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THE JOURNAL

of the National Athletic Trainers Association

SEPTEMBER 1965








NATIONAL CONVENTION HONORS—see page 16

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THE JOURNAL
of the National Athletic Trainers Association

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The Journal of the National Athletic Trainers Association is published quarterly at Palo Alto, California. Subscription charge to members: $1.00 per year.

Editor and Advertising Manager: D. Conrad Jarvis. Managing Editor: Marvin Roberson.

Application to mail at second class postage is pending at Palo Alto, California.

All communications concerning *The Journal* should be directed to D. Conrad Jarvis, Department of Athletics, Stanford University, Stanford, California 94305.

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.
2. When references are made to other published 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.
4. It is the understanding of the *Journal* editors that any manuscripts submitted will not have been published previously.

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

EDITORIAL

FOLLOWING is the text of a brief and inspirational address given by William E. Newell, Executive Secretary of the National Athletic Trainers Association, at the Association's 1965 annual convention in Chicago:

George Bernard Shaw, speaking as an Irishman, summed up an approach to life: "Other peoples see things and say, 'Why?' But I dream things that never were—and I say, 'Why not?' "

It is that quality of the Irish, the remarkable combination of hope, confidence, and imagination, that is needed more than ever today. The problems of the world cannot possibly be solved by skeptics or cynics whose horizons are limited by the obvious realities. We need men who can dream of things that never were, and ask, "Why not?"

These are the kinds of men we have had in our Association, who have provided for our growth in education, in medicine, and in athletics. We are proud of the men who are being honored here tonight. We are proud of our relationships with other associations which have provided us with recognition and generous counsel.

Perhaps the most valuable result of all education is the ability to make oneself do the things one has to do, when they ought to be done, whether one likes it or not. It is the first lesson that should be learned, and no matter how early a man's training begins, it is probably the last lesson he learns thoroughly.

Through the years the list of our program speakers reads like a *Who's Who* in the field of athletic medicine. A look at the fine program directed by Tom Healion this year demonstrates the growth of ideas. Oliver Wendell Holmes once said, "Man's mind, stretched to a new idea, never goes back to its original dimensions."

We need all of the technical training we can accumulate. But let us not mistake qualification for ability; it is the use of the tool rather than the possession of it which gets the job done.

As I look around this room tonight, I am very proud of the youngsters and the wonderful opportunities of the future. And as I look, I think too of those wonderful people who did the groundwork for our profession with toil and sweat, who provided the image we now enjoy. It is said that reputations are what men and women *think* of us, character is what God and the angels *know* of us. The men who are retiring this year have truly earned their rest, and we wish them "God bless."

The NATA was founded on the principle of national cooperation. It was assumed at that first meeting in Kansas City that the districts were prepared to live together and work together as an Association. We all agreed this was our purpose. We can achieve full success in creating a decent profession for all athletic trainers only if the districts work together in that direction. There is no other way.

Authority and responsibility are like the bow and arrow, the hammer and the anvil, rain and sunshine, man and woman—each is useless without the other.

An association may go wrong in many directions, but right in only one. Let us all say, "This is my Association, right or wrong—when right, keep her right; when wrong, put her right."

THE TRAINER'S GREATEST CONTRIBUTION

The keynote address at the 1965 Convention–quackery has no place in sports, and the trainer, by the quality of his influence, can be a key man in the fight against it.

By KENNETH S. CLARKE

Department of Community Health and Health Education
American Medical Association

THAT THE ABSORBING APPEAL of sports bears influence within our culture evokes no argument from those who choose to champion the benefits from sports or who declare against them. The problem for us is the reality expressed by some unknown poet:

"The honeybee is funny, its functions seeming double.
One end gives us honey, the other gives us trouble."

THE TRAINER AS A COUNSELOR-EDUCATOR

The athletic trainer, of course, champions the honey; but in doing so he must prepare and dedicate himself against the other. There is no alternative. If you as the trainer can ensure for the athletes you serve the opportunity to savor the goodness in sports without their getting stung, you are making a significant contribution. But there's more honey to be had than just seeing your athletes through the season. If you are successful in providing your athletes with insights and concepts to aid a lifetime of personal judgments on health matters, then you will have rendered them a favor without measure. And in doing so, you will have helped fulfill the justification of sports in our culture. In the perpetual argument of abuse and value in sports, you will have countered with reasonable logic the shouting of organized masochism emitting from the cynics, and you will have tempered with proper reserve the claims of polygonic panaceas from the zealots.

The athletic trainer, of course, is not alone among conscientious men who devote their lives to the development of youth. However, his strategic role in face-to-face practical relationships with the athlete, linking the performance and health concerns of coach and team physician, is the role of potent influence.

Although the team physician will make the decisions on immediate health matters, it is your communication of these matters to your athletes through your skills and perceptions, for good or for bad, that will endure as the payoff of their sports experience.

The standards you have set for your profession indicate your awareness that you are not only responsible but that you are accountable for the quality of influence you exert on those you serve. This is what separates you—an educator—from a salesman. As an educator, your role is to prevent your athletes from being influenced by a con man. Since you are an educator with respect to the health aspects of sports, the con man you are combating is the quack. Perhaps you've never considered quackery as affecting sports, or that it would be of any significance to the qualified trainer. But such thought is good, virgin territory for exploration of your professional effectiveness.

QUACKERY AND SPORTS

The key problem in suggesting the possibility of quackery being related to sports is the customary impression of quackery: black-hatted and

mustached sinister frauds practicing medicine without degree or license on ignorant unfortunates; or, surefire cancer and arthritic cures being sold to desperate middle-aged and elderly people; or, wild claims of old-time hucksters to be laughed at in our modern sophisticated society; or, bust developers and hip reducers being sold to women by fitness hotshots who are playing both ends against the middle. However, a Food and Drug Administration official provided us with a more helpful concept of quackery when he said, at a recent AMA school health conference, "The word 'quackery' includes a wide variety of misinformation concerning health which misleads the public even though there may be no deliberate intent to mislead."

Federal and medical investigators have been emphasizing for years that the money spent on fraudulent, ineffective, and harmful health promotions is fantastic. The financial loss only reflects the more tragic loss of health and life by gullible reliance on the pitch of the quack. Yet, too many people—especially our school-age impressionables—cannot picture themselves as being affected by a quack. Indeed, they may not possess the notion he exists. We must begin to relate quackery to our lives, and now.

To be sure, an athlete's health can be undesirably affected by far more than is legally recognized as quackery or than is indictable by present standards. As educators, we must never forget that the dramatic appeal of sports activities for young and old gives the practices they read about, see, and experience in the athletic arena an aura of authenticity which can influence their concepts of health and fitness.

Ponder the full significance of a brief letter I received not too long ago from a high school boy aspiring to athletics. He had inquired as to the dietary needs of an athlete. He was discouraged and worried that he could not gain athletic fitness *because he could not afford what he understood was nutritionally essential.* This letter, simple in its statement of a problem, is not so simple in its implications. It reflects that problems can occur when an individual is called upon to make personal judgments on health matters when he is faced with conflicting advice, inconsistent information, and a variety of sources to choose from.

It indicates that the influence of sports in our society attracts bad as well as good promotions that latch onto the respectability of trying to become healthy and fit. It suggests the potential significance of the trainer's contribution. It reveals this boy to be a victim of sports quackery.

The revealings of behavioral science that some will always seek out the quack cannot alone account for the fantastic market durability of unworthy health products, devices, and practitioners. Quacks have to be getting help from somewhere. Is it surprising to be told that unsuitable sports experiences and indiscriminate emulation of the star athlete are involved—especially since what youth have been exposed to in classrooms as health and fitness is not always consistent with what is experienced or witnessed on the field, or read in a sensational press? Is it any surprise that many grasp at the straws of quackery which clarify the meaning of fitness to fit whatever the seller has to sell? Or which offer glib and misrepresented shortcuts to fitness and success? Or which plant the seed of fear to create a market where one doesn't exist? Or which just plain horn in on the fitness market by substituting substandard replicas of worthy products or overglamorizing and overpricing these same worthy products?

SPORTS IN PERSPECTIVE

But perhaps the problem in suggesting the possibility of relating quackery to sports is the customary impression of sports. The immediate hurdle is that athletic products, devices, and practices unfortunately are commonly connected with performance and not with health, with entertainment and not with education. All four aspects of sports—performance, health, entertainment, education—are to be evaluated respectively in separating value from abuse. By "respectively" is meant that these aspects are not to be confused one with another.

For example, there are virtues in the entertainment aspects, a fact not lost to business-oriented and education-oriented factions. But there are virtues in sports not found in business and that can live in harmony with business, *providing* that decisions are not based on the virtues of business to the exclusion of the health and education qualities that justify and perpetuate sports in our schools and communities. The challenge before us is thus to develop a perspective relating sports performance, entertainment, and education to health in a consistent fashion so that strategy and tactics in sports are attuned to the philosophy of sports. The evaluation of the service of your profession lies in the maintenance of this attunement.

Agreed that two of the prime safeguards in athletics—skill and conditioning—defy quantitative standards in many respects, but they do provide an obvious approach to relating performance to health. (The remainder of your three-day program is dedicated to improving this function.) A look at the nature of quackery provides the concepts helpful for fulfilling your professional function.

QUACKERY AND THE TIMES

Throughout history, the quack has taken advantage of the medical uncertainties of the times. In the early 1800's it was understandable that many patients preferred medicines as cures over the more arduous choice of medical bloodletting and purging while waiting for the discovery of the germ. In the late 1800's it was understandable that the quack's guaranteed germ-killing potions sold well while research was still seeking effective vaccines. (Perhaps it helped that these potions contained as high as 44% alcohol in days when respectable people abstained from drinking.)

Today most infectious diseases are under control. With the modern emphasis on prevention of organic disease, especially heart disease, which brings respectability to conscious fitness efforts by respectable people, and with our increased leisure time that both brought on the need for a conscious fitness effort and gives us the time to become worried about it, the quack still has the advantage. He still bridges the gap between what is known about health and what is done about it better than the physician, health educators, or athletic trainer because he can offer supposedly simple, sure, quick solutions to evasive problems and needs.

RISK AND JEOPARDY

To continue with our perspective: we are now urged to exercise regularly and eat suitably for health's sake. Sports are desirable media for this because they have qualities that aren't found in the exercise process itself. Ask any ditch digger. Sports can therefore serve as one form of preventive medicine. But medicine must meet standards of ethics and safety before it can be promoted for widespread use. To consider standards for sports medicine that aren't conveniently laid out for us, however, we must tread the vague domain between assumed risk and rank jeopardy. By "risk" I mean the natural potential hazards inherent in participation in sports or in active life. By "jeopardy" I mean the lack of attention to these risks, the undue addition of new risks, or the offering of substandard safeguards relating to the risks. It is to gain a high quality of evaluation of risk and jeopardy that you have set your educational standards. To apply and impart this quality to the individual as well as to the program makes athletic training an art as well as a science.

The mine field in this "vague domain" is the fact that the distinction between cause and effect can be no greater obscured than in the world of sports; the ingredients of skill and luck are too thoroughly combined. The institution of sports thus provides a fresh look at the meaning of quackery, and the concern for quackery gives us

DR. KENNETH S. CLARKE, a native of South Bend, Indiana, earned his B.S. degree at George Williams College, and his M.S. and Ph.D. degrees at the University of Illinois. In 1963 he joined the Department of Community Health and Health Education of the AMA as consultant in health and fitness.

In addition to these duties, he is staff coordinator of AMA's Committee on the Medical Aspects of Sports. In this capacity, he assists the Committee in providing information to interested physicians for the application of their medical skills in the athletic setting, and in advising other personnel and allied organizations on health matters related to sports. Before joining AMA, Dr. Clarke handled health education and research assignments for the University of Illinois and the Chicago Heart Association, then was on the faculty of the University of Illinois in the College of Physical Education. During this time, he conducted research on the health aspects of activity for paraplegics, and was instrumental in standardizing a variety of adapted sports for the physically handicapped. He expanded, directed, and coached the activity program for the University's 200 disabled students, including wheelchair football, basketball, baseball, fencing, and numerous individual sports.

In college, Dr. Clarke earned six varsity letters and was elected captain and most valuable player in his senior year of basketball. He is married and has two children.

a fresh approach to evaluating the contribution of sports.

The demand for maximal performance and durability in sports creates markets for quackery that just won't quit. The surge of new records in track and field, swimming, and most other sports is naturally resulting in great temptation for the impatient, incompetent, or insecure to resort to shortcuts, artificial aids, and the help of anyone with quick—though quack—advice. Also, sports produce a climate containing all the elements that favor conduciveness to quackery: superstition, hope, desperation, fear, subjectivity, luck, and suggestibility. Perpetuation of fad and fallacy is perhaps best understood in the contention that the quality and meaning of our experiences in sports color our personal approach to health aspects of living as well as sports.

A brisk controversy will always exist about sports because of the necessary risks taken to achieve the values and because of the excesses so often encountered on the way. The definition of disability within sports often seems incongruous with that found outside the athletic setting. It is confusing to some—including some behind the current fitness push—to visualize sports as health and fitness when what they see are broken bones, twisted knees, and traumatized egos. Some are thus condemning sports as quackery. Others are condemning the condemner as a quack. In between, the competitive enthusiast is accused of perverting the esthetics of play, and the esthetic stands accused of undermining the international prestige of our nation. Obviously, honorable men are using different criteria to arrive at abuses in or of sports.

A FRAMEWORK FOR CONSISTENT JUDGMENT

We know that athletes don't really intend to die for good old alma mater. To get at the problem, let us return to the transcending responsibility of the athletic trainer: the attunement of strategy and tactics in sports with the philosophy of sports. To do this you must have confidence in what you consider the philosophy of sports, and must exercise judgment consistently while exploring a vast number of problems, utilizing a variety of concepts, bearing in mind an infinite number of subtle considerations, and electing between a wide array of "experts" for substantiation. Moreover, you must attempt to impart this ability of judgment to your athletes.

Three umpires were discussing this fine art of judgment, and the calling of balls and strikes was the subject of the day. "I call them as I see them," stated the first. The second responded, "I call them as they are." The third closed the conversation by declaring, "They ain't nothing until I call them."

And so it is with relating health and sports to quackery. If we can assume that neither the abuses nor values are automatic outcomes, we can gain a framework for consistent judgment. Let's take the umpires one by one—idealist, realist, and pragmatist—for the development of this framework.

"I CALL THEM AS I SEE THEM"

As we see sports, they have educational as well as health value. If not, they simply have no place in our schools. Therefore, sports are justified as a medium for developing desirable attitudes and behavior that contribute to one's health—the fullest utilization of one's natural resources. The words "contributed to the health" are key. The alternative would be to evaluate sports as to the absence of illness or injury. This is a far more limited and less effective approach or justification because, at best, sports would be a mere placebo.

Next, the training regimen necessary for effective participation is just as necessary for safe participation, and thus contributes more to health and fitness than participation in the game itself. From this point of view, football contributes as much to the health of the fifth stringer as of the star. Moreover, in response to a frequent criticism, football has carry-over values—*if* the boy carries over the principles of healthful training and an exhilaration from having attained a high level of fitness.

In other words, the training program can be utilized as an effective comprehensive health education program, its "curriculum" covering principles of nutrition, personal hygiene, first aid, medical and dental care, mental health, rest and exercise, communicable disease control, environmental hazards, accident prevention, and worthy use of leisure time. Because of the motivational qualities of sports, many youth and adults are receptive to imposing the self-discipline necessary for faithful adherence to these principles, which usually is otherwise not so readily achieved. Sports participation then can serve advantageously as a laboratory for demonstrating

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meaningful relations of health to performance and functional living.

Certainly injuries do occur in sports, but not automatically. For example, not all quarterbacks or tackles suffer knee injuries. Therefore knee injuries are preventible, and the challenge is to define the causes and determine preventive measures for the eradication of these occurrences. The word "eradication" may sound extreme but it must be remembered that with all health problems, the ultimate objective is eradication. This should not imply that all injuries result from negligence or incompetency, but it does underlie justification of encouraging sports participation and of expecting continual evaluation. An example of a violation of this assumption is boxing in the school setting. Injury—cerebral injury at that—is the intent as well as the effect. No other sport can be so accused.

But how does this framework relate outside the school setting such as in professional sports? Simply to condone abuses to the health of the pro athlete because he is play-for-pay is equally unjustified. There is no distinction between the health needs of the old pro and the young high school lad; there is a distinction between known limitations and capacities. The best possible health care is needed for both. However, the respective sponsors of these two athletes are committed to different weighting of the four aspects of sports mentioned earlier to arrive at relative values.

Now that we have justified sports, let us now look at the various forces to be contended with, else they will erode the ideal and promote the abuse. The second umpire in our story had implied that such forces exist.

"I CALL THEM AS THEY ARE"

While expounding on the values of sports, administrators too often devote disproportionate budget, facility, time, and leadership to but a few at the expense of the vast majority who also would benefit from these values, each at his own level of readiness. Sports participation thus becomes a compulsion on the part of some because of the prestige afforded to the elect. Conversely, compulsion of another kind—in the form of deliberate reaction against varsity-type programs—appears in recreational sports. Too often the result is the absence of necessary safeguards such as the medical exam, progressive training, and good equipment, among other provisions usually found at the varsity level.

The elements of safeguards and risks have both absolute and relative implications to challenge our judgment. Certainly the prevention of major injuries is a vital concern, but what is considered minor in the medical sense may be major to the athlete whose competitive participation is affected. A sore shoulder may be judged as a severe blow to a football quarterback but the same sore shoulder belonging to a fan in the stands might hardly be noticed. Conversely, that which keeps the nonathlete on the shelf may be the same injury carried by an athlete into competition.

Impinging upon his natural sympathetic feelings for an injured human being is the coach's awareness that his game plans, and too often his job, hinge on the availability of his athletes. Both trainer and coach know that many different circumstances can reduce an athlete's effectiveness, if not remove him completely from the game. Moreover, these circumstances demand solid judgment on health matters unrelated to athletic risks as well. But for a particular athletic event, it means little to the record of the contest whether a sidelined star athlete was disabled by a broken leg or a broken heart, a case of hepatitis or a case of beer, the common sprain or the common cold. Still, the records of future contests are affected if each of these maladies does not receive prompt and proper care.

All these considerations are real to the coach and athlete whose careers hinge on the fickle spectator's sensitivity (or lack of it) to such matters. The winning-losing factor thus may create a temptation to subvert the medical supervision and to flirt with the built-in safeguards of sportsmanship and regulations governing play, and to try sensational and unqualified advice. Moreover, the desire of the coach to get the ill or injured athlete back into play as soon as possible is only kindled by the player's own ambition and perhaps fanned by parental, school, or community pressures to take a chance. Such overzealousness could result in self-diagnosis, self-medication, and undue exposure to serious injury.

One of the major problems for the trainer is the fact that he works with nature's rules that govern the physiology and pathology of his athletes, while the coach must account to man-made rules for the same specimens. As one quarterback put it, "I've never lost a game. Time just ran out on me a few times." The outcome of sports *is* an artificial process, terminated by some arbi-

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trary cutoff point, a result of some rationale of years ago. Yet where is the popular evaluation of those who use your athletes, call for the supreme effort, and suffer chance outcomes of well-conceived plans? On the scoreboard, at a particular moment in the contest when a piece of paper says it's time to call it quits. Fortunately, this form of evaluation has not affected the trainer yet.

This fact points to another extension of your influence afforded through coaches' meetings when you speak on conditioning, injury prevention, and first aid. The coach can handle or anticipate a problem only when he becomes aware of its significance or that it even exists. Perhaps this is what our third umpire had meant.

"THEY AIN'T NOTHING UNTIL I CALL THEM"

Abuses can exist without one's being aware of it, and sincerity is no safeguard. Teddy Roosevelt was known for his convictions. So was his pet bulldog who obviously was not as successful in his forays as his master. "He's not a very good fighter, is he?" observed a visitor once. "He's a very good fighter," the President replied. "He's just a horrible judge of dogs."

The amphetamines have been getting their due attention lately, largely because of the criminal acts associated with them. So, let us turn to a different type of drug which reportedly has shown its head in some quarters as an ergogenic aid in sports—the anabolic-androgenic steroids. The excuse is to gain advantage by stimulating growth or gaining weight through these drugs. Bypassing the legal question of peddling such drugs without prescription, or the ethical question of prescribing a drug for a healthy athlete in the quest of advantage in sport, what are the clinical concerns? Medical authorities warn that the effects are insidious and subtle. Moreover they differ in their effects during the stages of growth. While few controlled studies are reported that were designed to determine the total effect of these steroids in normal persons, the following can be expected: In prepuberty, the danger of decreasing the ultimate height is a real one, as bone maturation (with premature closing of epiphyses) is accelerated. Also, at all age levels, the drugs affect liver function. But for the adult male, what some may think the most serious of all side effects—decreased libido—may be expected. Testicular size and function evidently reverts to the prepubertal stage during the administration of these steroids. Finally, data being readied for publication by investigators who studied the effect of these steroids on performance indicate that these risks are taken to no avail.

The problem of ergogenic aids is certainly a real one for the trainer, because increased performance is a legitimate goal—if the development of one's natural resources is the means. On the other hand clinical drugs should be used only on prescription, and only when a clinical deficiency or illness is diagnosed by a physician. But remembering this umpire's admonition, "They ain't nothing until I call them;" the mystique surrounding readiness for competition intrigues the athlete as well, since it is his interpretation that counts. For example, the sugar pill supplied to the athlete as a pep pill in some ways is as bad as the peddling of amphetamine itself. As far as that athlete is concerned, the quality of his subsequent performance will be related to a "pep pill." Testimonials citing assorted gimmicks with which individuals explain the sudden or sustained prowess in athletics are accepted by many. The facts need to be communicated that none of these gimmicks is any more necessary for athletic success than the odorous practice of never changing underwear during a winning streak. In the quest for advantage, the laws of physiology are still applicable. Atheletes who rely on gimmicks to the exclusion of good understanding of conditioning and other aspects of readiness are the brittle athletes who are the headaches of coach and trainer.

But the quest for advantage takes other forms as well. In sports it is customary that any strategy to get out of meeting the proper opponent would be condemned as chicken. Yet, a major problem in high school athletics, according to the National Federation of State High School Athletic Associations, is the indiscriminate and extreme practices of keeping a boy's weight unduly low during this important stage of growth and development in order to make a lower weight division. The emphasis is on the words "indiscriminate" and "extreme."

Just as judgment perceives the negative, it gives confidence in the positive. The team physician and the trainer have a responsibility for encouraging continued participation of an injured athlete only when there is no risk to him or others due to his condition or impaired performance.

Most of you remember the 1963 pro football championship game when "Y.A." Tittle suffered a knee injury in the first half, only to return to

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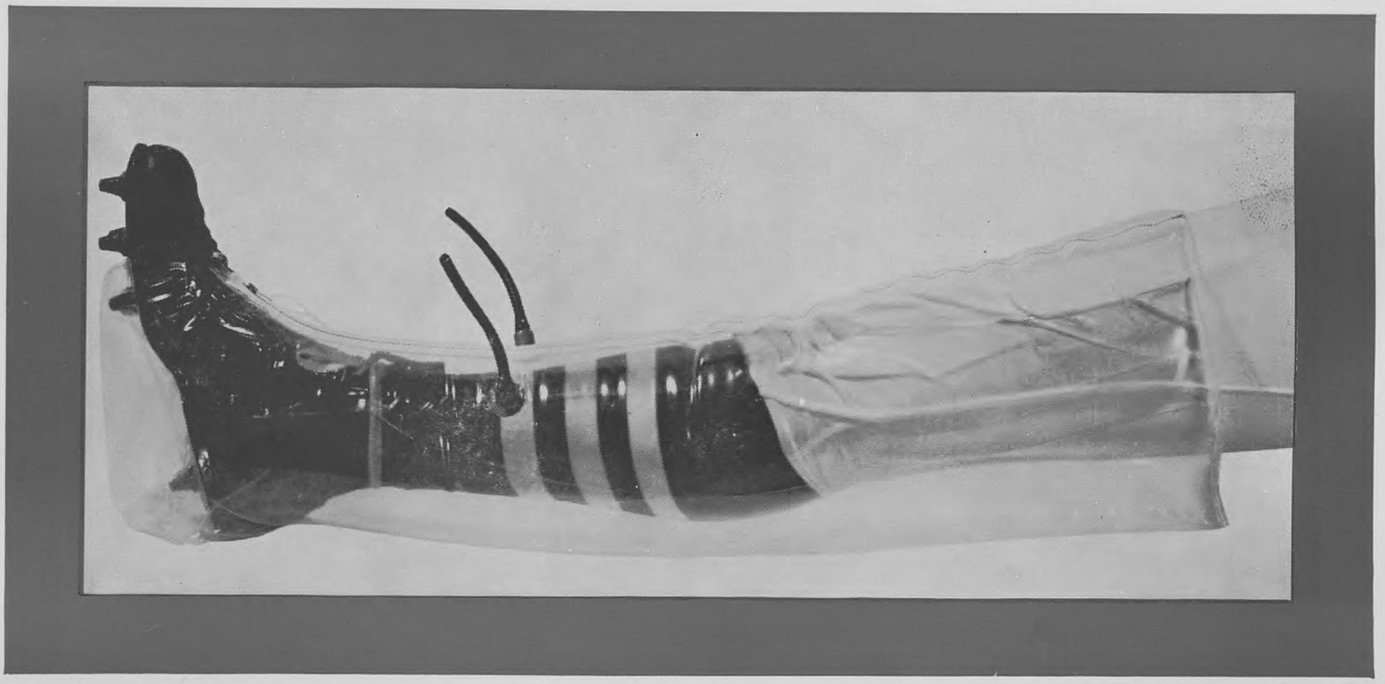

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play in the second half in a losing cause. One sports writer put it this way:

> "If you measure Tittle by what he accomplished Sunday . . . , no greater quarterback ever worked a playoff. . . . He left the field, dragging one leg, the tendons in the knee torn and twisted. That, you had to conclude, was the end of him. But they hit him with a big shot to diminish the pain, wrapped the leg up, and Tittle played the second half. . . . No one could have asked him to play. It was his decision alone. . . . He could have ducked it. Then they would have given him the pity they withhold because he would quit with the Giants leading, 10–7. He is a football player as the old dreamers of the press box imagined them to be."

Fortunately, later reports spiked these rumors and exonerated the Giants' leadership. The physician had given the OK to the coach after his examination of Tittle indicated a mild sprain that carried no additional risk, with proper taping by the trainer. No pain killer had been injected. The coach's decision to return Tittle was based on the sentiment expressed in the last line of the writer's column: "He's better than a lot of quarterbacks, even when he's playing on one leg." What a difference the criteria for returning Tittle to competition! And what significance when abuses do not exist, but legends persist that confuse abuse with nobility!

But given the same rumors from the initial reports, another syndicated sports columnist didn't interpret the story in like fashion. And I quote:

> "The millions who viewed the game witnessed not a miracle but a mockery. . . . Nobody doubts Tittle's courage. . . . But courage does not necessarily imply wisdom. . . . No race horse with a torn ligament, for example, would have been permitted anywhere near a starting gate. It's against the law. But there's no such law to protect human athletes. . . . It is time for the AMA and other groups particularly interested in the welfare of athletes to make a much bolder and firmer stand on this issue. And perhaps to set forth a set of medical Bill of Rights to safeguard the health of all individuals in competitive sports."

Well, the NATA is particularly interested in the welfare of the athlete and is aware that there is an AMA Bill of Rights for the Athlete. Perhaps we are not sufficiently vocal about it, but you can be sure we let the newsman know. The Bill asserts that participation in sports is a privilege involving responsibilities and rights. The athlete has the responsibility to play fair, to give his best, to keep in training, to conduct himself with credit to the team. In turn, he has the right to optimal protection against injury as this may be assured through sound, progressive training, good technical instruction, proper regulation and conditions of play, suitable protective equipment, and adequate medical supervision. The athletic trainer is concerned with all of these rights.

THE SIGNIFICANCE OF SPORTS QUACKERY

If all these factors are essential to safeguarding the athlete—any athlete—then anything sold or practiced in disregard of, or inferior to, or as an ineffective substitute for this protection is an abuse. In this regard, the association of quackery to abuses in sports is convenient. It serves as a vivid and forceful synonym of deceit. It carries a strong and tragic connotation of describing man's most vile crime—that of abusing the health of his fellow man.

In sports, quackery could not be isolated. If quackery does exist, it affects the lives of millions of sports enthusiasts and emulating spectators. The tragedies would therefore be of no little magnitude if:

(1) The athlete is duped into false security when exposed to known hazards with substandard safeguards;

(2) The athlete is duped into relying on or crediting his satisfaction to things other than the development of his natural resources;

(3) The athlete is duped into trying hazardous ergogenic aids;

(4) The already strained budget, school or personal, is further burdened with unessentials;

But the deepest tragedy is when (5) the deceit detracts from a lifetime appreciation for suitable sports activity and adherence to healthful living in general.

Consider a news clipping of last fall on the sport of hunting:

> "Wisconsin's deer hunters' death toll for the first three days of the nine-day season has risen to 15, but only two of the victims were killed by gunshot. . . . Thirteen others died after heart attacks brought about by exhaustion or excitement."

I wish we could know in what state of readiness these 13 felt themselves to be. All hunters assume the risk of gunshot wounds. They are not duped here. But were they sensitive to the vigors of hunting sufficiently to seek the medical exam recommended before the onset of a season for even our presumably healthy youth? Had some been duped by thinking naïvely, "Once an athlete, always an athlete"? Had some been duped by claims that a few seconds a day of static contractions made them fit for strenuous activity? Had some relied only on the consumption of one of the alphabets in the vitamin bottle for fitness?

While sports will change and new problems will crop up, basic principles of fitness will remain. They are simple enough, but they provide neither quick nor guaranteed results: That calories and nutrients count; that the athlete may eat more, but only more of the same things recommended for the spectator as well; that sports injuries go through the same stages of repair during healing as injuries incurred on the way home from the game; that nothing less than good, old, sweaty, endurance-type exercises develop the efficiency of the heart and lungs; that research is done to learn something, not to prove anything; that research findings need corroboration by independent investigators before their value and limitations can be determined; that fitness is preventive medicine for participation in active life and sports; that confidence in the principles of health and fitness plus periodic medical evaluations will yield whatever sports path to fitness is suitable for the individual.

THE TRUE TEST OF SPORTS

In 1912, over 50 years ago, the following quotation appeared in AMA's book *Nostrums and Quackery*:

> "Quackery does not die easily. Exposures of the frauds perpetrated by the quack . . . do good only to the extent that such exposes educate the public. When the veil of mystery is torn from the medical faker, the naked sordidness and inherent worthlessness that remain suffice to make quackery its own condemnation."

The true test of a sports experience may just be whether or not the athlete or ex-athlete can strip the veil of mystery from the fitness quack. He certainly should have had every opportunity to learn that there is no hocus-pocus in mental or physical readiness in any sport; that an athlete is merely a human being, vulnerable to defeat and injury, yet capable of bouncing back; that he need not be a food faddist, physical culturist, hypochondriac, or professional athlete to become healthy and fit.

If one wants to emulate the star athlete, remind him that the good ones accentuate year-round conditioning and perfection of fundamental skills. Remind him that those who endure have gone through a tremendous screening process of durability and have gained a sharp awareness of their limitations as well as capacities. Remind him that these are mortals who have developed and utilized their exceptional talents to an exceptional degree, with exceptional diligence. Remind him that pro, college, high school, pre–high school, and adult weekend athletes have the same health needs, but that the specimens are different. Then this emulation factor can be a positive influence.

THE CONTRIBUTION OF A PROFESSION

In reviewing the NATA's recommendations for athletic training education, I quickly noted that the trainer is well aware of the nature of a profession: that is, it attracts those who have an altruistic goal of rendering an important service to others, who accept a never-ending obligation to study the body of knowledge required for suitable application of this service to man, who possess a high degree of professional discipline for self-enforcing the code of ethics that preserves the concepts of your service, and who consider as their reward work achievement with respect to the goals of the profession rather than pointed personal interests.

The members of the AMA Committee on the Medical Aspects of Sports have long valued a mutually satisfying relationship with your representatives with respect to the advancement of health supervision of our nation's athletes. They have commended upon several occasions your program to raise the professional standards of athletic trainers.

Sports participation is often the first and certainly a most influential occasion for youth to experience a functional association of health theory with practice. If you have contributed to making this experience meaningful as a pattern for living a lifetime, you will have made your greatest contribution.


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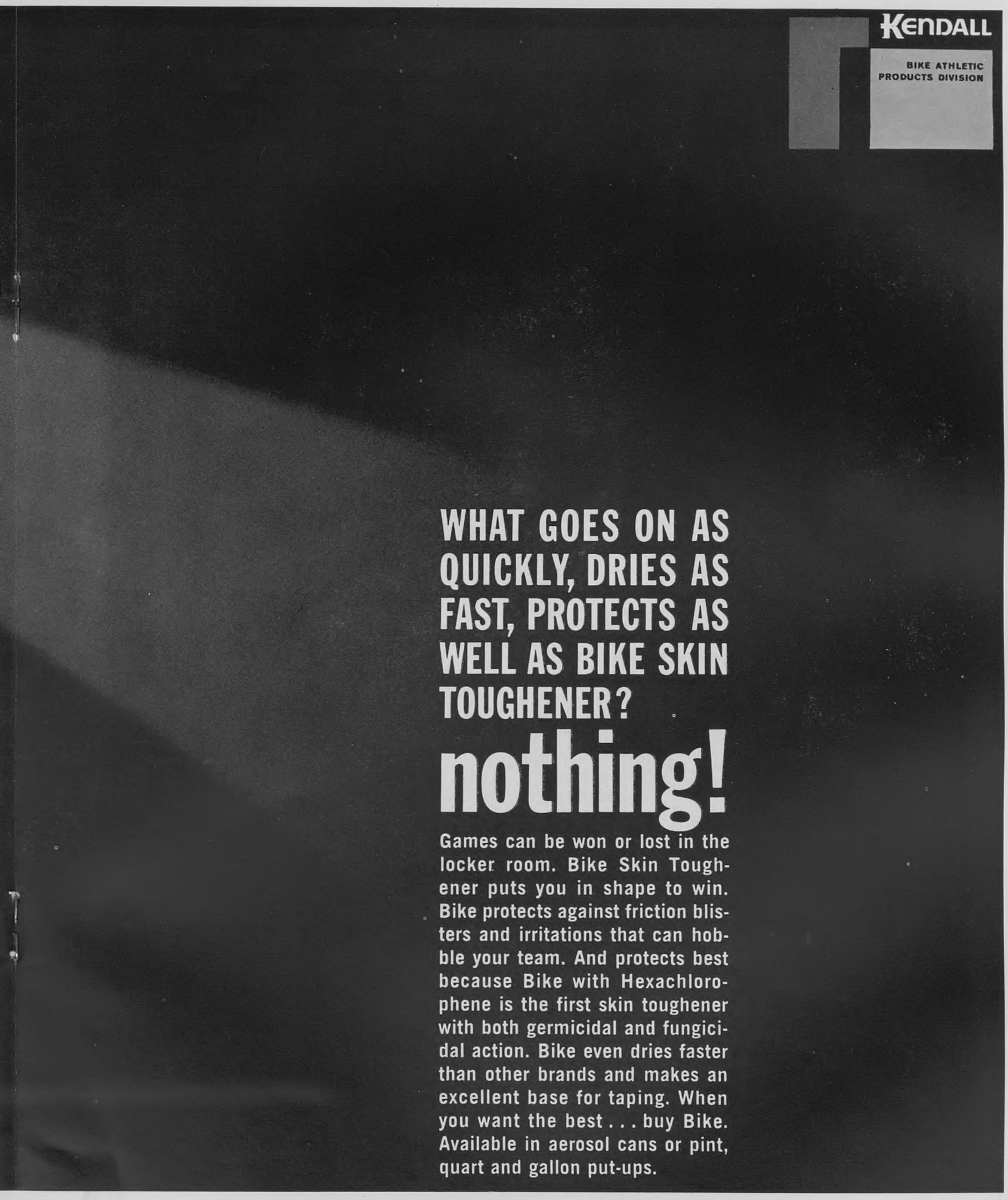
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1965 NATIONAL CONVENTION HONORS

CERTIFICATES of honorary NATA membership were presented at the 1965 Convention to three men long associated with the profession: (left to right) Fred V. Hein, director of the AMA's Department of Community Health and Health Education; O. B. Murphy, M.D., Lexington, Kentucky, orthopedic surgeon, who is chairman of the AMA's Committee on Medical Aspects of Sports; and Chuck Burhard, of Santa Barbara, California, retired veteran athletic sales representative for Johnson & Johnson. Presenting the honorary membership certificates is Wisconsin Trainer Walt Bakke, chairman of the NATA Honorary Committee. The gentleman with his back to the camera is Jack Cramer of Cramer Chemical Co.

Dr. Hein, who holds a Ph.D. from the University of Wisconsin, is concerned with all aspects of health education, but, in his work as an educational consultant, pays particular attention to school and college health education programs. He is secretary of the AMA's Committee on the Medical Aspects of Sports, a post held since the early development of this group. He is also secretary of the newly appointed AMA Committee on Exercise and Physical Fitness. He is a former president of the American Academy of Physical Education.

Dr. Murphy played varsity football for the University of Kentucky before graduating in 1934, then went on to earn his M.D. at Vanderbilt. He served with the U.S. Army Medical Corps from 1939 through 1945, and has been practicing orthopedic surgery in Lexington since that time. He is a member of the School Health Committee for the Kentucky State Medical Association and the Governor's Council on Physical Fitness. He is team physician for the University of Kentucky.

C. F. Burhard, better known as Chuck, joined Johnson & Johnson in May of 1947 as an athletic representative, and subsequently helped to spark creation of Johnson & Johnson's Athletic Division. In 1960 he was transferred to the west coast, and was active in athletic sales work there until his retirement last year.

THESE EIGHT trainers were honored by the Helms Athletic Foundation Hall of Fame for "noteworthy achievement in athletic training." Awards were made at the 1965 national convention by George F. Sullivan, athletic trainer at the University of Nebraska, who serves as chairman of the Helms Hall of Fame Selection Committee for the NATA. Those honored, front row, left to right:

Frank E. Medina, University of Texas; studied at Haskell Institute, St. Mary's (California), and Texas; in addition to Longhorn teams, he has served as a trainer with Haskell, Arizona State, and St. Mary's, and with the 1948 U.S. Olympic team, the 1958 and 1959 U.S. national track and field teams, and the 1964 Turkish Olympic teams; member of the Texas Governor's Commission on Physical Fitness; and consultant for the President's Council on Physical Fitness.

A. C. "Whitey" Gwynne, West Virginia University; a 1934 graduate of UVW, where he was a varsity wrestler and later wrestling coach; has been a trainer at UVW since graduation, except for Navy duty during World War II; named head trainer and assistant professor of education after the War; trained the U.S. basketball team in the 1963 Pan American Games and world championships, and last year toured Europe with a State Department–sponsored team; a charter member of NATA, in 1958 was chairman of the Board of Directors, and is a member of the Committee for the Professional Advancement of Training.

Jules Reichel, Syracuse University: a member of the Orange athletic staff since 1931, two years after becoming a registered nurse; took time out during World War II for service in Navy preflight schools and with the Army to teach training; named head trainer at Syracuse in 1947; also trained the 1960 U.S. Olympic boxing team; a past director of NATA District Two, now chairman of the Committee on Constitution and By-Laws.

Ed Wojecki, Rice University; studied (and served, concurrently, as a trainer) at Howard College and Louisiana Tech, where he earned a B.S. degree in 1936; also studied gymnastics in Poland; was trainer and a PE instructor at Louisiana Tech until leaving for World War II service with the Navy preflight program; joined the Rice staff in 1945 as head trainer and assistant instructor; head trainer for the 1952 U.S. Olympic team; in 1954 was NATA public relations director, in 1956 chairman of the Board of Directors.

BACK ROW, LEFT TO RIGHT

Edward G. Zanfrini, Princeton; joined the Tiger athletic staff in 1933, became head trainer in 1938; spent three years at Dartmouth when Princeton suspended intercollegiate athletics during World War II; has been a trainer for many U.S. Olympic teams—soccer and basketball in 1952, all U.S. teams at the 1956 and 1960 Winter Olympics, and for the U.S. hockey team at the 1964 Games; in 1955 was trainer for U.S. boxing and track teams at the Pan American Games.

Arthur Dickinson, State College of Iowa; won 10 letters in basketball, baseball, and track at State College of Iowa before graduating in 1917; returned to his alma mater in 1924 as head athletic trainer and track coach, posts he held for 37 years; retired in 1963 as professor emeritus of physical education; in that year the 41-year-old State College of Iowa Relays were renamed the Arthur D. Dickinson Relays; an NATA national director, 1958–59.

Lloyd "Snapper" Stein, University of Minnesota; studied at Hibbing Junior College and Minnesota, where he was an outstanding lineman for the Golden Gophers, 1929–30–31; joined the Minnesota athletic staff as freshman trainer in 1933, two years later became head trainer, a post he has held continuously except for wartime service with the Navy preflight program.

Walter B. Bakke, University of Wisconsin; chief Badger trainer since 1936, before that spent six years in a similar post at Ohio State and one year as an assistant trainer at University of Illinois, his alma mater; while at Ohio State served during summers as trainer for the Columbus Redbirds of the American Association, and during the "Gas House Gang" era spent a spring training session as a substitute trainer with the St. Louis Cardinals, Columbus' parent club; trainer for the 1960 U.S. Olympic Team in Rome.

SYNOPSES OF ADDRESSES AT THE CONVENTION

NUMEROUS INTERESTING presentations of fact and theory highlighted the three days of the NATA national convention in Chicago in July. Brief synopses of some of the points made by several of the speakers are given here for members who were unable to attend:

Physical and/or Mental Basis for Restriction in Athletics—Dr. James S. Feurig, *Director of Student Health and Team Physician, Michigan State University:*

The athlete must be evaluated both physically and psychologically, and specifically for each sport in which he participates.

Some of the physical reasons for restriction are congenital or traumatic muscular-skeletal defects, marked discoordination, hernia, metabolic and digestive problems, chronic disease, obesity, respiratory problems, uro-genital problems, cardio-vascular problems, nervous system conditions (epilepsy, concussion history, etc.), vision problems (retina, one eye, glaucoma, low acuity, etc.), and ear problems (chronic infection, perforation, cauliflower, etc.).

Among the mental reasons for restriction are lack of motivation or technical sense, fear (of error as well as of contact), uncontrolled aggressiveness, and serious personal problems not related to athletics.

Establishing the Proper Airway in Athletic Emergencies—Dr. L. W. Combs, *Director of Student Health and Team Physician, Purdue University:*

Dr. Combs discussed a spring practice football fatality at Purdue, in which a player suffered both respiratory and cardiac arrest due to cervical concussion. He pointed up the possibilities of cardiac massage and establishing an airway (even though in this case they could not have saved the athlete, these techniques should be familiar to all trainers).

Further coverage of Dr. Combs' talk will appear in the December issue of *The Journal.*

The Shoulder in Athletics—Dr. James F. Bateman, *Orthopedic Surgeon, Toronto, Ontario, Canada:*

Dr. Bateman reviewed the anatomy of the shoulder, its mechanics, and the diagnosis of lesions. He illustrated by means of slides many of the injuries that occur commonly in different sports, and why, and how to spot some of the more subtle ones. He emphasized that a sound knowledge of shoulder mechanics is important to the trainer.

Diagnostic Procedures, Surgical Follow-up, and Rehabilitation—Dr. John P. Fotopoulos, Dr. Howard J. Sweeney, Dr. Joseph A. Tarkington, and Miss Mary B. Morton (Chief of Physical Therapy), *Evanston Hospital, Evanston, Illinois:*

Members of the panel discussed primarily wrist, ankle, knee, and neck injuries, and the rehabilitation of injured athletes after initial treatment.

In regard to neck injuries, Dr. Tarkington spoke of the importance of conditioning and proper protective equipment. He emphasized that before attempting to move an athlete suspected of having a cervical injury, traction on both head and feet is vital. He also warned that mouth-to-mouth resuscitation in such cases, when it means even slight movement of the head, can be extremely dangerous.

Dr. Sweeney noted the importance of the doctor-trainer relationship in knee injuries, particularly when the trainer has made the first on-the-spot observation of an injury and must convey to the doctor precisely what conditions he observed.

Miss Morton discussed traction, crutches, other aids, and exercises in her coverage of rehabilitation. She pointed out that traction is most effective when the patient is made as comfortable as possible, and thus is able to relax.

A Study of Pain—Lloyd Stein, *Trainer, University of Minnesota:*

Pain means something different to each individual. It is one of nature's warnings that something is wrong physically, yet it may have a residual effect in some individuals long after the physical problem has disappeared.

The trainer's function is to recognize the physiological and psychological aspects of pain, to alleviate it (sometimes suggestion is more effective than any physical therapy), and help the athlete to return to normal activity as soon as he is able to do so without endangering himself.

Nutrition in Athletics—Dr. Donald L. Cooper, *Oklahoma State University:*

There has been an increasing amount of scientific work in this field. One thing that recent research would seem to indicate is that a protein-heavy diet is not the best answer for athletes. Protein should be part of a balanced diet, but certainly not the dominant part.

In the final analysis, it is not protein that is burned up in the expenditure of effort, it is the simple sugars and phosphates. Protein has to be converted to these elements, and in the process there is produced a residue of acid which can only be excreted by the kidneys. During exercise, effective kidney function ceases, preventing the loss of acid by this route. Thus, increased acid builds up in the muscles, resulting in fatigue and often in cramps.

On the other hand, in the metabolism of fats and carbohydrates the main acid produced is carbon dioxide, which can be blown off by the lungs and excreted through the skin.

It is easy to see, therefore, that the athlete who eats a large steak, eggs, or other proteins in quantity before a contest can expect more trouble with fatigue and acidosis than one who eats food primarily in the carbohydrate family.

While it has been said many times before, it bears repeating that a proper diet of *three meals a day* helps both mental and physical efficiency. Skipped breakfasts and hit-or-miss lunches are a hindrance. Research has shown that four or five meals a day may be slightly better than three, but that there is marked difference in efficiency when the three-meal pattern is cut to two meals.

When endurance is a major factor, pre-contest meal planning ought to encompass as much as 48 hours in advance. For short, all-out effort events such as the shotput the pre-contest meal may not mean much (provided, of course, that it does not include irritating or "gassy" foods). Foods should be bland, non-greasy, easily digestible. Low-residue diets are desirable before competition.

A critical point in nutrition is that for 48 hours prior to competition the athlete's workouts should be canceled or markedly curtailed. This allows the muscles to recover "snap," and permits the liver specifically and the body generally to rebuild glycogen reserves.

The main bulk of evidence indicates that possibly the B-complex vitamins may be of some value, but if a person is getting a well-balanced diet he probably will just excrete surplus vitamins. They may be of some psychological value.

Crash diets and dehydration to "make the weight" are to be condemned. They are particularly dangerous for younger age groups, who need nutrition for growth as well as for competition. Kidney and liver damage are a risk.

Evaluation and Treatment—Dr. Donald R. Lannin, *Orthopedic Surgeon and Team Physician, Minnesota Vikings Football Club:*

A big problem in evaluating treatment is that we are dealing with patients with different levels of motivation. We have no precise way to evaluate drive and ambition, and these are most important to the improvement of the patient.

Family doctors and trainers generally are too close to their patients to be able honestly to evaluate their treatment. They are afraid of hurting each other's feelings.

An obstacle to the evaluation of treatment is the subjective approach of the patient to the medication he is given. If the pill looks like an aspirin, even though it isn't, the patient may not give an objective answer as to its effectiveness.

Since drugs don't always act the same way, because of different patient tolerances that we cannot measure, we can't be sure we are properly evaluating a given treatment.

One should change his thinking and treatment by evolution, not revolution. Nothing is ever so great that it utterly displaces, overnight, what heretofore has been helpful.

Psychology is important. The good trainer ought to know when to run an athlete out of the training room and when to mother him.

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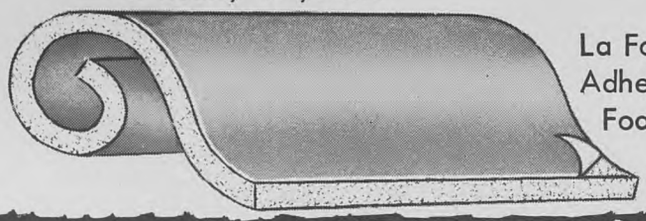

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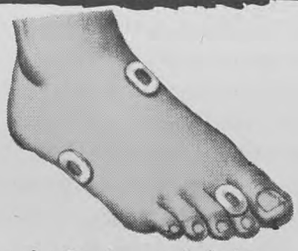

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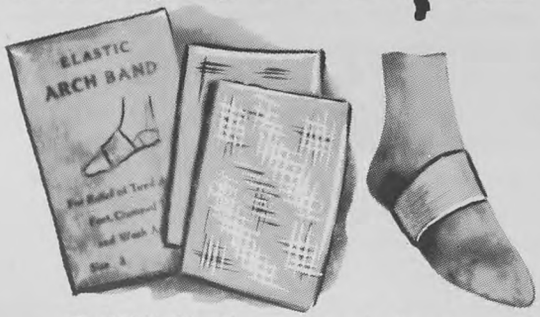

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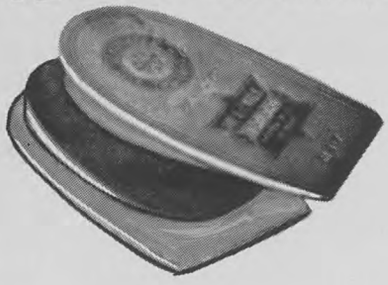

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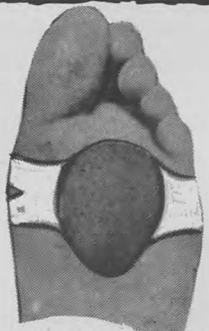
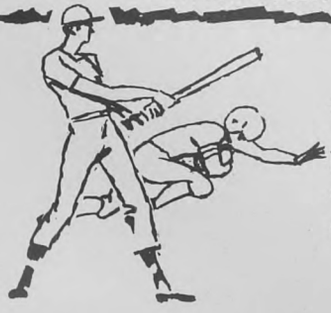


Elastic Met-Band



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HOW THE ARMED FORCES COPE WITH HEAT

The Wet Bulb Globe Temperature Index can pinpoint temperature danger levels; old reliable salt helps boost heat resistance.

HEAT IS A PROBLEM! Heatstroke is the leading cause of death among athletes, with the exception only of the traumatic manifestations resulting from injuries. Heat is a major factor behind decreased physical as well as psychological performance by athletes.

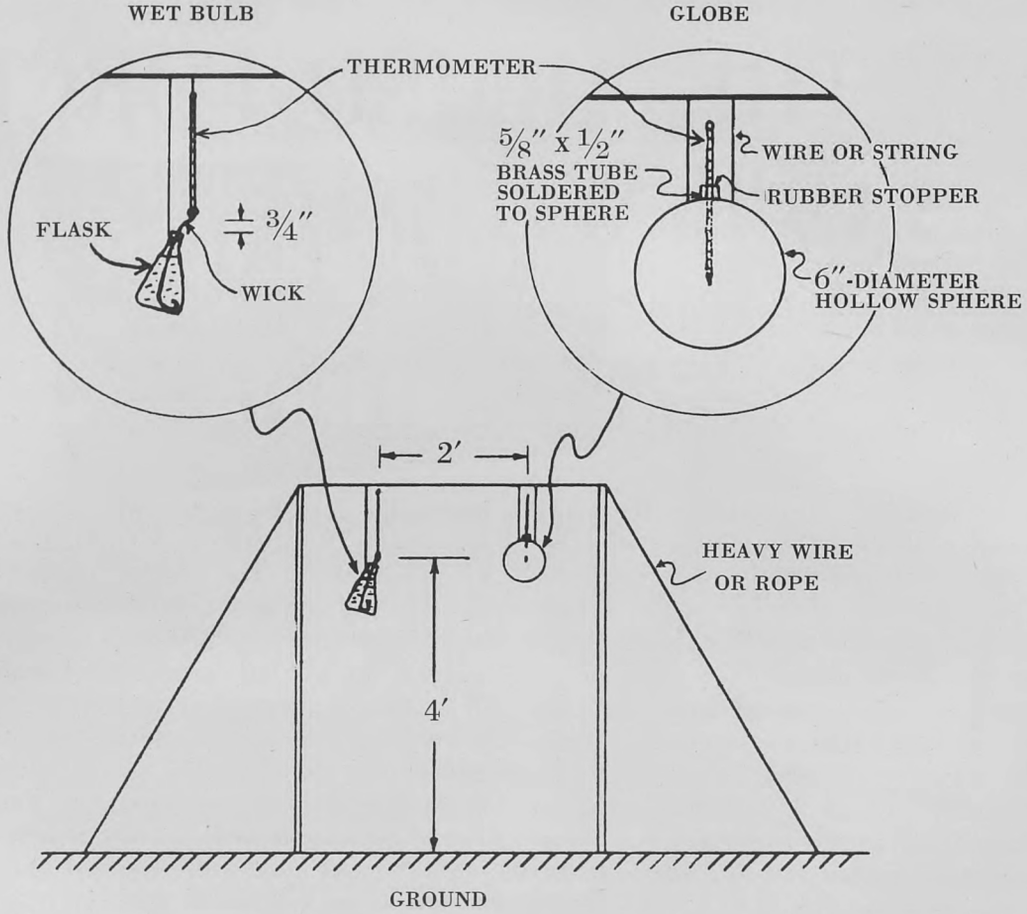
During the late summer and early autumn preparation for the autumn season of athletic competition, the athlete is particularly vulnerable to the extra stress imposed by high temperatures. It is, therefore, extremely important for those responsible for the health and well-being of the athlete to understand how to cope with this problem—to prevent heat injury by increasing the resistance of their charges, and by knowing how to determine when the environmental temperature has reached a dangerous level.

This has long been a problem recognized by the armed forces, and they provide medical personnel with detailed instructions about how to cope with high temperatures. Much of the military approach seems applicable to the trainer and the athlete.

What follows—including the drawing—is reprinted from *The Etiology, Prevention, Diagnosis, and Treatment of Adverse Effects of Heat*, a joint Army, Navy, and Air Force publication (Army Technical Bulletin MED 175, Navy Publication NAVMED P-5052-5, and Air Force Pamphlet 160-4-1, dated August 7, 1957):

Exposure to high environmental temperature produces stress on the body which may lead to clinical manifestations and disability. . . .

Four basic factors that determine the degree of heat stress exerted by the environment are air temperature, vapor pressure or relative humidity, air movement, and heat radiation. The air temperature is read from the ordinary dry bulb thermometer. This reading is affected only by the air temperature. The relative humidity is determined from the dry bulb temperature and wet bulb temperature by reference to psychrometric tables. The wet bulb temperature is the reading of the thermometer when the bulb is covered with a wet wick and when a strong current of air is passed over the wick. The amount of heat lost by the bulb under these conditions, and thus the reading of the thermometer, is affected by both temperature and humidity. The wet bulb temperature is always below the dry bulb temperature except when the relative humidity is 100 percent, at which point both temperatures are equal. The air movement is usually determined by an anemometer which records only the linear air movement and not the fluctuating currents. The radiant heat can be determined by a globe thermometer or by a radial meter. The globe thermometer, which is the simpler instrument, consists of a 6-inch hollow copper sphere painted matte black, with an ordinary thermometer inserted so that the temperature at the center of the sphere can be recorded. The mean radiation intensity (heat radiation) is determined from the difference between this globe temperature and the air temperature with allowance for air velocity. Because of the difficulty in recording all four of these measurements and combining the readings into a single index as a measure of overall heat stress for man, usually only the dry and wet bulb temperatures have been used. The dry bulb temperature is, in general, a poor indication of thermal stress because it is not affected by humidity, air movement or radiation. The wet bulb temperature is a better index since it includes the humidity factor as well as the air temperature. For example, work which



FIELD APPARATUS FOR WBGT INDEX

is relatively easy at a dry bulb temperature of 96° F. with a relative humidity of 50 percent (80° F. wet bulb) becomes impossible at the same dry bulb temperature as the relative humidity approaches 100 percent (96° F. wet bulb). At a given wet bulb temperature, the dry bulb temperature can vary over a wide range without much physiologic or psychologic effect on an individual. However, the wet bulb temperature is not a good index of the heat stress imposed upon individuals exposed to the sun. Air movement also is not taken into account in these measurements. Many attempts have been made to devise a single index combining all four of these factors which is simple and can be used without elaborate equipment or training of personnel. No such composite index has been generally adopted. Recent investigations suggest that the Wet Bulb Globe Temperature (WBGT) Index . . . may provide such a standard.

The WBGT Index is computed from readings of (1) a stationary wet bulb thermometer exposed to the sun and to the prevailing wind, (2) a black globe thermometer similarly exposed, and (3) a dry bulb thermometer shielded from the direct rays of the sun. All readings are taken at a location representative of the conditions to which men are exposed. The wet bulb and globe thermometers are suspended in the sun at a height of 4 feet above ground. A period of 30 minutes should elapse before readings are taken.

The wet bulb thermometer is a standard laboratory glass thermometer with its bulb covered with a wick (heavy white corset or shoestring). The wick dips into a flask of clean, preferably distilled, water. The mouth of the flask should be about three-fourths of an inch below the tip of the thermometer bulb. The water level in the flask should be high enough to ensure thorough wetting of the wick. The water should be changed daily after rinsing out the flask and washing the wick with soap and water. To avoid erroneous read-

ings, the water and wick must be free of salt and soap.

The globe-thermometer apparatus consists of a 6-inch hollow copper sphere painted flat black on the outside and containing a thermometer with its bulb at the center of the sphere. The thermometer stem protrudes to the outside through a rubber stopper tightly fitting into a brass tube soldered to the sphere. The sphere has two small holes near the top used for suspending the sphere with piano wire. The globe must be kept dull black at all times, free of dust or rain streaks, by dusting, washing, or repainting if necessary.

The WBGT Index is computed as follows:

WBGT = 0.7 wet bulb temperature
+ 0.2 black globe temperature
+ 0.1 dry bulb temperature (shade)

Proponents of the WBGT Index have proposed the following as a standard for application of the Index. It should be emphasized that the measurements must be taken in a location which is the same as, or closely approximates, the environment to which personnel are exposed.

When the WBGT Index exceeds 80°, discretion should be used in planning heavy exercise for unseasoned personnel.

When the WBGT reaches 85°, strenuous exercises . . . should be suspended in unseasoned personnel during their first 2 weeks of training. At this temperature training activities may be continued on a reduced scale after the second week of training.

Outdoor classes in the sun should be avoided when the WBGT exceeds 85°.

All physical training should be halted when the WBGT reaches 88°. Hardened personnel, after having been acclimatized each season, can carry on limited activity at WBGT of 88° to 90° for periods not exceeding 6 hours a day.

Successful prevention of adverse effects of heat depends largely on education of personnel, including the personnel exposed to heat, and especially those charged with the supervision of such personnel. Specifically, prevention of heat injury involves the application of measures for increasing the resistance of exposed persons and reducing the exposure as much as practicable. Resistance is increased by replenishing [salt loss from the body as it occurs]. . . .

In addition to water, sodium chloride also is lost in the sweat. While the diet ordinarily contains an adequate amount of salt, additional salt should be provided during the first few days of exposure to heat in the case of unacclimatized individuals in whom salt losses are greater than after acclimatization. Among acclimatized individuals the need for added salt varies. Persons in the older age groups tend to retain excess salt in the body, their need for additional salt after acclimatization thus being less than those in the younger age groups. However, under heavy heat stress when sweating is excessive, intake of additional salt by the acclimatized individual is indicated.

A convenient way to provide adequate salt to large numbers of personnel is to salt all drinking water to a concentration of 0.1 percent. This can be done as follows:

(1) 1 pound table salt to 100 gallons of water.

(2) 0.3 pound table salt to the Lyster bag (36 gallons).

(3) One-fourth teaspoonful table salt (or if available two 10-grain plain salt tablets) to each quart of water.

Note. *Plain salt tablets contain cornstarch as a disintegrating agent. The* ***plain*** *salt tablet should* ***not*** *be ingested directly since it disintegrates within 2 minutes and salt in concentrated form is not readily absorbed and may cause gastro-intestinal disturbance.*

Instead of the above 0.1 percent, saline solution, impregnated salt tablets may be ingested. Impregnated salt tablets have a membranous structure which prolongs disintegration so that about half the tablet is dissolved after 45 minutes and the rest over a total period of 3 hours. Accordingly, one impregnated salt tablet provides a more or less even availability of 10 grains of absorbable salt over a 3-hour period. Excess intake of salt should be avoided since it may cause increased thirst and intestinal disturbances. Unless men are sweating continuously or repeatedly they do not require extra salt. Extra salt in the cooking, in the bread and on the plate coupled with sound training will meet most usual requirements. When water supplies are restricted, salt in excess of that present in food is contraindicated. When food intake is restricted, salt must be provided by other means.

SURVEY SHOWS UP LACK OF PHYSICAL EXAMS

PART II

By Allan J. Ryan, M.D.
Practicing Surgeon, Meriden, Conn.

In the June issue of *The Journal* we presented the model forms for physical examination of athletes which have been developed through cooperative effort by the NCAA, the NAIA, and the Committee on the Medical Aspects of Sports of the American Medical Association. With the forms, there has also been developed a detailed "Guide for the Examining Physician," which attempts to direct his attention to certain critical observations to be made during the examination:

GENERAL INFORMATION

It is expected that a history has been taken and a physical examination performed on the student before he or she enters college. These were done from the standpoint of establishing the candidate's general state of health and fitness to undertake the course of study. Participation in a program of intercollegiate athletics requires, generally speaking, a much higher degree of physical fitness than that necessary for ordinary college activity. It is, therefore, necessary to make certain examinations and assessments which are not ordinarily included in a general physical examination. In some instances these may duplicate examinations already performed, but, since the requirements will be more exacting, each part of the examination may be more searching.

Injuries may be expected to occur in sports activities, no matter how carefully the activities may be conducted. Some injuries and other misfortunes may be the result of unrecognized physical and health problems. The majority of the problems which might cause such a result can be identified by the careful performance of the examination which is outlined for you.

LEGAL RESPONSIBILITY

There appears to be no reason why the risk of legal liability for a physician who undertakes the medical supervision and care of members of a school athletic team should be any different from that of a physician in any other branch of practice. In fact, a careful examination of reported court decisions and inquiries to a number of attorneys for the state medical societies have failed to disclose any suits arising out of the medical supervision of school or college athletic teams, or the treatment of injured student athletes at the scene of injury. Similarly, no record has been found of any case in which a physician has been sued because of emergency medical care given at the scene of an accident.

Of course, a team physician should conform to the standards of good medical practice in his community. If he undertakes to determine the fitness of a team member to participate in athletic activities, he should be careful not to give any guarantees or assurances that it will be safe for the team member to so participate. It is better for him to confine himself to a statement of whether or not participation is medically advisable. Except for first aid or emergency care which is reasonably necessary to save life or limb, the team physician should not undertake medical treatment of a minor without the prior consent, either express or implied, of the parent.

MEDICAL AND PERSONAL HISTORY

It is suggested that the medical and personal history be reviewed by the physician prior to his examination, since it may suggest certain areas which will require particular attention. He may also want to supplement the information given by asking questions which will throw further light on

the situation. Memory is frequently faulty, and the history given may not correspond with the findings on examination.

It is considered advisable that all participants in intercollegiate sports activities shall have been previously immunized with tetanus toxoid and polio vaccine.

CONTRAINDICATIONS

Medical contraindications to participation in certain sports must be respected. This is particularly true in the case of so-called "contact" sports (football, soccer, basketball, ice hockey, wrestling, lacrosse, baseball, and others). Some of these contraindications are absolute and uncorrectable. They are as follows:

1. Loss of function of or absence of one of a set of paired organs, such as an eye, hearing in one ear, a lung, a kidney, or a testicle.
2. Hemophilia.
3. Marfan's syndrome.
4. Previous fracture of cervical spine.
5. Previous serious or repeated brain injury with or without skull defects.
6. Previous radical mastoid surgery.
7. Organic heart disease with any functional deficit.
8. Previous surgery for congenital or acquired heart defects with the exception of ligation of patent ductus arteriosus.

Contraindications which may be correctable so so that they no longer will prevent competition are:

1. Blood pressure which remains above 140 systolic and above 90 diastolic on repeated examinations at rest.
2. Hernia.
3. Hydrocele.
4. Chronic infections, such as osteomyelitis, tuberculosis, etc.
5. Hemorrhoids.
6. Large varicosities in lower extremities.
7. Hepatitis.
8. Infestious mononucleosis.
9. Congenital or acquired disabling back disorders.
10. Hyperthyroidism.

Certain conditions which may be contraindications for some individuals may not be for others if effective control has been established over a long period of time. These are especially epilepsy and diabetes. Each case calls for individual evaluation.

Certain conditions will be contraindications only to certain sports, such as a history of repeated sinus or ear infections in aquatic competition. To list all the possibilities would make a very large list. If the examiner is unfamiliar with the requirements of any particular sport for which the candidate may be being examined he should refer to books which list the medical hazards of each competitive sport.

THE PHYSICAL EXAMINATION

1. *Body Type.* The basic classification of Sheldon is used. Better than 70 percent of athletes at the competitive level fall into the mesomorph category. Many ectomorphs may make good athletes but many do not do well in contact sports.
2. *Posture.* One of the important reasons for identifying poor posture in the athlete is that those with a lordotic posture are more inclined to chronic back disorders. Asymmetrical postures may be a clue to other physical defects.
3. *Height.* Measure without footwear in feet and inches.
4. *Weight.* In underwear only and record in pounds.
5. *Blood Pressure.* Measure while lying down.
6. *Pulse.* Measure while lying down. If irregular, state nature of irregularity as, "extra systoles," "sinus arhythmia," etc.
7. *Vision.* Use standard Snelling chart, testing each eye separately, and record as /20. Use any standard color vision test, checking both eyes together. Extreme myopia predisposes to retinal detachment. Indicate if contact lenses are used.
8. *Skin.* Scars may reveal previous injury or surgery not given in the medical history. Any pustular eruptions should be cleared up before athletic competition. Ichthyosis is a contraindication to competition requiring prolonged and intensive effort where cooling of the body is a critical factor. Fungus infections of the feet should be cleared up before competition.
9. *Ears.* Presence of so-called "cauliflower" ear should be noted in case of future injury and possible insurance claim. Chronic external otitis is a contraindication to swimming. Presence of a perforated eardrum requires further evaluation.

Check hearing with watch tick and record distance from ear where sound disappears.

10. *Eyes.* Unequal pupils may indicate previous central nervous system injury or other disease. It is important to notice any muscle weakness, particularly of the lateral rectus muscle for future reference in case of subsequent injury. If one eye is missing or totally blind, this is a contraindication to contact sports. Totally blind individuals may do well in sports such as wrestling or swimming.

11. *Nose.* Note any evidence of deformity from previous fracture. Check particularly for obstruction of the airway due to polyps, septal deviation, etc.

12. *Mouth and Throat.* All missing teeth should be noted. Decayed teeth are easily fractured in contact sports and should be filled or removed. The presence of many broken or decayed teeth favors the occurrence of fractured jaws in contact sports. All dentures should be noted. Small removable dentures should fit securely. Presence of very large tonsils or adenoids may obstruct the airway. Chronically infected tonsils should be removed before athletic competition.

13. *Neck.* Strength in the neck muscles is important in contact sports. A large neck with weak musculature is a poor risk unless strengthened by exercise. Presence of enlarged lymph nodes requires a search for the cause. This may be the only physical sign of mononucleosis or leukemia. All enlargments of the thyroid should require further investigation.

14. *Chest.* Inadequate expansion may indicate poor vital capacity or other lung disorder as well as lack of muscular development. Severe degrees of funnel chest may contraindicate strenuous sports because of often-impaired cardiac function. Gynecomastia may pose psychological problems for the adolescent male in the locker rooms.

15. *Lungs.* Presence of rales or wheezes or absence of normal breath sounds requires further investigation.

16. *Heart.* Enlargement may be expected in the trained athlete. Presence of any organic murmur requires thorough evaluation before any competition is allowed. Record functional murmurs, if present, and location.

17. *Abdomen.* Enlargement of the spleen is never normal. It may indicate mononucleosis, leukemia, or many other disorders, all of which are disqualifying from vigorous or contact sports. Apparent enlargement of the liver is not necessarily abnormal, but should be recorded and investigated. The presence of inguinal, femoral, or umbilical hernia is disqualifying from contact sports until it has been corrected.

18. *Spine.* Severe scoliosis impairs normal pulmonary function and may be aggravated by vigorous exercise until it is stabilized by fusion. Lumbar lordosis should alert the examiner to the possibility of congenital conditions, such as spondylolisthesis, and acquired ones, such as rupture or degeneration of the intervertebral disc. Limitation of motion may indicate severe arthritis. Pilonidal sinus openings or swelling should be looked for in case of future trouble. Presence of an active sinus requires correction.

19. *Genitalia.* It is important to be sure that both testes are present and of normal size. Undescended testicles should be placed in the scrotum, if normal, or removed before contact sports. External examination only should be the rule for females, except for those who are married. The latter should have a regular pelvic examination, and any abnormalities recorded.

20. *Rectum.* Presence of large hemorrhoids is not an absolute contraindication to sports except for wrestling and weight lifting.

21. *Extremities.* Evidence of previous injury to the extremities (including the shoulders) is most important to note, since it indicates those areas which may have to be specially strengthened or protected. Each joint should be checked through a full range of motion. Atrophy in any muscle or muscle group indicates a previous serious injury, with probably inadequate rehabilitation to the affected part. Unusual mobility in any joint may indicate previous injury and even dislocation.

Large varicose veins in the lower extremities are a contraindication to contact sports because of the dangers of hemorrhage and ulceration in the event of injury.

The feet are very important parts of the athlete's anatomy. The presence of corns, bunions, or unusually placed calluses on the feet indicates disorders which may be aggravated by sports unless properly protected. Fungus infections are contagious in the shower and locker rooms.

22. *Reflexes.* Diminished or inactive deep ten-

don reflexes in the lower extremities are not necessarily signs of disease. They should, however, alert the examiner to the possibility of a neurologic disorder and should be recorded as they are found, for future reference. The presence of any abnormal reflexes, such as the Babinski, requires a thorough neurological study of the individual.

LABORATORY EXAMINATION

1. *Hemoglobin.* Levels below 12.5 grams in males and 11.0 grams in females are evidence of anemia and require further checking out before participation in sports.

2. *White blood count.* Very low and very high white blood counts are ordinarily associated with significant changes in the differential count. A count of the blood platelets might also be indicated in either of these instances.

3. *Blood smear.* The chief importance in this age group is in the detection of mononucleosis. The rare case of early leukemia will be found through this examination.

4. *Urinalysis.* A single finding of 1+ or 2+ albumin and even of red cells may not be significant, particularly if the specimen is obtained after exercise. Persistent findings of this sort, particularly if casts are present, requires further investigation before competition is allowed. Any positive finding of sugar should be checked by obtaining blood sugar samples.

5. *Chest.* A standard 6-foot single-film P-A is the most satisfactory for screening purposes. The size of the heart is less significant than the configuration. An abnormal configuration should be checked with a lateral and with a swallow of barium. All abnormal lung shadows are significant and should be checked out.

FUNCTIONAL TESTS

1. *Master's Step Test.* The purpose of this test is to determine the recovery index. There is a good correlation between a state of good physical conditioning and a high recovery index. A strong bench 20 inches high is used. The subject stands before the bench and, at the rate of 30 times a minute, places one foot on the bench, brings the other foot up or to the bench, returns the first foot to the floor and then the second foot, and repeats. This continues for one and one-half minutes. At the end of the exercise the subject sits down. The heart rate is counted after a one-minute rest; the number of beats in the next 30 seconds are recorded. When two minutes and when three minutes after exercise have elapsed, the number of beats in each of the subsequent 30 seconds are counted. The sum of these three counts is referred to a table to find the recovery index.

2. *Extension of the knee* by the quadriceps against weight. The subject sits on the edge of a table, with a small pillow beneath the knee, and the back of the calf just touching the edge of the table. A boot, to which weights are attached, is put on the foot of the limb to be tested. The subject raises the leg to a straight angle and lowers it back to position again. He should do this 10 times in one minute. The score is indicated by the heaviest weight with which he can perform this test with each limb.

3. *Flexion of the leg* on the posterior thigh by biceps contraction against weight. The subject lies prone on a flat table, with the weighted boot on his foot. He raises the leg until it makes a right angle with the thigh, and then lowers it to the table. He performs this test 10 times in one minute. The score for each limb is the greatest weight with which this test can be accomplished.

4. *Pull-ups.* The subject hangs by his hands from parallel exercise bars, with his feet off the ground. He pulls his body up, bending his elbows until his shoulders are level with his hands. Then he drops down until his elbows are once more fully extended. The number of times he can repeat this maneuver without releasing his hold on the bars is his score. For girls and women this test is modified by allowing them to support some of their weight on the floor without using the strength of their lower limbs to thrust themselves up.

Also deeply concerned with the matter of adequate physical examinations for athletes is the National Federation of State High School Athletic Associations. In commenting on Part I of Dr. Ryan's article in the June 1965 issue of *The Journal*, Clifford B. Fagan, executive secretary of the Federation, said: "I regret to say there are too many abuses at our level. It is evident to me that the need for a competent physical examination is even greater at the junior high and high school levels than at any others."

AMA Sponsoring Annual National Conference on Medical Aspects of Sports

The seventh National Conference on the Medical Aspects of Sports, sponsored by the American Medical Association under the auspices of the AMA Committee on the Medical Aspects of Sports, will be held in Philadelphia at the Benjamin Franklin Hotel, November 28.

Those interested in further information concerning the Conference should write to the Secretary, Committee on the Medical Aspects of Sports, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

The program:

Morning

9:00 FIRST GENERAL SESSION
Presiding: Owen B. Murphy, M.D., Chairman, AMA Committee on the Medical Aspects of Sports
Welcome: Charles C. Edwards, M.D., Acting Director, AMA Division of Socio-Economic Activities
—Purpose and Plans of the Conference
Thomas E. Shaffer, M.D., Program Chairman
—Horizons in Human Performance
Elsworth R. Buskirk, Ph.D., University Park, Pa.
Contributions of Sports to Medicine
Thomas B. Quigley, M.D., Boston

10:00 SYMPOSIUM: SPORTS TRAUMA TO THE HEAD AND NECK
Presiding: Richard C. Schneider, M.D., Ann Arbor, Mich.
—Mechanism of Injury to the Central Nervous System
E. S. Gurdjian, M.D., Detroit
—Functional Anatomy of the Cervical Spine
Gerald A. O'Connor, M.D., Ann Arbor, Mich.
—Recognition and Practical Management of Head and Neck Injuries
Gordon van den Noort, M.D., Bryn Mawr, Pa.
—Implications of Protective Equipment in Head and Neck Injuries
Martin E. Blazina, M.D., Los Angeles

Afternoon

12:15 LUNCHEON MEETING
Presiding: Owen B. Murphy, M.D., Lexington, Ky.
—Sports Medicine in Perspective
James Z. Appel, M.D., President, AMA

2:00 DISCUSSION GROUPS—Elective
Section I: Readiness for Sports Participation
Presiding: William D. Paul, M.D., Iowa City
—Mental Readiness for Sports
Chester M. Pierce, M.D., Oklahoma City
—Physical Readiness for Sports
J. Kenneth Doherty, Ph.D., Philadelphia
—Preparticipation Evaluation of Conditioning
L. W. Combs, M.D., Lafayette, Ind.
Section II: The Atypical Student in Athletics
Presiding: Allan J. Ryan, M.D., Madison, Wis.
—The Athlete with a Cardiovascular Problem
Albert S. Hyman, M.D., New York
—The Athlete with a Chronic Condition
Paul F. Schrode, M.D., Philadelphia
—The Athlete with an Orthopedic Handicap
Walter A. Hoyt, Jr., M.D., Akron
Section III: Special Problems in Sports
Presiding: Thomas E. Shaffer, M.D., Columbus, Ohio
—Some Problems in Girls' and Women's Sports
Evalyn Gendel, M.D., Topeka
—Pitfalls in the Conduct and Interpretation of Athletic Injury Surveys
William Haddon, Jr., M.D., Albany
—The High School Team Physician
Robert E. Reiheld, M.D., Orrville, Ohio

3:30 SYMPOSIUM: WEIGHT CONTROL IN WRESTLING
Presiding: Alex Rachun, M.D., Ithaca, N.Y.
—Regulations and Practices
John E. Roberts, Stevens Point, Wis.
—Effects of Rapid Weight Loss
Garfield G. Duncan, M.D., Philadelphia
—Body Composition and Clinical Estimation of Desirable Body Weight
Ladislav P. Novak, Ph.D., Minneapolis
—Nutrition and Stress
Lt. Col. John E. Canham, M.D., Denver

Evening

8:00 SYMPOSIUM: THE KNEE IN SPORTS
Presiding: Donald B. Slocum, M.D., Eugene, Ore.
—The Trainer and the Knee
Thomas E. Healion, Evanston, Ill.
—Significance of Current Ligament Research
Charles M. Tipton, Ph.D., Iowa City
—The Mechanism of Ligamentous Injury
John C. Kennedy, M.D., London, Ontario

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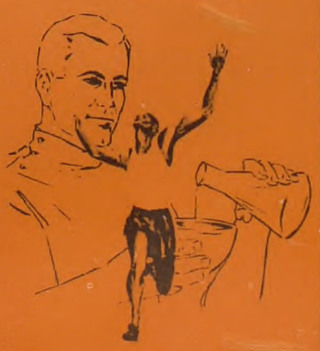

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