intravenous

(Please turn to Page 26)

CONVENTION NOTES, 1969

Newest Additions to Hall of Fame: (left to right) Richard Wargo, Wesley Knight, James Morris.

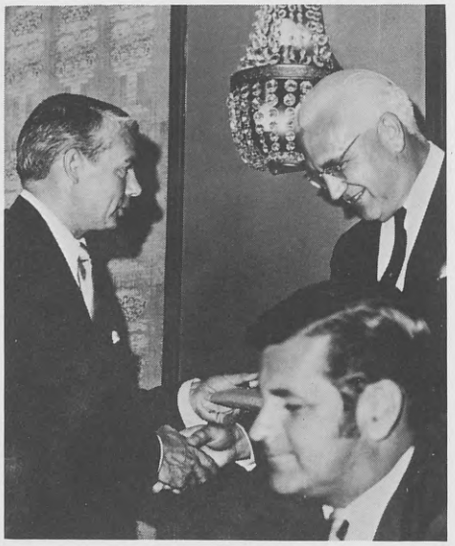
The twentieth annual convention resulted in a new record in attendance for both participants and exhibitors with more than 390 registrants reported by Joe Blankowitsch, Registration Chairman. The success of the annual meeting was due in great part to Program Chairman Al Hart and Entertainment Chairman Marvin Pollins and those members of district four who assisted these gentlemen.

Twenty-five year Awards were presented to Mr. Bob Spackman, Southern Illinois University; Mr. Davis Sandlin, Chattanooga University; and Mr. George Busenburg, Ohio State University by Porky Morgan, committee chairman.

For their fine assistance to trainers NATA honorary membership in the organization were awarded to Dr. Loyal Combs, Purdue University; Dr. Samuel Fuenning, University of Nebraska; Dr. Daniel Hanley, Bowdoin College; Dr. Carl Herzog, Duke Laboratories; and Dr. Kenneth Rose, University of Nebraska, by Don Fauls.

Highlighting the Awards Banquet was the presentation of the newest additions to the Helms Hall of Fame by George Sullivan. Wesley Knight, University of Mississippi; James H. Morris, Butler University; and Richard Wargo, University of Connecticut were honored for their outstanding work, service and contributions to the athletic training profession.

Don Fauls presenting honorary membership to Dr. Loyal Coombs, above left; Dr. Kenneth Rose, above right; Dr. Daniel Hanley, below left; Dr. Carl Herzog, center; and Dr. Samuel Fuening, below right.



BOARD ACTION AT THE 1969 ANNUAL MEETING

To clarify or interpret some of the actions taken by the Board of Directors, the Executive Secretary has written this article for the Fall issue of the Journal.

The work done over the past few years by the Professional Advancement Committee is rapidly culminating and will be completed in another year.

At the Board meeting in June, the Procedures for Certification were presented to the Board. These Procedures have been mailed to all Active and Associate members for study and ratification by mail vote. (Active members only will receive ballots). These Procedures have been approved and endorsed by each of several Allied Medical organizations to whom they were shown. With the approval of these Procedures for Certification, we can take a tremendous stride towards attainment of our ultimate goal, that professional standing in the Sports Medicine field.

The other phase of Certification discussed by the Board and acted upon, had to do with a Certification testing apparatus. The Board acting on the recommendation of Lindsy McLean, Sub-Committee Chairman, approved a contractural agreement with Professional Examination Service to develop and administer a Certification Examination.

The Sub-Committee met with PES in New York City in August to supplement and implement the development of the testing mechanism.

You will be kept aware of the proceedings as the work progresses.

In addition to the Certification Procedures and Test, it was proposed that a Resolution be adopted that would enbale Associate members not eligible for Active membership (due to a lack of a college degree) to apply for Active membership on a one time basis. That Resolution was printed in the Secretary's Report and was approved by

The possibility of providing an additional two in the Board of Directors.

If you are an Associate Member, who falls in this category, you must apply at your earliest convenience to your District for consideration.

As of January 1, 1970 this Resolution will no longer be included in the Procedures for Certification so it is extremely important that you take the time to apply very soon.

Mr. Sayers Miller, Sub-Committee Chairman, in his report on Curriculum development presented three schools to the Board of Directors for immediate approval. These three were approved and as this article is being written, there are fifteen other schools applying for approval of the NATA. If your school wishes to enter into this program, please contact Mr. Sayers Miller at Ball State University, Muncie, Indiana for particulars on applying for approval.

Also discussed during the Board Meeting was the problem of Re-organization of the Association. After an excellent report by the Ad Hoc Committee, it was decided that the Committee should continue its work with a target date for implementation of the Re-organization plan to be June 1970. The plans considered and reviewed would make the Association much more workable and would involve much more of the membership in actual working positions than is now possible.

The Association can and will be only strong as its membership wants it to be. Through greater participation in Association affairs by all members, we will have a much stronger organization and one which we all feel more closely associated with.

MEMBERSHIP REPORT

The Membership Committee report presented to the Board included an extremely well thought out interpretation of membership classifications. These interpretations were given to each Director for furthur study with an approval date being set for September 1, 1969. The changes or interpretations will be sent to all members as soon as they are approved.

One other item of business that was discussed was the collection of dues. It was felt that at least for the present the dues collection should be handled by the individual districts, but that emphasis must be placed on collection of dues before June 1st of each year. It will be mandatory to be paid up in your membership category for the present year before you will be allowed to register at the Annual Meeting.

It is the hope of the Executive Secretary that this article may have helped to answer any questions regarding the Boards action during the 20th Annual Meeting.

BITS AND PIECES

by Clyde Stretch

For those of you who read the excerpt in the June issue dealing with the football player and his heart attack and thought that it was a freak and almost never happens, here is something to think about.

Doctor Kenneth D. Rose reports in his "Telemetry in the Study of the Heart in Athletes, Part I," from the book *American Academy of Orthopaedic Surgeons Symposium on Sports Medicine* (C. V. Mosby, 1969) the following, "Blythe and Arnold[1], in their annual summary of football fatalities, state that since 1931, nondirect causes have accounted for 33% of all their recorded deaths and of these, 31.84% were from heart failure. There have been 100 deaths diagnosed as heart failure out of 943 total collected deaths. Thus 10.5% of all football-related fatalities in their series were from a condition diagnosed as heart failure.

• • •

The JOURNAL, 10 years ago this issue, Fall, 1959.

1. An athletic training curriculum, as presented by the professional advancement committee and approved by the membership, was presented in full, including the objectives and a suggested course outline.

2. In the article "Medical Hypnosis and Athletics," Dr. T. T. Peck suggests that the mild shock immediately following injury is quite similar to a state of hypnosis. This is a time when the athlete is quite open to constructive suggestion. This is a time to remove fear and apprehension as much as possible, as well as directing his thoughts away from the injury. The author continues with a discussion of the use of hypnosis in athletics.

3. Dr. R. D. Burk in his article, "Indications for Therapeutic Modalities," presents, in general terms, the modalities of exercise, heat, cold and water. He delves in more specific terms into the physiological effects of the various units within each modality.

4. "Sanitation in Physical Education and Athletics," by M. F. Wilson briefly presents some sanitary considerations which should be given to the locker, shower, drying and training areas.

5. In "A Talk Given at the National Convention," E. B. McCoy discusses the role of the athletic trainer in competitive athletics today.

• • •

Ice therapy has been discussed thoroughly over the past two years. An excellent summary of the discussion appeared in the May, 1969 issue of *Annals of Physical Medicine*. Here are portions of the article, "Ice Therapy," by E. N. Glick and M. Lucas.

"Inflamed and injured tissues are painful and frequently swollen. Joints are stiff and restricted in movement. Attempt at movement produces muscle spasm, and this may be present at rest. While some muscle spasm and immobility is protective and beneficial, prolonged immobilization leads to adhesions, muscle wasting and contractures, and hence judicious use of techniques to ease pain and relax spasm is necessary in order to allow movement.

It has been found empirically that cooling reduces muscle spasticity, relieves pain, and diminishes oedema. As cold applications should always be used in conjunction with specific muscle re-education, the therapist is reaping the benefit of the effects of cooling at the time of treatment.

1. *Effect On Local Circulation.* Cooling in water below 10°C. produces initially an intense vasoconstriction followed by periods of vasodilatation. There is no reliable evidence of the effect on muscle blood flow.

Local changes in circulation have been found to be effective in reducing oedema and assisting in the resolution of inflammation.

Cold therapy is therefore useful in recent trauma and inflammatory conditions where there is swelling and pain with loss of joint range; also for other conditions which respond to improved circulation with relief of pain. To obtain the best effects the towels must completely envelop the area involved.

2. *Relief Of Pain.* Cold relieves pain. The mechanism is not clearly understood, but factors may be the raising of the threshold of the pain recep-

[1] Blythe, C. S. and D. C. Arnold: "The Thirty-fifth Annual Survey of Football Fatalities, 1931-1966," American Football Coaches Association.

tors, slowing of frequency of sensory impulses or reduced production of pain-substance as a result of slower metabolism. Bombardment by impulses from cold stimuli may impair appreciation of pain stimuli.

It is important that the towels should be firmly wrapped round the joint so that they remain in place during exercise. For pain in distal parts of the extremities local immersion is quick and effective.

The analgesic effect of local ice-cube massage can also interrupt the pattern of pain impulses and allow a more normal pattern of movement to be established.

3. *Reduction Of Protective Muscle Spasm.* Cold reduces the action potential of muscles and this factor together with reduction of reflex activity due to pain reduces protective muscle spasm, which assists relaxation techniques.

4. *Reduction Of Upper Motor Neurone Spasticity.* Cold has been found to reduce the sensitivity of the stretch reflex. Muscle tone and contraction are controlled by the muscle spindles. Cooling apparently slows conduction in both the afferent and fusimotor nerve fibers and reduces the excitability of the receptor organ. When using towels they must be applied to cover the whole length of the muscle in spasm.

Immersion may be necessary, but before totally immersing patients with gross spasticity of lower limbs, one must be sure that they are not entirely reliant on this spasticity for their functional activity, as a decrease in extensor spasticity may reduce their independence.

5. *Facilitation Of Muscle Contraction.* Miss Rood in California has shown that when the edge of a dry ice cube is stroked briskly over skin where the dermatome has the same nerve supply as the muscle underneath, this muscle will be made more receptive to stretch.

6. *Decrease In Muscle Fatigue.* Cooling reduces muscle metabolism, oxygen demand, and inhibitory products, so allowing longer contractions. The longest contractions are obtained at 25° to 29°C. At lower temperatures impaired nerve conduction and alteration of cell viscosity impair contraction.

7. *Contraindications.* Cold therapy should not be used in the presence of peripheral vascular disease, including the arteries of rheumatoid arthritis and Raynaud's disease. It can produce an episode of paroxysmal hemagobinuria in patients with cold agglutins and autohemolysins. It is probably advisable not to treat patients with sickle-cell anemia or leukemia.

Large areas should not be cooled in patients with severe cardiac disease or cerebrovascular insufficiency, because of the possible effects on the general circulation.

Caution has been advised in the past regarding ice treatment over the heart and thoracic spine, but no ill effects have been recorded.

The psychological effect of apprehension in some nervous individuals who dislike cold, particularly certain elderly patients may in some instances outweigh the beneficial local action of the technique."

(I would like to add a case in which upon about eight minutes of application to a sprained ankle, about eighteen hours old, of a non-athlete produced a mild form of shock, requiring the cessation of treatment.)

1969 TRAINERS FOR THE NCAA TRACK AND FIELD CHAMPIONSHIPS

Left to right; bottom to top: 1. Jerry Robertson, East Tenn. State Univ.; Rod Compton, Ohio Univ.; Steve Moore, Tennessee Tech.; Jimmy Eakin, Univ. of Tenn.; Mike Dunham, Univ. of Tenn.; Bill Barry, Univ. of Tenn.—2. Tom Wall, Univ. of Tenn.; John Anderson, Washington State Univ.; Ducky Drake, UCLA; Bill Robertson, Oregon State Univ.; Frank Doane, Univ. of Tenn.—3. Mickey O'Brien, Univ. of Tenn.; Marv Roberson, Brigham Young Univ.; Wayne Rasmussen, University of Washington.

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CALENDAR

1. The American Medical Association's Eleventh Annual National Conference on the Medical Aspects of Sports takes place November 30, 1969 in Denver. Details may be obtained from Mr. Burnett, Staff Coordinator, Committee on the Medical Aspects of Sports, The American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.
2. On December 6, 1969, the Medical and Chirurgical Faculty of Maryland and Catonsville Community College, Baltimore, are sponsoring their third annual Sports Medicine Symposium.
3. Districts one and two, the Eastern Athletic Trainers Association will hold their annual meeting in Grossinger, New York on January 19-21, 1970. Information may be obtained from Mr. Spud Kruzan, Albany State Teachers College, Albany, New York 12203.

NATIONAL NOTES

Jack Rockwell, Executive Secretary

It is hoped that you will be able to take time to read this column in the midst of football activities. As the column was put together, it didn't seem possible that another summer has gone by so swiftly. The Convention held in Cincinnati, the largest ever, seems like yesterday and yet here it is September and another sports season has begun.

The 20th Annual Meeting held in June was not only the largest but also one of the best from the standpoint of business accomplished. The business of the Convention has been discussed in your Secretary's Report as well as in an article in the issue of the Journal.

There are several other items I would like to discuss in this column. The first of these items results from the series of articles on "Drugs in Sports" in a national sports magazine which appeared in June and July. The articles although well authenticated included some very damaging statements in regard to the work of athletic trainers. Again, as the same magazine did in their articles on "Racism in Sports" the authors brought together a great many unrelated incidents and ambiguous statements. The articles made a great many points and discussed a variety of remedies for the drug abuses prevalent in sports, but made no specific recommendations. Actually the articles ended with a feeling of "Oh, well, it will go on anyway so to heck with the whole mess".

In bringing some of the information to the public's attention the magazine performed a public service, but in oversensationalizing it also did the sports medicine field a real disservice. It is up to each of us to stand tall and maintain our integrity in the face of this type of journalism. As athletic trainers we have come so far in establishing ourselves as a profession, that we must do all we can to overcome this type of adverse publicity. We can do this best by working at our job of providing the best conditioning, treatment and rehabilitation programs for the young men we have in our charge.

The second item I would like to discuss results from a letter received early in the summer from one of the Active members of the Association. This particular athletic trainer, a member of the Hall of Fame, offered some extremely fine suggestions, for consideration, in regards to the Annual Convention and the Journal. Your Executive Secretary was so impressed and excited about these ideas that he called the writer that day and discussed the letter at some length. This is the exact sort of thing that we have requested for the past year and a half. It is only through *your* suggestions, ideas, and recommendations that we can hope to improve the Association. Please let us know your ideas, share your thoughts, they might be exactly what the Association needs to improve itself.

LIBRARY SUBSCRIPTIONS

The third point is another reminder about school library subscriptions to the Journal. As I pointed out earlier in the summer almost all school libraries will gladly subscribe to any periodical that a teacher recommends for use in his classes. We can do our Association a great deal of good by getting a larger library subscription list, thus making our Journal available to many more persons. If you haven't approached your school library people yet, please do so. It will help your Association.

Best wishes to all in this 1969 Football Season.

CONVENTION EXHIBITORS

The following firms held exhibit space at the recent convention in Cincinnati. All will be happy to provide additional information about their services or products. Contact them directly, or through their local representative. If you need help in reaching any of these firms write to the Journal at 600 South Michigan Ave., Chicago, Ill. 60605.

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Burroughs Wellcome Co.
Champion Products, Inc.
Chattanooga Pharmacal Co.
Coca-Cola Company
Cole Pharmacal Co.
Conco Surgical Products
Cramer Chemical Co.
Dia Pulse Corp.
The Drackett Products Co.
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HEAT and ANTIHISTAMINES

(Continued from Page 19)

fluids. Within a few minutes of arriving at the intensive care unit and being treated with the ice blanket, his temperature went down to 101° and was maintained there for an hour and then gradually went down to normal.

He gradually regained consciousness over the next twelve hours and was discharged after eight days on August 31, 1968. His blood and electrolyte levels, electrocardiogram, and basal metabolism had returned to normal.

It is of interest that the boy did not present the typical symptoms of heat stroke until he arrived at the hospital. While in the training room, his temperature did not seen to be abnormal. Vomiting made it impossible to obtain his temperature in the training room.

It should be noted that this boy has a history of mild hay fever and on the day of practice, before breakfast, he took two chlor-trimeton repitabs (8 mg each). This drug is a fairly powerful antihistamine and the doctors here feel that this group of drugs may have the effect of making people more susceptible to heat stroke by suppressing the body's sweating mechanism. The temperature on that day was about 90° and the humidity was close to 100%. It should be further noted this boy came back to Richmond after the summer vacation in excellent physical condition. We feel that the antihistamine was the major contributing factor to his illness.

We present this paper in order that other trainers may be alert to players who suffer allergies. We would suggest that antihistamines be withheld before practice or that the medication be closely checked by the team physician before the boy is allowed to practice while taking it.

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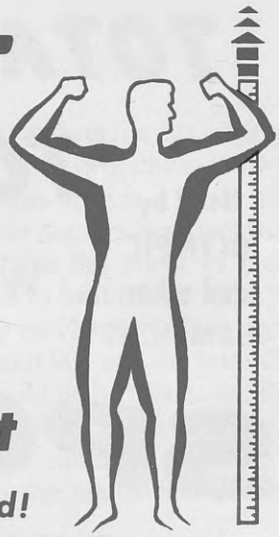

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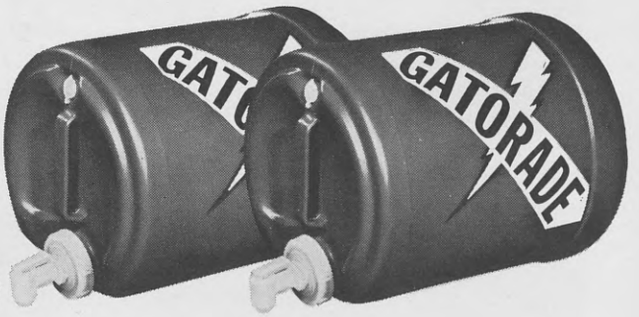

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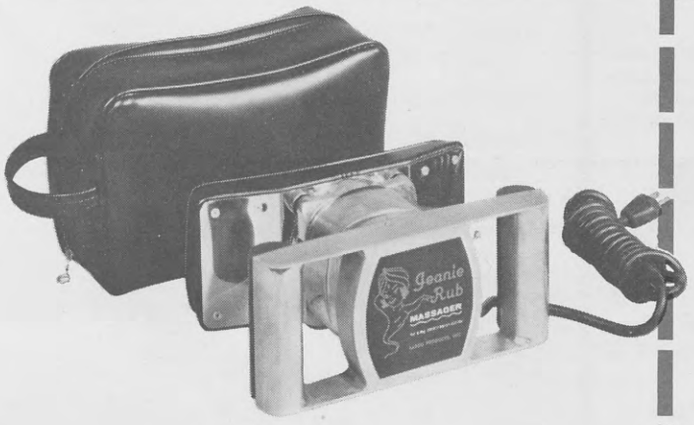

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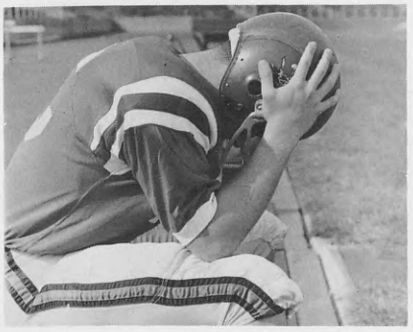

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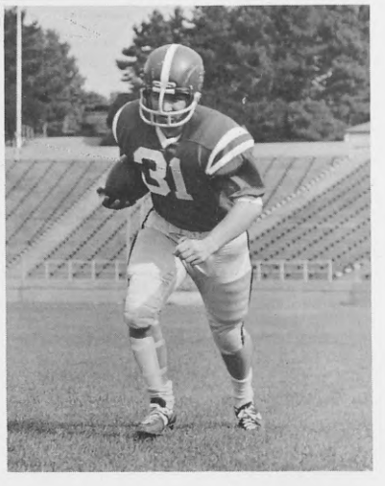

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