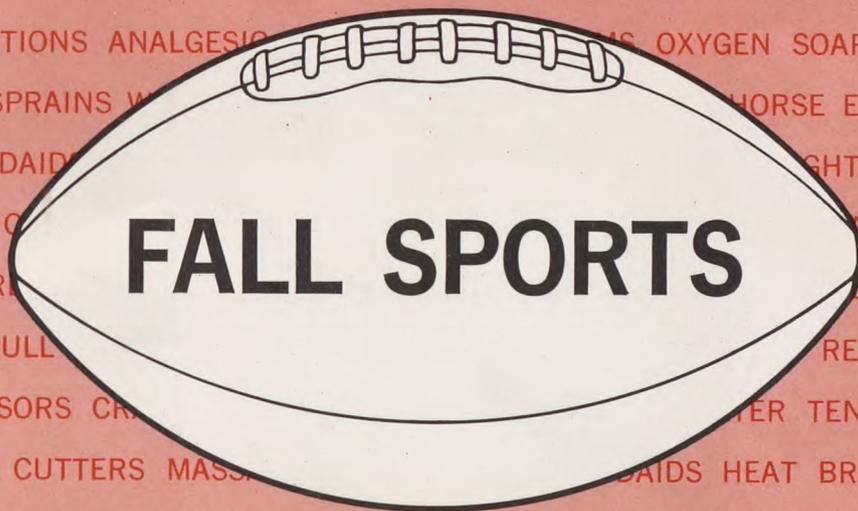


THE JOURNAL

of the National Athletic Trainers Association

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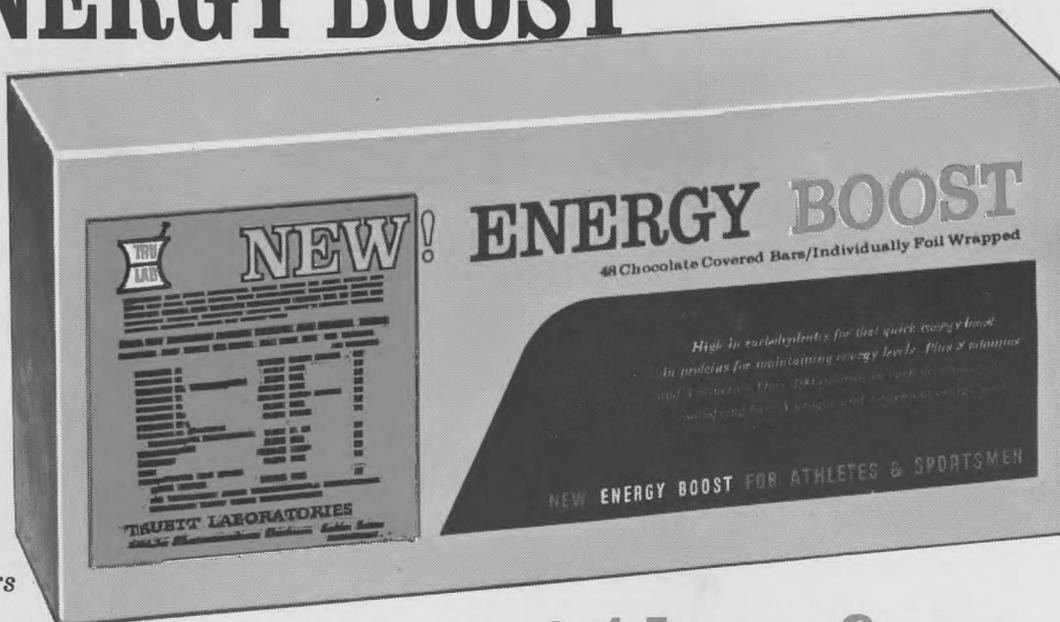
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2. When references are made to other published works, include superscript numerals and appropriate footnotes giving author, title

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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.

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A Critical Appraisal of the Use of Ergogenic Aids by Athletes and Their Idiosyncrasies

James A. Nicholas, M.D.

Cornell Medical School,
Associate Professor of Orthopedic Surgery,
Team Physician, The New York Jets

Address to NATA Meeting, June 10, 1967

If one is to understand the physical problems of the athlete he must, of course, be aware of many other factors which comprise the total personality of the athlete and team. The athlete must be understood in some way in terms of his anxieties and idiosyncrasies. I would like to submit observations, my experiences with teams and the cast of characters which make up the team personalities, for to some extent in the course, for example of the football season, in the long training camp with its two-a-day workout, grunting, groaning, slaving, attempts at weight loss, and survival to the bitter end with its broken ribs and broken bodies, the idiosyncrasies of every team member, trainer and physician included, must play some role in the outcome of the season's battles. At the risk of offending some who might see in what I say a glimpse of familiar traits of human character of which we are all victims, I apologize. No identification with any individual is intended or implied.

The cast of characters can be classified into a number of groups including the other teams, the "establishment" such as the alumni, the university or owners, the coaches, the players, and the medical aids, right down to the equipment man.

THE ESTABLISHMENT IN SPORTS

The "establishment" aims to do one thing: Win. Winning is almost ingeniously conceived and quickly accomplished ever so early, rallying, in some instances, around quarterbacks such as the likes of a Unitas. But deny them such a leader and it is amazing to see the frailties of man come to the surface, so the idiosyncrasies become overwhelmingly manifest, especially when one has lost. At the very outset, the university leaders are analogous to the owners in pro football and are the governing bodies. The beloved field officials constitute the enemy. They serve in some ways to act as the nidus of each exposé of the team's frailties and defeat. They then, therefore, are the leaders, the royal guard, who enforce the rules of procedure. Suffice it to say the "Front Office" responds to only three calls: namely, fans, TV

and gate appeal, and winning. The "establishment", for example, in the Alumni often represents men who are most successful at winning. With few exceptions, they have been able through know-how and knowledge of capital gains and knowledge of the public pulse to amass fortunes and prestige which in turn bring more recruitment for more strength. As such, they are beyond reproach. They are the peers, the judges and jury, and they can convince the best high school athletes that many people depend on these boys going to *the* school. Club owners and "ruling" alumni are not easily characterized somehow. Some are old grads; some have been pseudo-athletes in their time; others have the love for the fine vintages of life; and still others must win in everything they touch. They are certainly a financial success, and they must not lose either the fans, the TV revenue, ratings, gates, and especially the games. However, they can create pressures on teams, coaches, and players which are most difficult to adjust to.

The coaches are a rather proud group with a traditional character of their own. They have all gone through their schools, starting as players, some with mediocre talent, some as stars. Some served internships and residencies as assistant coaches and finally evolved to the position of head coach. If ever the word "grizzled" had any meaning it was exemplified by the head coach. He is tough, fair, believes that he is right, is a master technician and often serves a dual role as a general manager. Even if he didn't get an A in freshman English, he is able to get out of the language the most amazing and inspiring passages during the intimate pre-game and half-time talks that I've ever heard. Such individuals do not sometimes comprehend that they really are two personalities during the season. During the game when they are bombarded by the upstairs geniuses, the assistant coaches, as well as the alibiing players, and are harassed by the misadventures of the battle plans, and by the minutest misrepresentations of field decisions, they often draw a blank. After the combat these individuals

change to their second face. For the rest of the week or until the next combat the head coach reveals himself to be a master at looking at the pictures and record books, at time trials, formulating strategy, calmly, gently, sometimes bombastically and certainly methodically, unbothered by any hurt or any mistakes the players themselves make or the referees have made except to point them out and to teach the art.

The assistant coaches represent a melange of climbing bodies and intellects all straining with ambition. They are young in age, deep in the acquisition of knowledge and enthusiastically fighting for the recognition which brings them to the title of head coach somewhere else. Because of this, irregular bowel habits, chain smoking, caffeine intoxication, and tranquilizers are often part and parcel of their existence. For this reason they are very critical of mistakes and quick to judge. Although bright in tactics and rich in desire, they do not mature for quite a while in the game, until exposure to all idiosyncrasies of the "establishment" provide them with all the necessary battle experience for success. They have the job of recruitment and are characterized by the freshness of college mores, boldness of thought, and are very skilled at rating technical abilities to the fraction of a second, but they are not battle tested enough for head coaches' jobs. They analyze the weaknesses upon which the game plan proceeds and feed the poor head coach the information by which he, the "computer" of the team, modifies the gameplan and tempers such advice from his instinctive long-term experience.

Speaking of execution, this brings us down to the central cast of characters: the trainers and the players themselves. Trainers are remarkably resilient, buffeted on both sides by pressures, information, demands to get players ready, yet they are the most patient souls I have ever met. They are the father confessors of their team, aware of some of the most intimate information thereby showing remarkable ethics and conscience. From my association with individuals such as Jack Copeland and Jeff Snedeker of the Jets, I have come to realize they are the most important cogs in the team year in and year out, and they are the most appreciated. Trainers are simply not regarded in the light they should be because the population doesn't know. They work in silence behind the scenes with no glamorous bonuses or headlines, remarkably little stipend for what they do, and the most precious commodities are their hands. For that reason, they bear great responsibility and must use careful judgment and honor and conscience so that our athletes do not fall prey to the easy way, the quick way, and the "gimmick" which is so much a part of our present-day society. I think it requires constant homework which is why we are all here today.

TYPES OF ATHLETES

Finally, what about the athlete? If you look at athletes as they come up to a training camp or they come up to a college for the first time, you will find an amazing mixture of personalities. I am trying to point out how we cannot evaluate results unless we take into account these personalities. For example, the All American athletes—headlines, scrapbooks, glory—come into a training camp. Some are top notch, some fade when standing up against others who may not have been recognized. We have the bonus babies who are in general very hep. Some of them already own stocks, and are financial geniuses with lawyers, all very sharp. We have the health faddist who spends too much time depending on quackery in many instances. And we have the training faddist who spends too much time on exercises. Then we have the fellow who is always hurt—the injury prone, (and I have a special feeling about this which is not the subject of this talk, but my observations are that the injury-prone are the fellows who might be too loose in their knees and ankles, who are very agile, but who get hurt more readily than they should in their ligaments). On the other side, the more durable individual who might not be able to touch his hands to his toes is protected in his knees and ankles but has pulls in his muscles because of his tendency to contracture.

Then we have the binger—the fellow who is streaking. He does well for a while then lets down, then does well again, follows advice for a while and goes back down. Then we have the silent peer who decides who is "in" and who is "out". We have the neurotic alibier, who, every time he doesn't do well, blames it on something besides himself. We have the over-serious one who reads everything and tries to do everything he reads. And we have the practice hater who leaves his game until Saturday. And we have the rules-breakers, the cheap shot artists who try to hang on and are not good for the morale of the team. One can go on and on, but this is a simple quick summary of some of the things that we see that have to be considered when you talk about results. It is very important when we talk about the results of drugs and the results of treatment to realize the variability of athletes themselves. We've got individuals and people who have different backgrounds in a hybrid organization, and we have not evaluated some of these personal equations enough. The problem in medicine is different enough when you put people in a laboratory under controlled conditions and try to get a simple answer. How can we possibly do this to the athlete and get the answer? By breaking records? They've been breaking records since I was a little boy. At one time molasses accounted for it, an-

other time honey. It is the nature of man to break records. And so, we have to be very, very critical as scientists and you too as trainers about some of the things that you read and hear about. Don't be sold down the river by the wrestling coach, who was recently quoted as saying, "I don't see anything wrong with the anabolic steroids. I've never seen anybody hurt." That's the most ridiculous and dangerous attitude in the world. I don't see anything wrong with taking alcohol for a lot of people, but you know very well there are a lot of alcoholics in the ground when they overindulge.

I don't mean to preach here, because I am just an avid sports fan. If there is anything I can do to win for the Jets when the Jets don't win, I would find out everything I could find out and try to implement such a win. But I've got to make you realize, I think, my feelings because there isn't too much that can make them win except the things I'll enumerate. Now let's talk about the idiosyncrasies that are concerned with sports themselves, not just the establishment, not just the player, but the sporting world itself.

MISCONCEPTIONS IN SPORTS

In the first place, there is much theory and too little fact. This is always the way-it will be in life because we are always advancing. The importance of well-planned and well-controlled experiments is paramount if we are to get meaningful conclusions. It is even harder when you deal with athletic components than when you deal with a sick patient who has something wrong you can measure. The athlete cannot be studied in a metabolic unit. He has to be studied in his environment. He can't be studied by a whole core of scientists taking figures without having interference with his performance. Indeed, the trainer, with his observations, is probably the best equipped to study the athlete providing he does his homework. Let's take some of these idiosyncrasies in sports over the years that we have all been exposed to. I would like to say a few words about them. For example, (1) diet fads: In the first place, five centuries B.C., meat was regarded by the Greeks at the Olympic games as an important source of strength. Primitive man used meat to get his strength, and from that concept on down, a high protein diet has been associated with strength. It is just not true that protein itself creates strength. Protein creates protein. We have the problem of crash dieting. We have the rules of the boxing and wrestling sports who try to make boys lose weight thus altering their body composition. I am sure you will hear more about this during the meeting. Young individuals who diet in order to make weight develop under nutrition as Dr. Keys pointed out in 1943. Such crash dieting is a very important source of fatigue. But

there is room for a diet fad if the patient has a dietary insufficiency. Under certain circumstances, under competition, indeed, there is a 10% difference in the utilization of oxygen to burn carbohydrate. For example, one liter of oxygen will yield 6.5 calories to burn carbohydrates whereas one liter of oxygen will yield 4.5 calories to burn protein and fat. This indicates that there may be something to a high carbohydrate loading and also oxygen being given for very stressful situations. Otherwise, that is all. We don't have the facts. We have none whatsoever.

(2) "Swimming softens muscles". How often have we heard this? I've found out that one of the quickest ways to get my ailing post-operative boys back to action (faster than any way I can think of) is to dump them in water up to their waist and make them work against the water lifting their legs goose-step style, hips flexing against resistance of the water, stretching their hamstrings and calves in water. One finds that one can get a fellow back remarkably rapidly because of the fact that we have water plus the exercise in water. Swimming is a good exercise. The only thing about swimming is that it develops certain muscles, produces myotatic contractures in some of these muscles about which the individual has to be aware of and stretch them out.

(3) The training camp dependence conditioning. The idea that one can go to camp and start getting ready in May or go to camp and be ready in July is nonsense. In the pros and certainly to older athletes this is an all-year problem, and I am not going to belabor the point, but suffice it to say that some boys lay off conditioning the way some students lay off study after exams for a while. These individuals will often get tighter unbeknownst to them and their six-week or eight-week training produces injury unless they have year-round conditioning. In high school this is not a problem. The boy is smaller; he is a little bit more agile; he has less contracture; and he is playing all year-round sports. But in the pros and in the older athletes this becomes a problem.

(4) Ergogenic aids: There are all kinds of ergogenic aids. As you know these are aids which will increase performance. Now increasing performance doesn't have to be a biochemically enhanced performance. We will list some of the common ergogenic aids. (a) Oxygen. Oxygen helps carbohydrates burn, but in the 100-yard dash the need for oxygen is only 6 liters. It has been demonstrated that through anaerobic metabolism (without getting oxygen) up to 16 liters can be produced without administering oxygen so that lengthening the recovery period will allow one to recover. Miller and Bannister have stated that oxygen helps those with strenuous exercise recover faster. But recently this has been questioned by Hill, who stated that the partial pressure of oxygen-inspired air, the air you breathe,

does not determine speed of recovery. I think the respiratory physiologists can tell us a little bit more about this. Therefore, even oxygen is a new question. We use oxygen. The boys have learned to use it in college, and they take it for a short while and it is necessary to have it in an emergency. I don't know that the ills outweigh the advantages in that respect. Psychologically, if you don't have it the player storms and rants because he has certain personality traits we alluded to. He begins to think that we are not going all out for him.

(5) Vitamins and tonics: The problem of vitamin overuse was rampant in the 30's. When Venzke, Bonthron and Cunningham were running their classical miles, the B-complex vitamins were being pushed to the hilt in track at that time, and records were being broken. Therefore, it was the B vitamins, and it was the folic acid in 1945. Vitamins are necessary if you are deficient, and if you get an increased amount of vitamins I don't think it can hurt you. However, if you have too much vitamin, you may get an abnormal red count, and as a result this may throw off the figures if you have illness thereafter.

The use of tonics may be fine for a person with iron deficiency. It has no place in the normal, healthy athlete.

(6) Now as to exercise rituals, equipment, and machinery. I have seen about 99 varieties of exercise rituals brought to camp. Basically, I feel that so long as the ritual allows the individuals to accomplish stretching to get rid of contractions in the anterior thigh, upper hip, upper buttock, hamstrings, calf, and dorsiflexors of the foot and the anterior lateral compartment it should be encouraged. This is particularly important in the individual who has the tight joints such as the one who cannot supinate the forearm, who cannot quite hyper-extend the elbow, who cannot adduct the shoulder across his body, and who cannot touch his toes. These are fit individuals who have bulky muscles. They can reduce their instance of "pulls". These rituals must be analyzed to be sure that they are accomplishing that. Conversely, those individuals who have the hypersupination, hyperextension of elbows, hyperflexion of shoulders, hyperextension of the knees, ability to put the palms on the floor are not benefited by such exercises and will not be hurt by them. These individuals, of course, should be strengthened. We have to analyze these rituals a little bit more carefully, and that is the subject of a talk itself.

(7) Pep pills and hypnosis: This is a problem we are going to spend more time with. There is no room for hypnosis in sports, though it has been tried, because the psychiatrist states that the man who can be hypnotized must have some personality quirk. We are not in the business of treating personality quirks by hypnosis.

(8) Equipment fads and taping excesses: I think that it would be wrong to tape an ankle tight. If the ankle is loose and the knee has been hurt and the knee is loose, you may throw additional strain from the foot onto the knee and further injure the knee. Therefore, taping too has to be individualized. It depends on what you are trying to accomplish. That means that when you tape the ankle you have to realize if this is a loose fellow or a tight fellow and what this taping will do to that knee. These are ergogenic aids because they all increase performance if properly implemented.

(9) Odd training schedules: We are all bombarded by the long, cross-country trip, the rapid acclimatization to high altitude, by rushing to home or back to school or work on Monday. The problem of playing in Canada and returning home to hot weather is an example of what occurs in such a schedule. Putting a player in hot weather to acclimatize him is an ergogenic aid. Such aids are not necessarily bad. I don't want to leave with you the idea that ergogenic aid implies that they are all bad. You have to specify what ergogenic aids we are talking about.

(10) The reluctance to drink water during the game: This was reported on by Murphy, Smith and Nash in 1965 and you will hear about that. We provide all the water the boys need, and I don't think we have any trouble with heat exhaustion.

(11) Weight lifting: It is a fact that the stronger you are the more force it takes to hurt you. But there are certain rules about this. There is a very interesting article in *Science* by Lietzke in 1965 who has done a fascinating study on all of our wrestling champions. Right down the line it shows that the weight lifting ability is proportional to $\frac{2}{3}$ of the body weight in the trained individual. Therefore, a man who can lift more weight at 300 pounds may not be as good a weight lifter as the fellow who can lift at 110 pounds a weight on this scale that logarithmically is at a better performance level. Therefore, it is important to realize what your aims are in trying to lift weights. Your aims are to increase strength, and in increasing strength you contact and make the cross sectional area wider (and also get myotatic contractions). The idea of trying to do gimmick exercises is to be condemned. Isometric exercises only or isotonic exercises only without stretching can be very seriously injurious. Tendinitis, capsulitis, subluxation may all be caused by weight lifting without direction. The trainer has to give directions. He has to know this.

(12) Pushing too far and too fast: I think this is one of the problems of pro football that bothers me very much. The rookies come in the 12th and the pros come in five days later. Inside of a week they have an intrasquad game and in two weeks

they have a training schedule that runs them around the country on a plane in hot weather and everywhere else. They are there running, banging away and learning techniques. Because of this, the injury rate at training camp over the last five to six years has been remarkably constant. Ten per cent of our 70 boys each year is lost for the season during camp. I am sure that to some extent a boy gets hurt because of his schedule which is too far and too fast. I think the same thing applies to baseball, track, and swimming because of the vacation time. The problem of compulsion to play will hurt. How noble it is to have a "trick" knee and to ignore it and get out there for dear old Harvard! That compulsion to play when hurt leads to a second injury and a third injury, and one finally has a Koufax or a Namath who has been hurting repeatedly from playing for a series or a Bowl rather than resting and seeking definitive treatment. This business of playing when hurt at 80% efficiency because you are still better than what is on the bench to me is a criminal act. I think I can understand making an allowance for a championship game or for a special event. The trouble is where is the line drawn. We as individuals who care for athletes must constantly think of this. At what cost must one play—the cost of a ruptured ligament or the cost of hurting a knee and playing with it until it cannot be repaired or at the cost of heat exhaustion? The trainer has to temper this, and he has to communicate with his players. The lack of a physical examination or an inadequate physical examination is wrong. One has a wonderful opportunity as a trainer to keep records, see the individuals, and develop his own approaches. Nobody else is there to measure and see you. You are in the business—right at the grass roots of analyzing these individuals and giving data that is far more meaningful than what the doctors can give. Therefore, it is important to get efficient observations on paper. We have this problem and we have to find ways of getting out paper work so it is efficient. Perhaps transistorized portable dictating machines might be an answer. The trainer has to do these things if he is going to get data that is meaningful for us in the future.

(13) Imitation. How often do you see a young ball player imitate someone else on television? How often have you seen a tennis player or golfer who decides to turn more, lower his elbows, or decide to pitch a little different? He throws himself out of balance, loses his rhythm, loses proportion, or how often have you seen the quarterback who tries to imitate Tarkington and runs out and gets slammed in the side because he is trying to do what he sees on TV. These are some of the idiosyncrasies that we must keep in mind.

(14) Drugs: These are the really serious prob-

lems. The problem of equating the gain or loss of weight which has been used lately as due to anabolic steroids deserves study. It is something that must be kept in mind if one is going to analyze diet critically. In training the caloric need steps up as we all know. Then after the training ceases after adaptation, there is a little lay-off. There may be a remarkable change in the caloric demands of the individual just over a week end.

For example, here are some caloric costs per minute in some common sports. It is an amazing thing to realize that playing volleyball for a minute a 150-pound person would require 100 hours of playing volleyball to lose a pound. In tennis, you would have to play 50 hours, and in cross-country running 35 hours. Yet the loss of weight that day may be six or seven pounds. We are talking of shifts of fluids, not weight loss. This indicates a need for further study on the problem of weight alone before we can talk about what hormones do for weight. We have to realize the different reactions in this regard. There are skinny boys who don't gain weight no matter what one does.

(15) Stimulants: Now let's turn to the problem of stimulants and other ergogenic aids. The chemical structure of stimulants, analeptics are remarkably similar, no matter what the names, to epinephrine. Now you know what epinephrine does to you if you get upset and scared. The knees shake, the pulse can go up fast, you breathe fast, and there is a tremendous mobilization of the body due to this adrenergic stimulation. Now just imagine amphetamine which has the same ring structure and only a few different hydroxyl groups tacked on, potentiating this particular response to any stressing agent. And mind you, the body is a multiplicity of equations going on at the same time. I have seen a top notch 280-pound wonderful athlete come off the field, convulse with headache and taken to the hospital disoriented. His blood pressure was 280/150, EEG, spinal tap and all tests absolutely normal with the exception of abnormal T-waves. We finally got the answer. He took six bennies before the game. He had had Benzedrine on top of the epinephrine. Even if these amphetamines help, we don't know how they help different people, so you have to realize that there is an awful lot going on behind the scenes that we can't approve of. If we did, we would become non-scientific.

There are three types of ergogenic chemicals: drugs, hormones and other materials. Analgesics are ergogenic aids. Novocain which is injected into a painful ankle is an ergogenic aid. The pain stops and the athlete performs better. However, this cannot be condoned in any way where there is a ligamentous tear because one can tear the ligament further. However, I must confess, and I

Cont'd on Page 15



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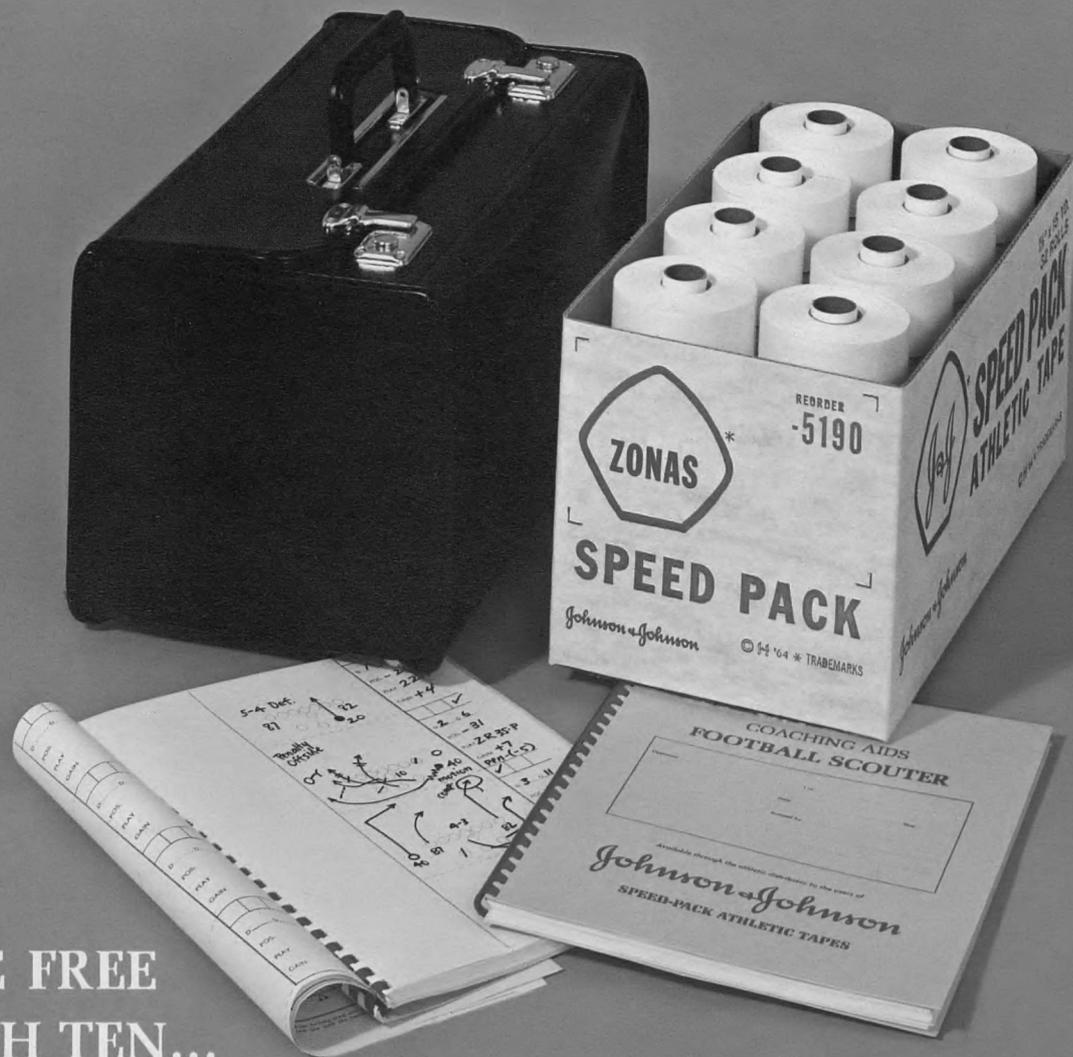
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am the first to admit it, that I have used novocain to stop pain in a bruise or in a tennis elbow for the relief of pain at the half with the player continuing the game without effect. This is not morally dishonest, and I think that it should be done. The point is that we are using discrimination with the doctor taking the responsibility and informing the player of his decision. This does not condone the general use of these analgesics.

As to tranquilizers and barbituates, we had a place kicker who had been having a tough time for a while. He was jittery, and he was having a difficult time as far as we were concerned. On just Miltown this boy changed with his tremendous fear and stage fright leaving him. He was able to get up and talk and walk before the game. In another instance a boy who was absolutely shaken before the game calmed down completely with Miltown. These drugs impair judgment in the long run, can be habit-forming and can lead to blood disturbances and cause jaundice, so we cannot advocate their use without discrimination.

Peripheral vasodilators twenty years ago were being used to increase the blood flow to the arms and legs therefore theoretically increasing utilization of carbohydrates and increasing muscle energy. Absolutely no proof exists that these helped. Regarding analeptics, the stimulants we've discussed, the AMA has condemned without exception their use in sports. It is now a violation of the drug laws of this country to be prescribing these drugs except for sound, medical reasons. Yet there is always the bad egg who passes these drugs on to his college classmate. The trainer has the responsibility of sitting down and talking to these boys. He has to stop the use of these drugs, because no one else can. If he can't get the message across, he does not have control of the team. If a player still uses the drug in spite of the trainer then the trainer must realize that he has a boy with a weakness who will addict himself. These are the drugs that addict people. Without getting into some of the side-effects of amphetamines, we know that amphetamines can increase performance. We know that if you want to stay up all night to cram for an exam or write a paper you can accomplish this by taking Benzedrine or Dexedrine. There is enough evidence and literature written by a number of individuals including Beecher and Karpovich that states that these drugs increase mental acuity, but that is not the same as taking a man who is running hard, his whole body concentrating on putting out for the game.

We will now go to the problem that everyone is talking about, and that is the problem of hormones. How many of you ten years ago remember that boys were getting cortisone 50 to 100 milligrams a crack and increasing performance. Cortisone increased the production of sugar by using

protein and produced a wonderful well-being and this was the greatest thing for some athletes. They were using it, and records were being broken. Yet what do we find out? In doses of variable duration cortisone produces diabetes, loss of calcium in the bones, hypertension, and adrenal insufficiency. Adaptation to the drug produced in some instances dependence. These drugs are not being used any more.

Cortisone by injection is a wholly different problem. Injection of cortisone into an elbow, into the medial condyle of the femur, or into the ankle ligaments is sound medical treatment because it does release certain inflammatory products and allows them to be absorbed. Anabolic steroids are a mute question. They are in wide use. There is no clinical data to support their value except in individuals with negative nitrogen balance, and whether they can stimulate a prostatic rest cell potentially malignant is not known but suspected.

CONCLUSION

Doping. In a policy statement to all governing bodies in sports of the British Association of Sports and Medicine a very precise definition of doping was formulated. They are very strict about this, and they are probably far ahead of our own organizations in trying to keep us from doping ourselves. The British are a little bit impractical. For example, they state that the use of any chemical substance not present normally in the body and not playing an essential role by a healthy individual, a top notch runner or wrestler while taking part in a sporting competition is doping. This is the first thing to remember. This is what they define doping as being: any abnormal substance introduced in abnormal amounts, any agent administered for the sole purpose of alleviating secondary effects so as to improve performance. They state, "There is no known chemical agent, which will both safely and effectively improve performance of healthy subjects. This is the consensus today, and no purpose other than medical should properly be served except in controlled research by the use of these ergogenic aids."

There is a more practical application for your conscience, which I think we should adhere to, and that is the ruling of the International Amateur Athletic Federation. Their feeling is that no agent that stimulates muscles and nerves should be used. No agent which paralyzes the sense of fatigue should be used, and no agent which is habit-forming should be used.

We get to the point, therefore, that the best ergogenic aid is still the coach, his trainer, and a rapport between them and the young athlete. With the present knowledge, the best ergogenic aid is still training. Improvement of training, endurance, skill of performance will result by increasing the physiological efficiency over that of the untrained state.

The Gibney Ankle Strapping—A BRIEF HISTORY

Clyde Stretch,
Michigan State University

One of the more common methods of ankle support throughout the history of athletic training has been some form of the "Gibney" strapping method, or the basketweave. This technique of supporting the ankle using a form of intertwining stirrups and lateral strips of adhesive tape has an origin that proves to be of some interest.

In the January, 1893 issue of the *New York Polyclinic*, a doctor named V. P. Gibney provided an article telling of a new method for treating ankle sprains. In this article Dr. Gibney presented a case report telling of a doctor who was a major in the medical corps of the United States Army during the 1880's. While this doctor was out on a march with some of the troops, one of the soldiers stepped into a hole and suffered what appeared to be a severe ankle sprain. It had seemed evident that a portion of the external lateral ligament had been torn, with the appearance of immediate extreme swelling and pain. In order to support the injured ankle, and having nothing else available to handle the situation, the doctor applied a "basketweave" dressing of adhesive straps, overlapping them for additional strength. The injured man, aided by fellow soldiers, limped along with the march, gradually bearing further weight on the injured ankle. After two of three miles, the injured soldier was walking

unaided with very little pain. He completed the remaining fifteen mile march to the fort, arriving with no limp, no pain, and no swelling.

This case was accepted as the origination of the basketweave method of taping, assuming Dr. Gibney to be the doctor on that march. Two years after the publication of that article, however, Dr. Gibney clarified matters in an article in the *New York Medical Journal*, February, 1895.

The second article by Dr. Gibney stated that he was not the doctor on the march, nor had he originated that method of treatment for ankle sprains. Credit was given to Dr. William R. Davis of the army medical corps for bringing this method of ankle treatment to the attention of the author in 1888. It was also added that at the time of the case presented, it was a fairly common practice at that army post to treat the sprained ankles of soldiers with that adhesive plaster method, and generally with the same good results.

Thus, the original source and time of the so-called "Gibney" method of ankle taping must remain anonymous.

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Congratulations On Annual Convention

The 18th Annual NATA Convention was held June 11-14, at the Sheraton-Columbus Motor Hotel in Columbus, Ohio. Hearty congratulations are in order for host District Number Four for their excellent job in staging the annual affair. A special thanks goes to Ernie Biggs, who was an outstanding Program Chairman, and to Millard Kelly, District Four President and to all their countless assistants. Also, as usual, a great job was done by our National Secretary, Bill Newell, his assistant, Tom Heal-

ion, and by our National Chairman of the Board, Bobby Gunn.

We had a fine turnout with more than 400 attending and a record number of exhibitors had booths. A special thanks here to Joe Blankowitsch, Registration Chairman, and to Warren Ariail, the Exhibits Chairman.

The Convention got off to its usual start with the Welcoming Address, Introduction of Exhibitors, and the National Business Meeting. Bill Newell made it known at this meet-

ing that he had submitted his resignation to the Board. However, he said he would help the NATA in any way he could until the Board could replace him.

The Annual Honorary and Awards Banquet was one of the biggest highlights of the Convention. The banquet hall was packed. A standing ovation was given the new inductees into the Helms Hall of Fame. Each inductee said a few words. What each had to say was a special treat to all, but no one at-



1967 Inductees into the Hall of Fame
 L. to R.—Bill Linskey, Bill Ferrell, Howard Waite, James H. Johnston, Naseby Rhinehart,
 W. J. "Dutch" Luchsinger, George Sullivan (Chairman of the NATA Helms Committee)

tending will ever forget the stirring words by Bill Ferrell of the University of Arkansas.

The program revealed an excellent choice of topics and all the presentations were outstanding. Through the help of Ernie Biggs several of these presentations have been submitted to the Journal for publication. The paper presented by Bob Nichollette, of the University of Illinois, on *Cryokinetics* has already been published in the June issue. The paper by Dr. James Nicholas, team physician

for the New York Jets, is included in this issue. Dr. Nicholas' paper is entitled *Critical Analysis of Ergogenic Aids*.

For future reference here is a thumbnail sketch of two papers, presented at the June Meeting, which will be in forthcoming issues of the Journal:

Weight Loss in Wrestling—by Dr. Carl Blyth, Ph.D., University of North Carolina. Dr. Blyth not only points out the dangers involved in crash dieting through the use of actual case studies, but also through medical and physiological studies that have been well

documented in medical and research literature.

Management of Muscle Injury—by Dr. Richard Patton, M.D.—Team Physician, Ohio State University. Dr. Patton gives us his ideas as to the ABC's of muscle injuries. He covered what happens to a muscle when it is first injured; what we as trainers can do to assist the healing of this muscle; and, what we can do to protect this muscle from further injury.

Congratulations again to all those involved in making the 1967 Annual Convention an entertaining and instructive success. MARV ROBERSON, Editor



At left,
 1967 Program Chairman
 NATA National Convention
 held in Columbus, Ohio
 Ernie Biggs
 Ohio State University



At right,
 1967 NATA Awards
 Banquet Speaker
 Glenn "Tiger" Ellison
 Ohio State

Letters to the Editor

Dear Editor:

Greetings from Mexico . . . It looks as though the 1968 Olimpico will be held on schedule in this great city of nearly 7 million. I might qualify that slightly by predicting there will be some slipping of schedule following the opening ceremonies, especially during the athletic events. This will be different from the past 3 or 4 Olympiads, but will fit into the Mexicana motif that will prevail during October 1968.

The Mexican officials planning the games or festival, which some involved refer to it, are going to have a "mas grande" program of artistic events to complement the games. This course of versatile arts and games regresses history to the earliest olympiads; so one cannot fault the host nation for their planning in this way. Mexico certainly has the background and talent for such an extravaganza.

Preparing the Mexican athletes for the games is possibly the most frustrating aspect of getting ready. It is unlikely we can have them anymore than generally organized into something bordering on international type athletic units. To have them beyond this point will take another generation. I hope they use this splendid opportunity to generate the inertia to promote a nationwide sports and physical fitness program.

The Mexican athlete loves to play, does it with relaxation and much gracefulness. However, when their event necessitates arduous practice and training, they aren't certain it is all worth the effort. It will require time and patience to instill this philosophy of practice and sacrifice in sports to have fruitful results. You and your colleagues are probably interested in the athletic training, which is the term used here and in most nations for the coach. Consequently there is no such thing as athletic trainers to be found in Mexico. The medical doctors who are most interested in sports medicine operate a medical installation here at the Centro Deportivo (Sports Center), which is much like our military dispensaries with one section set aside for research. It is discouraging to see them spending money and manpower on projects to discover information they could readily obtain from prior experiments already investigated and reported on from many other nations.

Their impression or idea of the athletic trainer, as we recognize them, is that of a "witch doctor" type; however, their experience and knowledge of athletic injuries is almost nil, so you can see this mission I'm on here is truly a missionary type.

The altitude complication is not going to cause

many problems if the proper conditioning and investigations are carried out using what is currently known about the effects of altitude. There are two vital aspects generally agreed on: (1) Altitude is more unsuitable for the female athlete. (2) A great or above average athlete at sealevel might *never* accommodate to altitude regardless of length of time spent training in it.

In summary, I can't stress the point enough that we athletic trainers in the United States are extremely fortunate in having the Medical profession with us for guidance and support; also our other allied professional fields.

There are a few points I'm determined to instill before my time is up here. One is to convince the medical personnel the importance of grounding their physical therapy modalities, especially the whirlpools whose electrical outlets are installed in the floor!!!! It might also be of interest to tell you the CDOM has no relationship to the International aspects but only involves the preparing of the Mexican athlete for the games.

Sincerely,
CONNIE JARVIS

Dear Editor:

Even though it was impossible for me to attend the 1967 NATA meeting in Columbus this year, I still followed the proceedings and meetings with great interest.

Before the meeting, there were many notes of discord and discontent. The successful future of the profession was being questioned by many. The arguments and discussions over procedures and methods for professional advancement ran the gamut from reasonable to over-ambitious and from practical to insane.

Somehow, out of a membership of considerate, intelligent and selfless members emerged a spirit that was unwilling to face defeat.

Numerous reports following the meeting seem to reflect this same feeling. NATA will survive and grow as a unified group of athletic trainers working together for the profession.

Proper answers will come in time, but it has taken a year of anxiety for some to realize that we have made great strides in the past 17 years. I don't believe we are capable of a clear look now at the athletic trainer of 1984. Why not, then, take one year at a time?

So; congratulations and bless you all for the cooperative spirit of Columbus, Ohio, 1967.

Sincerely,
CHUCK CRAMER
Gardner, Kansas

A. M. A. To Sponsor Ninth National Conference on the Medical Aspects of Sports

The Ninth National Conference on the Medical Aspects of Sports, sponsored by the American Medical Association under the auspices of its Committee on the Medical Aspects of Sports, will be held in Houston, Texas, at the Hotel America on November 26, 1967. The Conference is held annually in conjunction with and on the first day of the Clinical Convention of the American Medical Association.

As was true of the previous eight Conferences, the Ninth will cover a wide range of subjects of interest to those serving school and college athletic programs. Included will be forums and discussion sections relating to prevention of knee injuries, sports cardiology, and quackery in sports. Two sessions will be devoted to a series of common clinical conditions of rather variable significance in the athletic setting (eg, gastroenteritis, concussions, genitourinary tract injuries, and rib injuries). At the Conference Luncheon, Eduardo Hay, MD, Director General of the Centro Deportivo Olimpico Mexicano, will discuss the preparations for the 1968 Olympic Games.

The Conference is open to key nonmedical athletic personnel as well as interested physicians. Those who would like to receive further information concerning the Conference should address the Committee on the Medical Aspects of Sports, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

New Athletic Institute Book To Benefit Olympic Entrants

With the 1968 Olympic Games scheduled for Mexico City (elevation 7,347 ft.), The Athletic Institute has published a timely new book entitled *The Effects of Altitude on Physical Performance*. The book recognizes specific problems that will be faced in Mexico City, such as common altitude symptoms (headaches, fatigue, shortness of breath, palpitation and tachycardia), distinct differences in performance times from sea level and variations in the ability of individuals to adjust to altitude.

Through extensive observations at past athletic events held at altitude, and based on reports of

eminent medical experts, coaches and physiologists throughout the world, recommendations are made that will minimize or equalize the deleterious effects on the athletes. The book is based on the International Symposium on The Effects of Altitude on Physical Performance co-sponsored by the United States Olympic Committee, the Lovelace Foundation for Medical Education and Research, and the University of New Mexico.

Three major physiological problems exist. The first is the oxygen debt which occurs at altitude in races requiring maximal physical performance for more than two minutes (long distance events). The second is that physical performance at 7,300 feet can be expected to reach about 93 per cent of that at sea level with acclimatization. The third has to do with a period of acclimatization. This period of duration is unknown at this time, specifically. It was felt by the majority of participants at the International Symposium that a minimum period of three weeks is required to show leveling off of improvement.

Recommendations are made concerning pre-Olympic training, acclimatization prior to the Olympics and the importance of environmental control. Training techniques and methods of competition at altitude are shown to be an important consideration in all sports, but particularly in those requiring maximal physical performance.

The book itself is divided into eight sections:

- Effects of altitude on biochemical parameters
- Acclimatization to altitude
- Effects of altitude on cardio-pulmonary systems
- Studies of performance at altitude in athletes
- Reports of studies at International Sports Week in Mexico City, 1965
- Observations on athletes' performance at 1966 Indoor Track and Field Championships
- Summary of the International Symposium
- Recommendations to the International Olympic Committee

The 1966 United States Indoor Track and Field Championships for Men and Women were held in Albuquerque, New Mexico simultaneously with the Symposium. The Symposium was under the direction of the National Sports Medicine Committee of the Amateur Athletic Union of the United States. Inquiries concerning the book which is priced at \$5.50 per copy should be directed to The Athletic Institute, 805 Merchandise Mart, Chicago, Illinois 60654.

New Book on Heat Stress

HEAT STRESS & HEAT DISORDERS,
Second Edition,

by C. S. Leithead & A. R. Lind,
F. A. Davis Co., Philadelphia, 1964,
Cloth. 304 pp., illus. \$6.95

*Reviewed by Joe Gieck, University of Virginia,
Charlottesville, Va.*

This book gives excellent coverage to the problem of heat in relation to its effects on working individuals. Physiology of exposure to heat, is carried through all the systems of the body with special emphasis on the failure of the systems as a result of heat. The authors also classify and differentiate between the various heat disorders; heat syncope, disorders of water and electrolyte balance, heat cramps, skin disorders, heat stroke and hyperpyrexia, anhydrotic heat exhaustion, and water verses salt depletion are compared. The pathogenesis is also covered for all these syndromes as are their effective treatments established.

The results and standards of armed forces' tests and certain heat stress indices they use to prevent heat problems are listed. The scientific importance of salt and water to the body is well documented and emphasis is made that a high intake of salt without water is contraindicated. The authors cite studies and experiments which show the physically conditioned person to be superior to the unconditioned and/or obese in instances of heat stress. Also air conditioning is advocated for rest and sleeping periods during periods of heat. Tables are present indicating the loss of salt and water of the acclimated and unacclimated.

Treatment of heat disorders is reviewed with statistical data indicating that a special type table for reducing rectal temperature is the most effective. Psychological problems in heat also are reviewed.

Although this text is written primarily for industrial, military, and tropical personnel, there is a great deal of the book that applies to early season football practices conducted in the heat. This plus the fourteen page bibliography make the book a very complete guide toward the trainer's understanding of the problems of heat.

Richard Schafer Joins National Federation Staff

The Executive Committee of the National Federation of State High School Athletic Associations recently announced the addition of Richard C. Schafer to its headquarters staff. Currently Mr. Schafer is the executive secretary of the Wyoming High School Activities Association. He will come to the Chicago office on April 15, where he will be assistant to Mr. Clifford B. Fagan, the National Federation's executive secretary.

Fall, 1967 — Recent Athletic Training Literature

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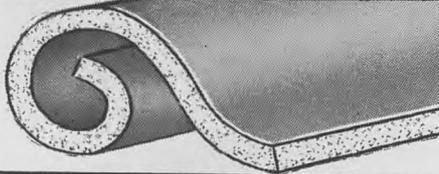


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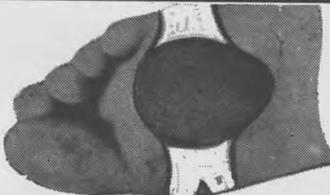
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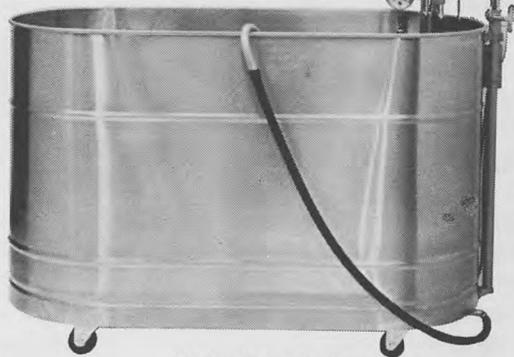
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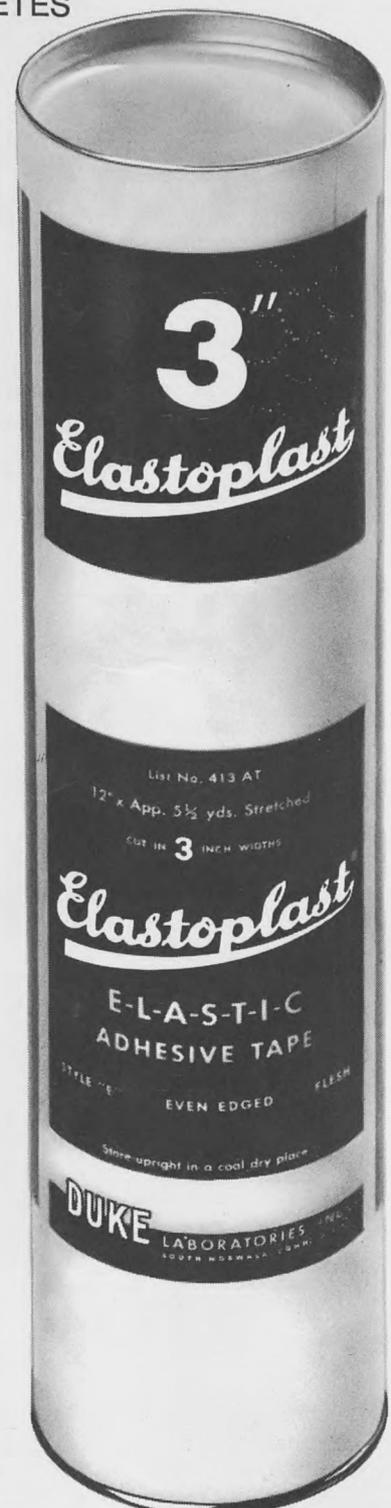
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ELASTOPLAST—MADE IN U.S.A.—THE ORIGINAL E-L-A-S-T-I-C ADHESIVE TAPE AND UNIT DRESSINGS

HELP KILL JOCK ITCH

Lloyd R. Wilson
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Denver, Colorado 80210

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With kindness.

Cruex helps kill the fungi that cause jock itch. So don't be fooled by the fact that it doesn't hurt. (Can't you just see the faces of those kids who have heard getting "the treatment" for jock itch was murder?)

And while killing fungi, Cruex cools and soothes inflamed skin. Cushions raw skin against further chafing (like a powdery bandage). And it dries up perspiration—breeding ground for jock itch.

At the same time, Cruex helps destroy secondary bacteria that can create new infection.

Besides, it's so easy to use it's bound to get the team behind it.

It sprays into hard-to-get-at places.



There's no smearing. No spreading. No rubbing in. In fact, no hands at all. (And because it's not a big deal to use, your boys will keep up the treatment. Even use Cruex on their own as a preventive.)

Tell the boys about Cruex. And have it around. That's the big first step toward having the boys make a practice of using it.

And you know what they say about practice... and perfect. Take advantage of this introductory offer. Twenty-four 3-ounce cans for \$23.56. (Equivalent to \$42.96 retail value.) Or we'll send you one package for trial, for only \$1.50.

Send your order to Desenex Athletic Division, Wallace & Tiernan, Inc., P.O. Box 538, Rochester, New York 14603.

CruexTM Spray-on powder.

Selected for use by the Coaches All-America Game

