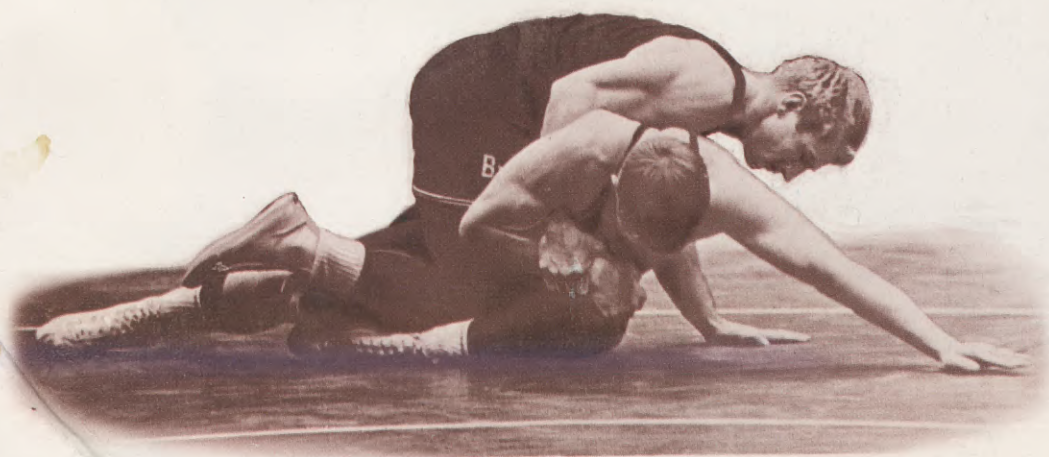


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of the National Athletic Trainers Association

SUMMER 1968

Volume 3

Number 2



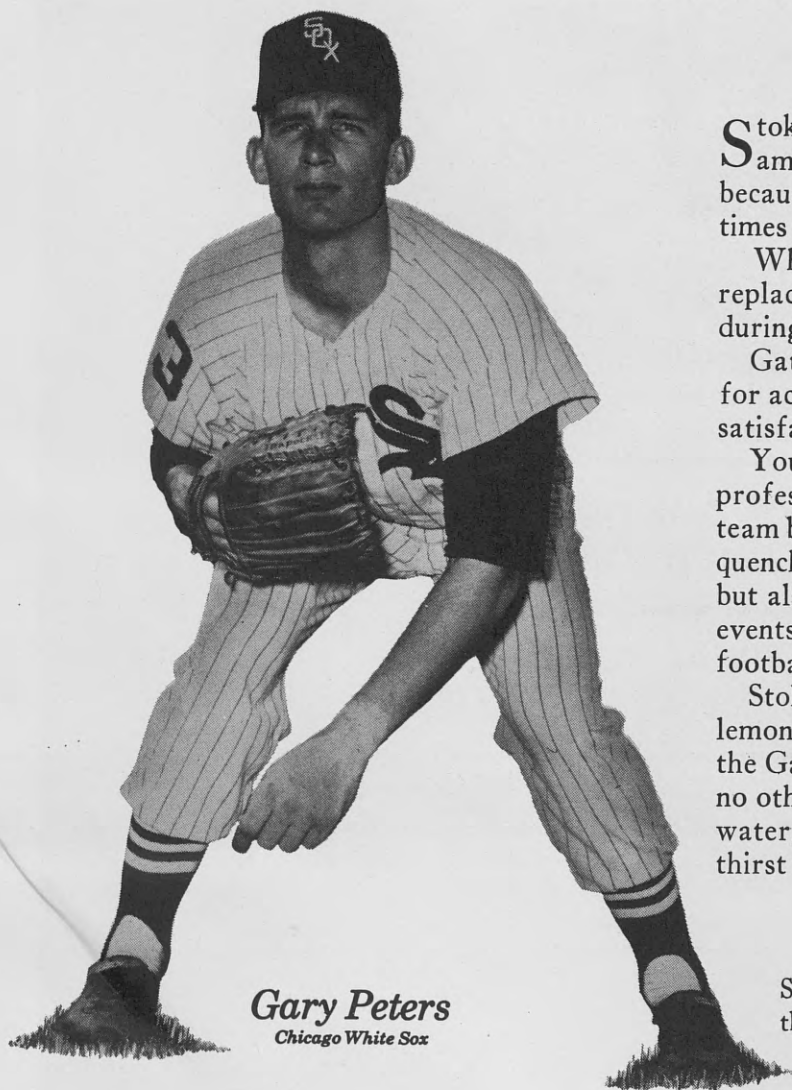
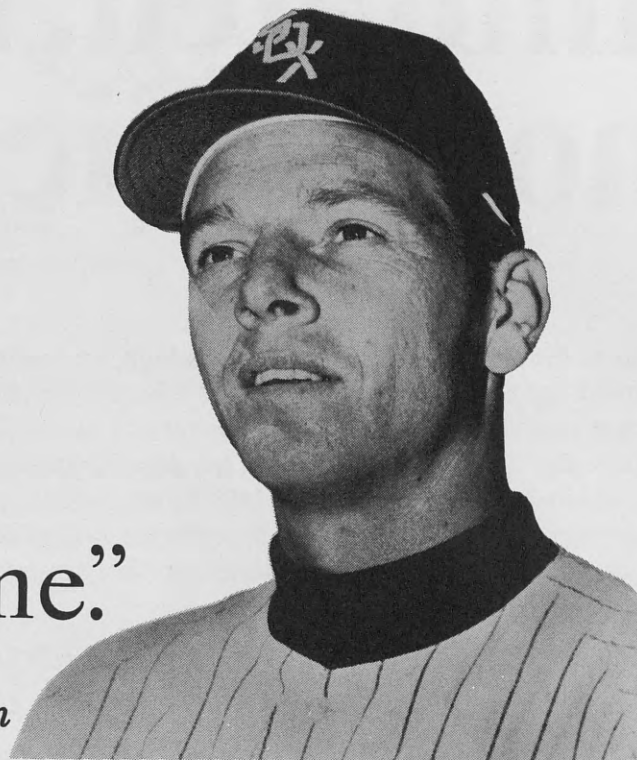


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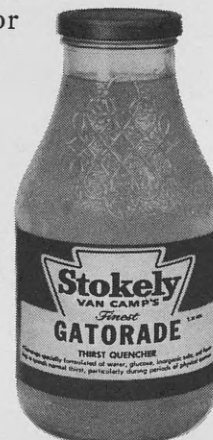
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of the *National Athletic Trainers Association*

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Volume Three, Number Two

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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 pub-

lished works, include superscript numerals and appropriate footnotes giving author, title of book or article, periodical or volume number, pages, and date of publication.

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.

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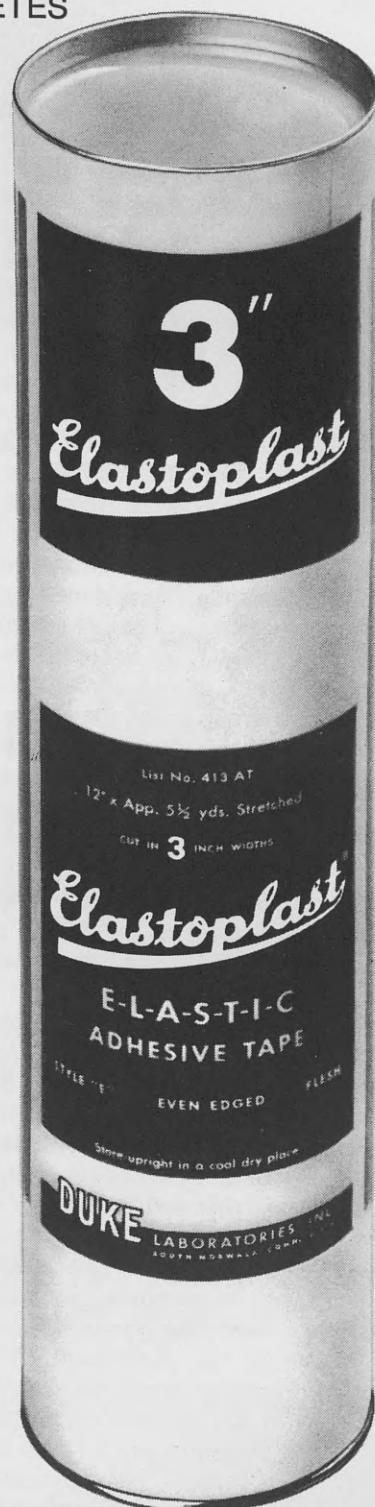
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Weight Loss in Wrestling

Carl Blyth

University of North Carolina
Chapel Hill, No. Car.

In any discussion or study of athletic injuries and safety in sports a recurring and persistent questioning of crash dieting arises. Crash diets are designed to produce rapid and extreme weight loss in athletes who then participate or compete in a lower weight class which their coaches feel will give them an advantage in competition. Thus unnatural means of losing weight is generally accomplished by either a severe restriction of food or water or a combination of the two. Dehydration is accomplished by exercise, the restriction of fluid intake, use of whirlpool, hot rooms and steam baths.

The practice of crash dieting has been condemned by the American Medical Association, The National Federation of State High School Athletic Associations,¹ school administrators, parents, trainers,² and the majority of coaches in the wrestling profession. Many of the opponents of crash dieting state that wrestling is one of the few sports activities where the athlete can be injured physically and mentally without practicing or participating in the sport. This statement in itself is a condemnation of a practice that demands so much of an athlete.

The proponents of crash dieting who are associated with wrestling cloud the issue by stating the values inherent in wrestling. They further state that crash dieting is overemphasized as a problem related to wrestling. They contend that there is no proof that any real harm is done because of crash dieting and that the evils of crash dieting are unproved.

Wrestling has tremendous potential in developing both the physical and mental health of the participant. We believe that wrestling programs should be expanded in our colleges and high schools where programs are already in existence. And further, we advocate that wrestling programs be instituted

and encouraged in schools where wrestling is non-existent. If wrestling is to receive and benefit from its tremendous potential, the stigma attached to it by crash dieting must be eliminated. Many plans have been suggested to reduce or eliminate the practice of crash dieting. For further information on this point we refer the interested reader to the article by Vernon Ekfelt in the December, 1956, issue of the *Athletic Journal*.

The philosophy of crash dieting or the "pulling of weight" has been arrived at by empiricism and practice and has no sound physiological basis. On the other hand, the dangers involved in crash dieting are well documented in the medical and research literature. Specific cases of disability that occur in the athlete as a result of crash dieting are not as easy to document. To overcome this limitation we corresponded with physicians who had actually treated injuries of this type. The physicians sent us complete case reports of athletes they treated for injuries resulting from crash dieting. In almost every instance they urged us to continue our investigation of this problem.

One of the most severe and disabling physical disturbances associated with crash dieting is acute pancreatitis. An outstanding example of this is a case study reported by McDermott¹⁰ in the *New England Journal of Medicine*. A young man 18 years of age returned to school after the Christmas holidays weighing 133 pounds. The aspiring wrestler wished to wrestle in the 123-pound class. After 12 days of severely restricting his fluid and food intake he weighed in at 123 pounds. Thirty minutes after excessive realimentation the young man was stricken with severe abdominal pain. Thirty hours later the young man was admitted to the hospi-

tal with a diagnosis of acute pancreatitis. This disorder required 10 days of medical and hospital treatment.

Another case¹⁶ involved a wrestler visiting the University of Oklahoma for a wrestling tournament. This visiting wrestler attempted to lose 17 pounds in 10 days in order to make the 115-pound weight classification. His diet during the period of severe weight loss consisted of black coffee and orange juice. He fainted prior to his match and was admitted to the hospital confused and semicomatose. The diagnosis upon admittance was exhaustion and dehydration.

A final example of what can happen as a result of crash dieting is demonstrated by a case study of a young boy taken from the files of the attending physician.¹¹ A 14-year-old boy dieted severely for 6 weeks, dropping from 152 pounds to 126 pounds. Although he was urged to discontinue his fasting, he flatly refused to do so saying the coach wanted him down to 123 pounds. An analysis of the boy's diet by the hospital dietician revealed that he was subsisting on 800cc of water and 490 calories per day, the diet recommended by his coach. The boy was hospitalized for two weeks and was completely incapacitated for two more weeks at his home. His diagnosis upon hospital admittance was related to kidney dysfunction.

The actual case histories presented point out the dangers that occur to the human organism when food and water intake are severely restricted. The professional literature specifically recommends that weight loss by reduced caloric intake should not exceed two to three pounds per week.^{3,13} All authorities agree that weight reduction programs should be done under the supervision of a physician. Fasting more than one day upsets the internal chem-

ical balance which results in deterioration in function and possible permanent damage.

In the medical and research literature it is reported that there is a deterioration of endurance¹⁵ and ability to perform physical work in acute and semi-starvation states. It has been shown that poor tolerance for exhausting work and an impairment of speed and coordination occurs when young men are deprived of food in the presence of adequate water supplies.⁷ Riedman¹⁵ states that a 2.5 per cent body water deficit will result in a 25 per cent reduction in work output.

Other adverse effects associated with acute and semistarvation or crash dieting are: hypoglycemia,⁹⁻¹⁹ ketosis,⁴⁻⁶ a reduction in maximal oxygen intake, reduction in cardiovascular efficiency,³ liver damage,¹⁷ and increased susceptibility to infection. The capacity for anaerobic work is reduced along with a loss of physical fitness.⁷

When acute and semistarvation states are accompanied by dehydration, there is a reduction in blood volume, cardiac output and velocity of blood flow.¹² There is also evidence that a water shortage is harmful to the kidneys.¹¹⁻¹⁴⁻¹⁸ rapid water loss is responsible for mental confusion, vomiting, unsteady gait, and a general incapacity for work among those practicing rapid weight loss by limiting the water intake.⁸

The deleterious effects of crash dieting have been substantiated by the studies reported in the medical and research literature and by actual case histories from the medical files of physicians who have treated many of these athletes. Research shows that there should be no question of the advisability of preventing crash dieting among our athletes.

In view of this evidence it is recommended that the athletic, medical, and

trainer's associations take positive action to prohibit the practice of crash dieting. It is recommended that coaches develop means of implementing this recommendation so that many of the dangers and much of the criticism centered around collegiate and high school wrestling can be eliminated.

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An Abstract of the Effect of Weight Loss on Strength of College Wrestlers

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In modern amateur wrestling the factor of control of weight has become extremely important to both coaches and participants. Experience has established some very reliable methods through which weight can be lost by wrestlers but much less is known about the possible effects severe weight loss may have on the health, strength, and physiologic responses of the wrestlers.

PURPOSE

The purpose of this study is to investigate the effect of weight loss on the strength of college wrestlers over the duration of a season of wrestling competition.

It was hypothesized that the loss of weight occurring between the beginning of training and the beginning of the competitive season would be accompanied by a corresponding loss of strength. It was further hypothesized that by the end of the competitive season some of the lost strength would have been regained.

REVIEW OF LITERATURE

All the studies reviewed were concerned with the immediate effect of the loss of weight on various physiologic responses including strength and, thus, covered only a short period of time. There are a number of studies which show there are no harmful effects from weight loss up to a certain percentage of weight.

Edwards (4) found no significant changes in the strength of wrestlers who lost a mean of 6.37 per cent of their body weight during a seven day

period, while Englund (6) found that a 4.41 mean percentage loss of body weight would not effect the physical efficiency of wrestlers.

In their studies, Doscher, Nichols, and Taylor, (3,9,13) also reported that a certain percentage of weight could be lost without materially affecting the strength of the wrestlers.

Two other studies also indicate that a wrestler may safely lose a certain percentage of his weight without adversely affecting strength (14,15).

Andrews (1) reports that weight loss did not materially affect the strength of those who lost weight through the use of a reduced caloric intake diet, based on a commercially produced liquid diet.

In summary, a review of the literature indicates that strength apparently is not materially affected by the loss of weight when the loss does not exceed approximately 10 per cent. The review, however, revealed no studies of the effect of weight loss prolonged over a period of several months on the strength of wrestlers. All studies were concerned with the immediate effect of the loss of weight on various physiologic responses including strength and, thus, covered only a short period of time. It is felt, therefore, that a study of the effect of weight loss on strength over the period of an entire wrestling season was warranted.

METHODOLOGY

The subjects for the study were 11 members of the varsity and freshmen wrestling teams at the University of Missouri during the school year 1966-

67. Initially, 20 varsity and freshmen squad members were included but through injury and ineligibility only 11 remained at the third and final measurement.

During the duration of this study the weight and strength were recorded three different times. The first measurement was made one week after the wrestlers started their unsupervised practices. An unsupervised practice consisted of one in which the coach was not present and the wrestlers practiced by themselves and involved mainly conditioning exercises and running. The second measurement was made after the third wrestling match of the season and the third and final measurement was made the day before the final match of the season.

At each administration of the strength tests the subjects were given three trials of each strength test with the highest being recorded. To represent the wrestlers strength, four areas of the body were measured neck, legs, shoulders, and hands. The extension strength of the neck and the extension strength of the legs were measured. The strength of the shoulders was ascertained by a combination of pushing and pulling strength and a grip dynamometer was utilized to test hand strength. There were no special training procedures used and the experiment had a duration of six months.

ANALYSIS

The technique of analysis of variance was applied to the tabulated data. It revealed a significant loss of weight, at the five per cent level of confidence,

between the beginning and the end of the season. However, there was no significant loss of strength, as measured by any of the four strength tests, between any of the testing periods.

CONCLUSIONS

It can be concluded that the weight loss, which was sustained for the prolonged period of the season, had no effect upon the strength of the wrestlers. It can also be concluded that this weight loss may be up to 11.3 per cent of total body weight without affecting strength.

RECOMMENDATIONS

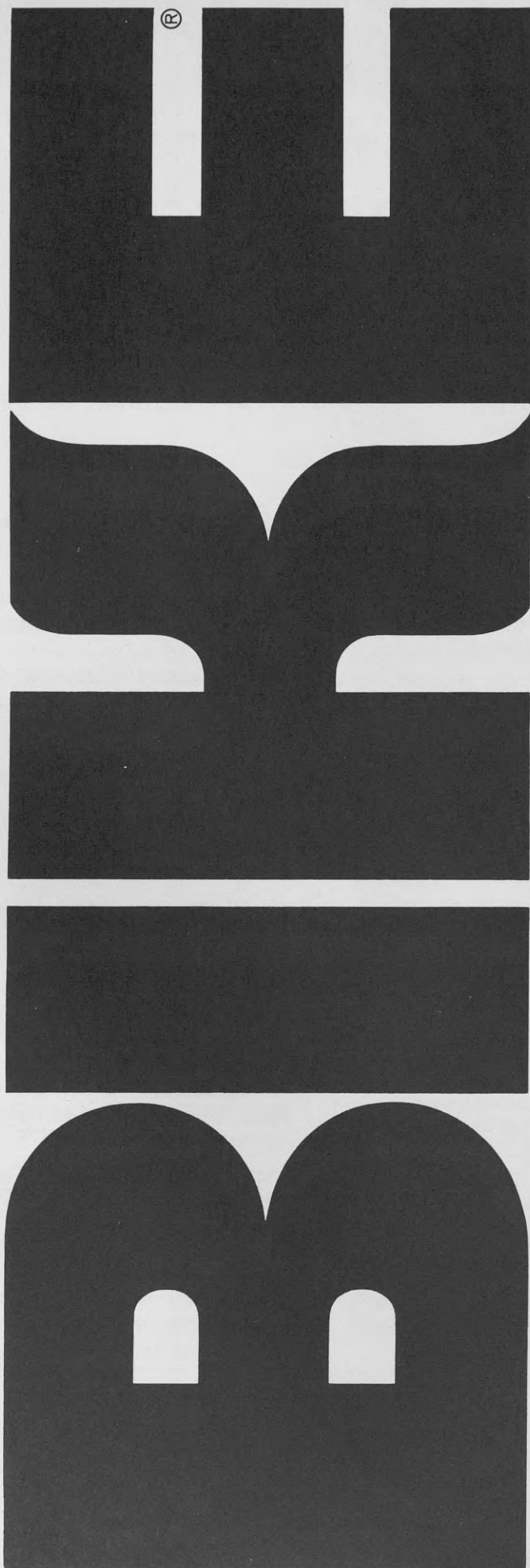
It is recommended that a study of this nature be done using a control group. The control group would participate in the regular practice sessions and meets but would attempt to maintain their normal weight. The experimental group would participate in the regular practice sessions but would reduce their weight to wrestle in predetermined weight classes. The purpose of this study would be to determine whether or not there was a significant difference in the strengths of the two groups.

Another possible study would be one dealing with weight training and the effects it would have on weight loss and how it affects strength. Two groups would be utilized for this study. One group would lift weights as well as participate in the regular practice sessions set up by the coach. The other group would participate in the regular

practice sessions. Each group would reduce their weight to wrestle in meets and the objective of this study would be to determine whether or not the weight training was of any help to the wrestlers in regard to strength.

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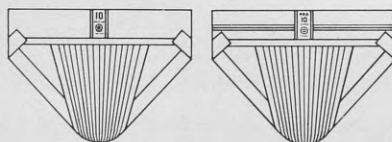




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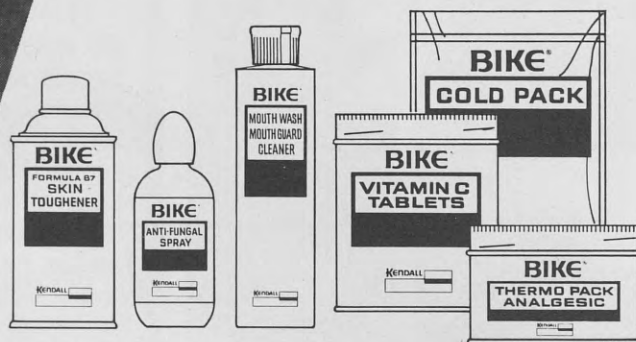
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The Cauliflower Ear

Steve Povalac
Oklahoma University

GENERAL:

One of the "marks" of a wrestler is a deformed ear commonly known as cauliflower ear. The technical name for the cauliflower ear is hematoma auris, but very few wrestlers know this term.¹ There is no logical reason for any boy getting a cauliflower ear, since protective ear guards are available. The coach and trainer should try to encourage the young wrestler to wear ear guards in practice as well as in the matches. The cauliflower ear can be very painful, and also very disfiguring if not properly treated. The cauliflower ear is caused by extreme wrenching of the ears in the tied-up position. Hard blows to the ears or continued friction

are leading causes also. An improperly fitting headgear may also lead to the deformity.

WHAT TO LOOK FOR:

When a specific area of the outer ear becomes very sore, it is a warning signal of things to come. If protective measures are not taken at this point the ear will fill up with fluid and puff-up. The cauliflower ear will take on a blue-black tint, swell up like a balloon, and become very sensitive. During this process there is a tearing away of the overlying tissue of the ear from the inner cartilage. The result of this tearing is internal bleeding and fluid ac-

cumulation. The fluid accumulation pushes the skin outward from the cartilage and causes the deformity.

Areas of the body, such as the ears, have very limited circulation. Since there is little active circulation in the ear, absorption of this accumulated fluid is very difficult. If the fluid is left alone in this state, it will coagulate and become very hard. The result of this hardening is termed keloid.²

The keloid appears elevated, rounded, white, nodular, and very firm, resembling a cauliflower. The cauliflower usually forms around the rim of the ear, but it may develop in other areas depending on the direct cause.

PREVENTION:

The best possible means of preventing a cauliflower ear is to wear protective ear guards. Ear guards are light in weight, and they in no way impede the wrestler. The application of vaseline, or other such grease-like materials, will reduce the friction to the ears. When the warning sign appears and the ear develops a sore or "hot" spot, apply ice. The ice will prevent hemorrhage in the hot area of the ear. Early ice treatment with pressure over a small swelling, may prevent hematoma auris.

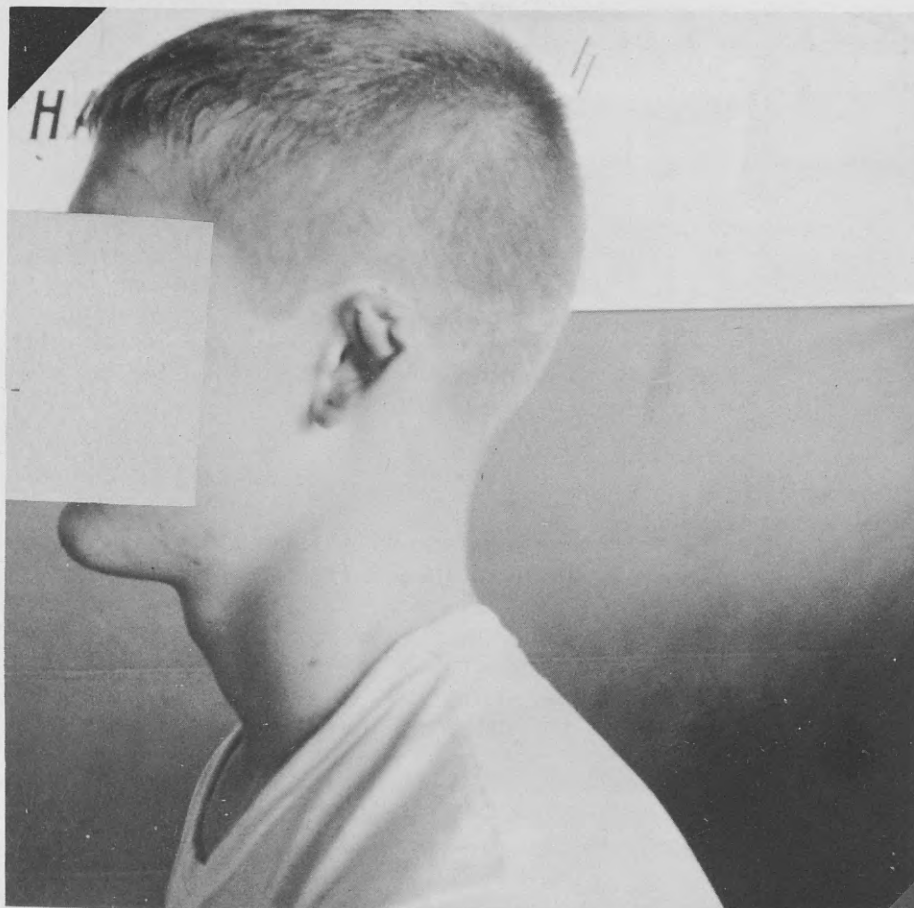
TREATMENT:

The team physician should aspirate the fluid from the ear with a sterile hypodermic needle. Once the fluid is removed, pressure should be applied to the ear using a sterile piece of cotton and an ice pack. This should be done for approximately 15 minutes.

For constant, long lasting pressure on the ear, a cast of collodion and gauze is applied. A 4" square of 1/4" felt is applied along the outside of the ear to help stabilize the cast.

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contour of the ear. Dry cotton is now applied over the collodion pack to fill the remaining space.

A narrow elastic bandage is now wrapped around the ear and head. Leave the collodion pack on at least 3 days for best results. The procedure must be repeated if refilling of the ear occurs.

The team physician may prescribe oral-enzymes to reduce the swelling and aid in reabsorption.

Surgery is the only treatment possible once the ear has hardened into the keloid state.

SUGGESTIONS:

Stress the importance of wearing properly fitting headgear to the high school wrestler. The collegiate wrestler should have enough common sense to make his own decision.

When you have an athletic injury, such as the cauliflower ear, go to a competent professional athletic trainer or athletic team physician first. Many very fine family physicians have never seen a cauliflower ear, and have too much "pride" to admit they don't know how to treat one. Do not permit a doctor to lance the ear and insert a drain! This is great for a boil or a carbuncle, but it will only increase the deformity and pain of the cauliflower ear.

Unless mat type practice is urgent, do not practice the day after aspiration. The boy can still run and do an increased amount of calisthenics.

PROTECTIVE MATERIAL:

Headgear

- Sashara "cloth" type.
- Cliff Keen Adjustable type.
- Hard plastic and elastic form "fitting type".

Vaseline Petroleum Jelly

Collodion Pack

A pack similar to the one described previously; may be applied by the trainer prior to a complete puffing of the ear. This is an extension of the ice and pressure treatment, and MUST NOT include aspiration of fluids.

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BITS AND PIECES

Clyde Stretch

A question has been brought forth which would seem to merit some consideration by the members of our organization. We have been plagued by a condition or conditions and a term which has served as a convenient wastebasket for these conditions. Shin splints, by no means new to the fields of athletic training and sports medicine, has been a term which manages to carry with it an aura of confusion.

The *Standard Nomenclature of Athletic Injuries* took a hasty retreat from the term by giving its general location, probable causes and attempting to limit the pathology which might be included in this term. It emphasized the "wastebasket" quality of the term by including it in the glossary rather than within the text of the book.

The term shin splints does not describe a unique pathological condition, or does it? Does the confusion associated with the word lie in the mechanics, the anatomy or the pathology of the condition? Is it merely a crutch to avoid differential diagnosis? Does the term belong in a sports vocabulary, or should efforts be made to eliminate it? Could this be a term that deprofessionalizes the athletic trainer?

Shin splints have been with us long enough to provide some very definite opinions. Hopefully, these opinions, when collected, might provide some answers to the perennial shin splints dilemma. If you have an opinion, let's hear it.

* * *

Instructional Course Lectures of the American Academy of Orthopedic Surgeons appeared in the form of a "Symposium on Treatment of Injuries to the Shoulder Girdle," in the June, 1967 (Vol. 49, No. 4) issue of *The Journal of Bone and Joint Surgery*. Of particular interest is the article "Nerve Injuries About the Shoulder in Sports," by Dr. James E. Bateman, Surgeon-in-Chief, Orthopedic and Arthritic Hospital, Toronto, Ontario, Canada. Cop-

ies of the entire symposium are available for \$3.00 from *The Journal of Bone and Joint Surgery*, 10 Shattuck St., Boston, Mass. 02115.

* * *

Some excerpts from a report by Gordon Graham on the NCAA College Wrestling Championships held at Mankato State College: "Many of the injuries seen in the training room were recurrent in nature and existed prior to the tournament competition. Aside from numerous nosebleeds, the two cauliflower ears drained, and the two recurrent eye infections, 40 injuries occurred in the 377 matches. Seven wrestlers were placed on crutches, and two of these wrestlers had casts applied." Recommendation: "Require physical examinations of all wrestlers from their own team physicians prior to participation in a national tournament. Some of the participants should not have competed in this tournament with the conditions that existed prior to their coming to this tournament."

* * *

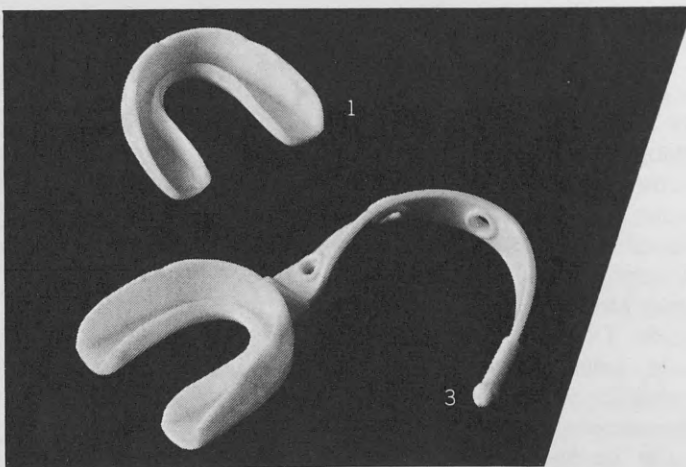
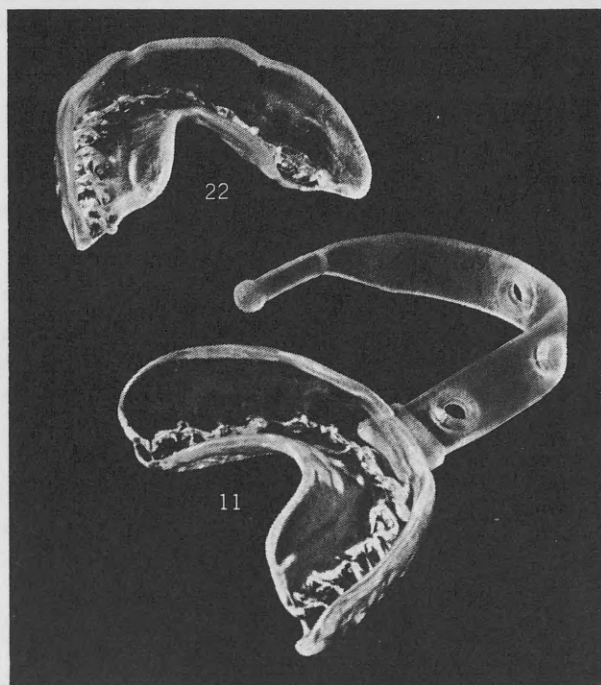
Mr. Clinton Thompson, who did an outstanding job in preparing the index for volume one of the Journal, has asked that it be announced that the January, 1957; the Winter, 1960; and the Fall, 1961 issues were regrettably omitted from the index.

* * *

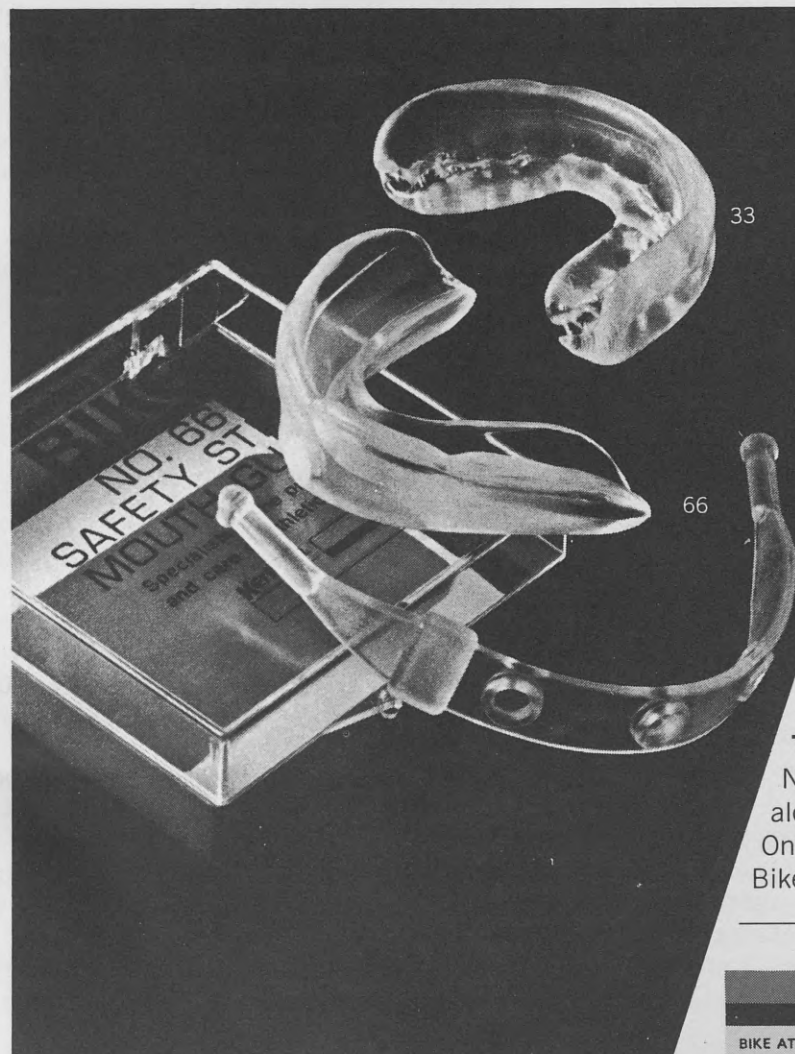
The column in the previous issue made an attempt to announce job openings. That one attempt made it quite evident that the time span necessary between the assembling of material for the Journal and its availability to the membership makes such announcements quite impractical. Should situations change to allow a service of this nature, it will again be attempted.

Congratulations to Jim Morris of Butler University on his receipt of the 1968 Eckrich Silver Medal Award. The award was presented to Jim at the

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Our congratulations to John Johnson, trainer for the NFL New York Giants and Manhattan College, who was recently honored by more than 250 former Manhattan College athletes and friends. The banquet was in celebration of John's twentieth year as varsity athletic trainer for the college.

Representatives from the New York Giants, the Catholic School Athletic Association and several public high schools, as well as most of the major metropolitan colleges joined in the occasion.

* * *

Excerpt from a talk on "Problems of the Foot in Athletics," by Dr. A. A. Savastano: "The most common neuroma which occurs in the foot is that which is known as Morton's toe. The person will complain of pain on the fore part of the foot particularly when bearing weight. The most common site is between the third and fourth metatarsal heads, but it may occur almost anywhere else. Treatment may be conservative or surgical. In the conservative treatment one may try to shift the weight by using metatarsal bars or metatarsal pads; and if this does not prove of value, surgical excision of the neuroma may become necessary."

* * *

New product: "Intermittent Compression Unit," by Jobst, Box 653, Toledo, Ohio 43601. It is supposed to be useful for reducing edema in the extremities. Further information is available from the company.

* * *

CALENDAR

1) The Seventh Post-Graduate Conference on Medical Aspects of Sports will meet on August 15, 16 at the University of Rhode Island, Kingston, Rhode Island. For information or arrangements contact A. A. Savastano, M.D., 205 Waterman St., Providence, Rhode Island 02906.

2) The Second Post-Graduate Course on Sports Medicine will be presented by the Sports Committee of the American Academy of Orthopedic Surgeons,

meeting in Oklahoma City, Oklahoma at the Skirvin Hotel, July 29, 30, 31. Emphasis of the course will be on the lower extremities. Arrangements and details may be obtained by writing the O'Donoghue Orthopedic Clinic, Pasteur Medical Building, Oklahoma City, Oklahoma 73103.

3) The First Annual North American Trainers School of Techniques will meet June 29, 30, 31 in Sarnia, Ontario. There is a \$75 fee. Further information may be obtained by writing: 1708 N. Vermont, Oklahoma City, Oklahoma 73107.

4) The New York State Osteopathic Society will sponsor an Athletic Injuries Clinic on August 24 at The Albany Academy, Albany, New York. For a copy of the program content, contact Dr. E. Wayne Harbinger, The Albany Academy, 87 S. Lake Ave., Albany, New York 12203.

5) The Michigan Osteopathic Association will present a sports medicine seminar on August 11, 1968. The seminar will be located at the Statler Hilton Hotel, Detroit, Michigan. Further details may be obtained by writing to the Michigan Osteopathic Association, 3310 Freedom Rd., Farmington, Michigan 48024.

6) Southeastern State College of Durant, Oklahoma, will hold an Athletic Injuries Workshop, June 17-21. Graduate or undergraduate credit: 1 hour. Lecturers include Ken Rawlinson, Oklahoma University; Charles Martin, Northeast Louisiana State College; and Dr. Don H. O'Donoghue. For information contact: Dr. Don Parham, Physical Education Dept., Southeastern State College, Durant, Oklahoma 74701.

7) *Medicine and Sports*, Postgraduate Program, May 17-18, 1968. For information contact, Director of Continuation Education, Albert B. Chandler, Medical Center Annex, Lexington, Kentucky 40506.

Send any suggestions, comments, opinions or information to: Clyde Stretch, 150 Jenison Fieldhouse, Michigan State University, East Lansing, Michigan 48823.

Recent Athletic Training Literature

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

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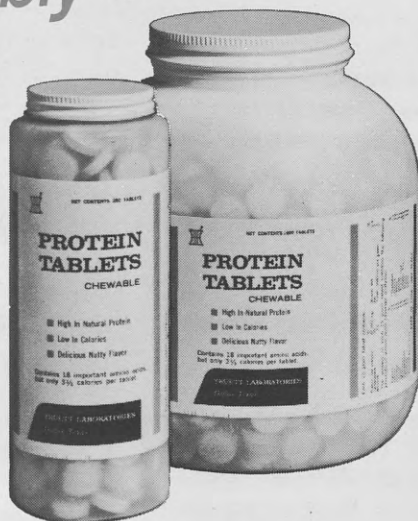


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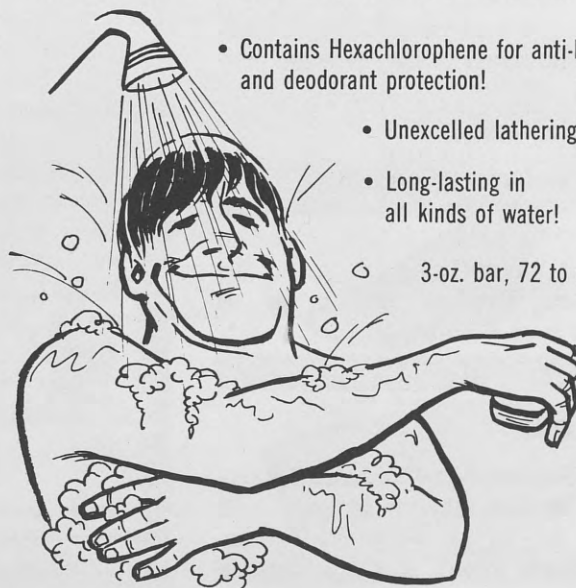
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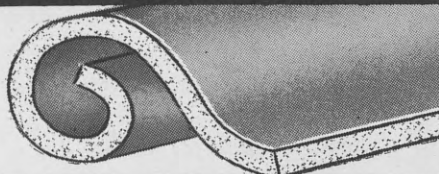
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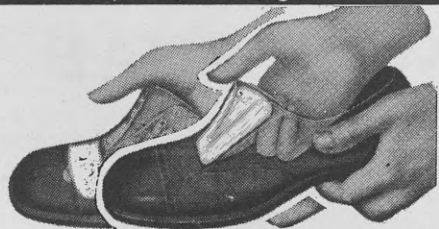
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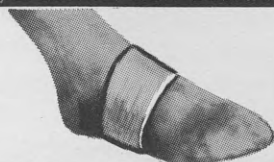
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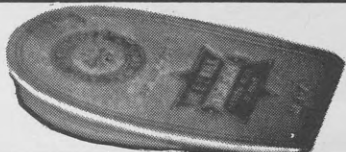
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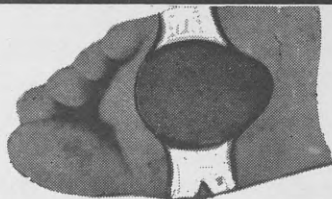
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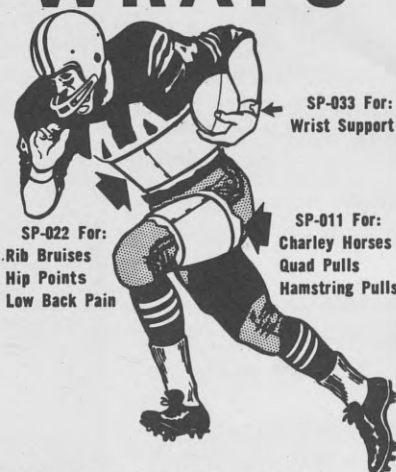
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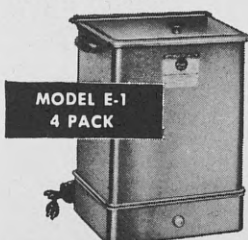
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