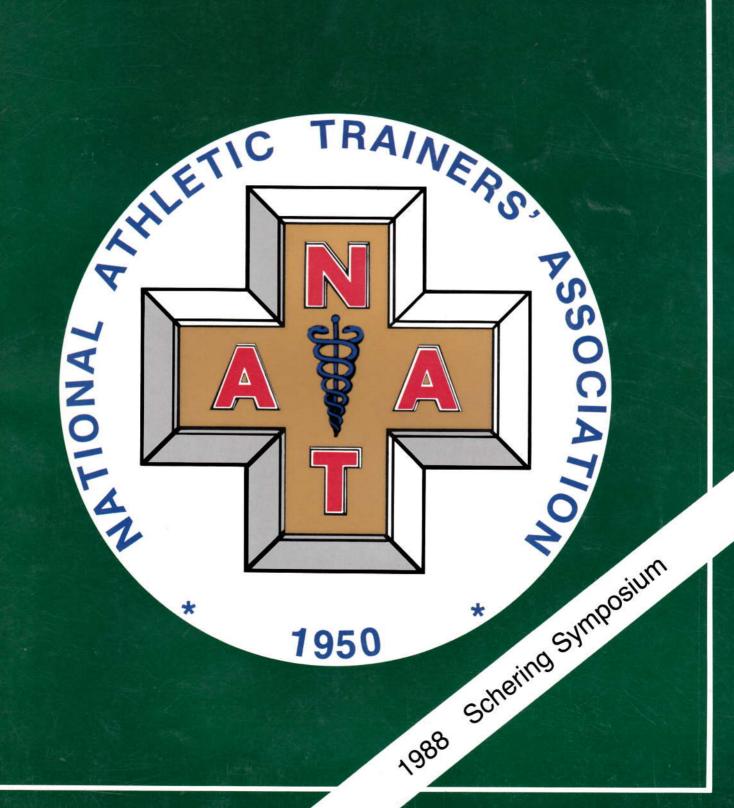
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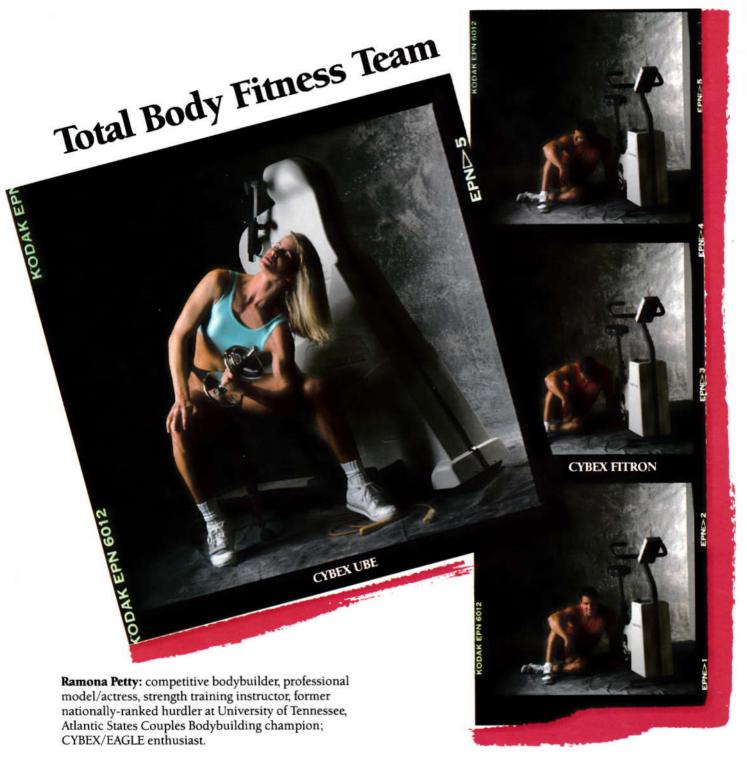
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# ATHLETIC TRAINING

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## Editor-in-Chief Comments



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#### Welcome

Let me say thank you and welcome to our newest corporate sponsor, McNeil/Mediprin.

#### Congratulations

I am sure all have received the first NATA Newsletter. It is a fine publication and will offer a new avenue of professionalism for our membership. Congratulations to John LeGear and his staff.

#### **New Department**

It is with pleasure that I announce the formation of a new department in the Journal: Video Reviews. Tom Gocke of Wake Forest University will serve as reviewer. Please pass along titles or recommendations for this new section to Tom. (Reminder: Also check the first NATA Newsletter for A-V Aids available.

#### Oops!

Just notified that Marge Albohm (Center for Hip & Knee Surgery, International Institute of Sports Science and Medicine) and Jay Bradley (Indiana University-Purdue University at Indianapolis) coordinated the host athletic training coverage provided during the 1987 Pan American Games in Indianapolis.

#### Correction

Subsequent to the publication of Candace Barker's winning paper (Evaluation, Treatment, and Rehabilitation Involving a Submuscular Transposition of the Ulnar Nerve at the Elbow, Spring 1988 CEU Quiz article) Ms. Barker had a change of plans as to physical therapy school. Rather than attending Northwestern University, she enrolled at Emory University to pursue the P.T. degree.

#### Closing

Have a good, healthy, and warm spring season.

SY (SSSA)

#### Letter

Dear Mr. Yates:

If it would not compromise the scientific nature of the Journal, I would like to submit this prayer for publication.

continued on page 51



## 1988 Schering Symposium

## CEU Credit Quiz

### Exercise Induced Asthma

Charles M. Wiener, MD

ost patients with asthma commonly report that exercise is a powerful trigger for an asthma attack. Exercise may be the only stimulus for wheezing in children and adolescents with mild cases of asthma and this response may be the only clue to the presence of a generalized abnormality in airway reactivity. Adults with more severe asthma or other respiratory disorders often avoid strenuous exercise so as to avoid this response. In this paper, I will describe the syndrome of exercise-induced asthma (EIA), the physiologic responses and mechanisms associated with EIA, and conclude with suggestions regarding therapy and approaches to athletes with EIA.

EIA describes bronchospasm that occurs six to eight minutes after strenuous exercise in 70-80% of people with asthma (1). The type, duration, and intensity of the exercise as well as physical environment will influence the degree of bronchospasm in different individuals. Short periods of exercise (< 3 minutes), even if extremely strenuous, usually will not provoke an asthmatic responce (4). As shown in Figure 1, the typical response to six minutes of exercise begins with transient bronchodilation during exercise. Soon after stopping, airway obstruction begins, as evidenced by a fall in forced expiratory volume in one second (FEV1). The obstruction peaks at about 10 minutes after the completion of exercise, and lung function gradually returns to normal by about 60 minutes. Wheezing is the main clinical manifestation of EIA, but coughing, dyspnea, and shortness of breath may also be present. Some athletes, especially those with mild symptoms may be able to "run through" their asthma attack, because the bronchospasm is prevented or eases if they continue to exercise for more than ten minutes (1). Obviously, it may be dangerous to rely on this response, because serious hypoxemia may occur during severe asthmatic

The primary stimulus for asthma seems to be the increased breathing resulting from exercise (3). The high levels of ventilation during exercise are thought to cause cooling and drying of the respiratory tract. It is not known exactly how these

changes cause bronchospasm, although it probably relates to changes in moisture and heat exchange in the lining of the airways (7). Figure 2 demonstrates that hyperventilation with cold air will mimic the bronchoconstrictor response to exercise. Decreases in temperature or humidity will cause further bronchospasm and combined changes in air temperature and water content may be additive (2).

Given the above information, it is not surprising that environmental conditions and the type of exercise will affect the amount of bronchoconstriction that the susceptible athlete suffers. Cold air, dry air, pollution, and large amounts of airborne antigens (pollen or dust) will increase the chance of EIA. Activities that take place in a warm, humid environment, such as swimming, will cause less EIA than activities such as outdoor running on a cold day.

Another characteristic of EIA is the refractory period (3). This refers to the finding that repeated episodes of exercise within two hours will cause less bronchoconstriction than the initial period of exercise. Figure 3 shows a typical response to a second period of strenuous exercise after full recovery from the first. Hyperventilation-induced bronchoconstriction does not result in a refractory period. A possible explanation is that endogenous catecholamines, (e.g. epinephrine) that are normally released during exercise (but not hyperventilation), protect the airways during subsequent periods of exercise.

It is also possible that a low level warm up may protect the athlete during later periods of stenuous exercise (6). This is demonstrated in Figure 4, where during the warm up run there is no significant bronchoconstriction and less than usual bronchoconstriction during the initial period of strenuous exercise. The warm up run seems to make the airways refractory to later challenges. This finding may be very useful in the management of athletes with EIA.

Fortunately, there are effective strategies for managing EIA. There is no need for the asthmatic to feel that certain sports are "off limits." Proper use of non-pharmacologic and pharmacologic therapies should allow asthmatic children and adolescents to participate in all competitive activities. As mentioned before, certain sports will result in fewer problems with EIA, and these activities can be encouraged. Simple interventions such as wearing a scarf or a mask during

Charles Wiener is with the Division of Pulmonary and Critical Care Medicine, Johns Hopkins Medical Institution, School of Medicine, Johns Hopkins University.

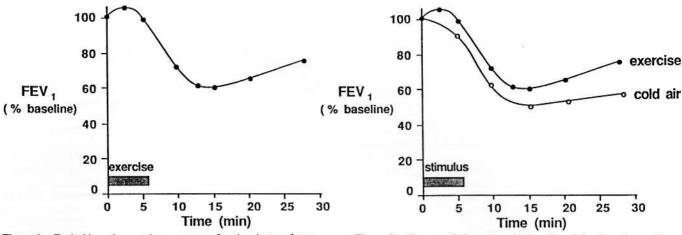


Figure 1: Typical bronchoconstrictor response after six minutes of strenuous exercise in susceptible asthmatics. (FEV<sub>1</sub> = forced expiratory volume in one second)

Figure 2: Hyperventilation with cold air will result in a bronchoconstrictor response similar to strenuous exercise.

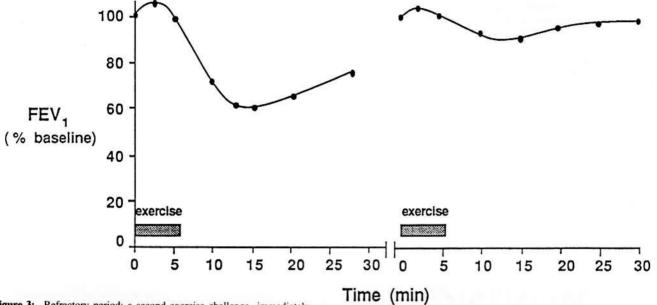


Figure 3: Refractory period: a second exercise challenge, immediately after recovery from the first, results in less bronchoconstriction.

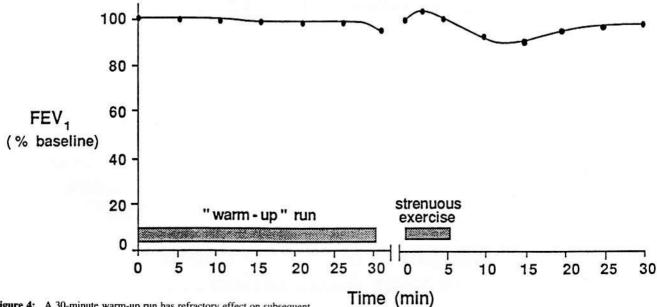


Figure 4: A 30-minute warm-up run has refractory effect on subsequent strenuous exercise.

exercise may decrease symptoms. Breathing through the nose also acts to warm and humidify the air and may lessen EIA. Hypnosis has also been suggested as a useful non-pharmacologic therapy, but its efficacy is not clear as even placebo administration can reduce the severity of EIA by 20-30% (5).

The most effective therapy is to prevent EIA through inhaled medication before exercise. The selective beta2 agents (e.g. Albuterol) are extremely effective and cause few, if any, systemic side effects. These drugs should be inhaled 5-30 minutes before exercise; their effect lasts for hours. If necessary the dose can be repeated; however, the risk of side effects increases with dosage. Continuous use of these agents is not necessary if EIA is the athlete's only manifestation of an asthmatic condition. While these agents are bronchodilators, their efficacy in EIA may be related to other mechanisms (3).

Cromolyn (or Nedocromil) is an inhaled powder that is not a bronchodilator but is very effective in the management of EIA (1). Until recently, Cromolyn was not easily administered, but now the drug is available in a metered dose inhaler. Cromolyn is usually slightly less effective than the inhaled beta2 agents, but has no systemic side effects. Its efficacy is improved with regular use. The drug must be taken prophylactically about an hour before exercise. In severe asthmatics, the combination of Cromolyn and a beta2 agent may be most effective. Cromolyn may be the drug of choice for asthmatics that are already receiving regular doses of inhaled beta2 agents where additional doses of the beta2 agent before exercise may provoke side effects.

Oral bronchodilators such as theophylline are not as effective as inhaled agents in the treatment of EIA. Antihistamines and corticosteroids are generally thought to have no significant effect on EIA (5).

Unfortunately, the treatment of EIA received some notoriety in 1972, when an American athlete had to forfeit an Olympic gold medal because his asthma medications were not cleared with the proper officials. Guildelines for drug usage in asthma are now established. The inhaled beta2 sympathomimetics (Albuterol, Terbutaline), Cromolyn, theophylline and corticosteroids are approved for use by the International Olympic Committee. The non-selectie beta agents (epinephrine, ephedrine, isoproterenol) are banned from use in competition. At the NCAA and high school levels, any drug recommended by a physician is allowed (3). In some cases, officials of the sponsoring organization may need to be notified that an athlete is receiving EIA or asthma therapy.

In conclusion, EIA is a common problem and can be a significant impediment to performance; however, once the disorder is recognized there are extremely effective therapeutic strategies that allow the athletes to compete at optimal levels

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#### **EXERCISE INDUCED ASTHMA** Charles M. Wiener, MD

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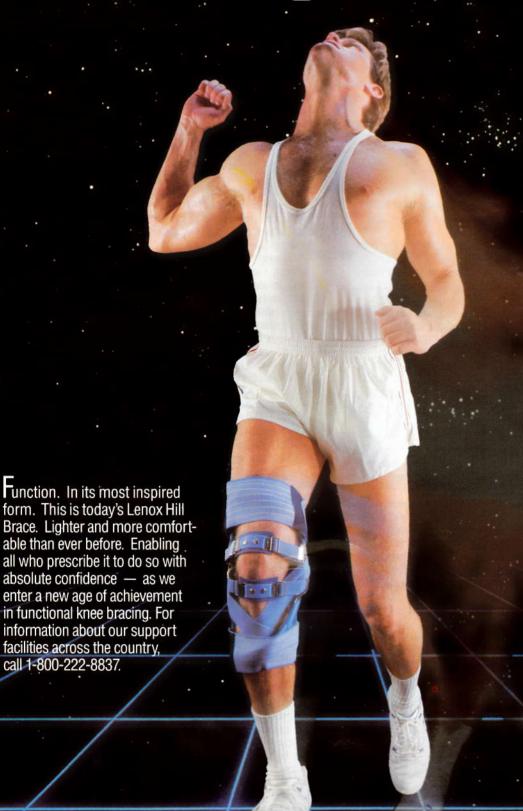
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Questions	a	b	c	d	e
<ol> <li>Individuals with EIA will usually develop bronchospasm         <ul> <li>within a minute or two if the exercise is very strenuous.</li> <li>after stopping strenuous exercise.</li> <li>if they exercise following a meal.</li> <li>none of the above</li> </ul> </li> </ol>					
2. The EIA episode usually presents with as its main clinical manifestation.  a. chest pain  b. cough  c. dyspnea  d. wheezing					
For some individuals with EIA, bronchospasm eases with continued exercise.     a. True     b. False					
4. Factors which will increase the amount of EIA include 1. cold air 2. dry air 3. poor air quality 4. large amounts of airborne antigens  a. 1,2,3 b. 1,3 c. 2,4 d. 4 only e. 1,2,3,4					
<ul> <li>5. Which of the following causes of bronchoconstriction result/s in a refractory period?</li> <li>a. hyperventilation</li> <li>b. exercise</li> <li>c. both a and b above</li> <li>d. none of the above</li> </ul>					

(May be xeroxed)

Questions	a	b	c	d	e
<ul> <li>6. It is recommended that individuals with EIA do not participate in</li> <li>a. marathon running.</li> <li>b. football.</li> <li>c. cross-country skiing.</li> <li>d. all of the above</li> <li>e. none of the above</li> </ul>					
<ul> <li>7. Which of the following agents is/are effective for the prevention of EIA?</li> <li>a. Albuterol</li> <li>b. Fenoterol</li> <li>c. both a and b above</li> <li>d. none of the above</li> </ul>					
8. Which of the following statements is/are true regarding cromolyn?  1. It is not a bronchodilator.  2. It stabilizes airway mast cells.  3. It is available in a metered dose inhaler.  4. It has no systemic side effects.  2. It stabilizes airway mast cells.  3. It is available in a metered dose inhaler.  4. It has no systemic side effects.					
<ul> <li>9. Which of the following types of agents is/are useful in the management of EIA?</li> <li>a. Antihistamines</li> <li>b. corticosteroids</li> <li>c. both a and b above</li> <li>d. none of the above</li> </ul>					
10. Which of the following asthma medications is/are approved for use by the International Olympic Committee?  1. epinephrine 2. Terbutaline 3. isoproterenol 4. theophylline  a. 1,2,3 b. 1,3 c. 2,4 d. 4. only e. 1,2,3,4					
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## Superficial Skin Infections

Barbara Rock, MD

uperficial skin infections are generally divided into bacterial, viral and fungal infections, and parasitic infestations. Each of these categories will be discussed individually. Understanding the basic organization of the skin is helpful for understanding the various clinical manifestations of infection.

The skin is divided into several functional layers. The outermost layer is the stratum corneum, or horny layer. This layer is composed to dead skin cells. It has the crucial function of providing a barrier that keeps harmful substances out while preventing moisture from escaping. Next is the epidermis. The primary functions of the epidermis are to produce the proteins and lipids that make up the stratum corneum and to participate in immune regulation. Beneath the epidermis is the dermis. This dermis contains the supporting structure of the skin, including blood vessels, appendages, and nerve endings. Below the dermis is the subcutaneous fat which provides insulation and protects deeper structures.

#### **BACTERIAL INFECTIONS**

Bacteria are ubiquitous, unicellular microorganisms. When they infect man they are called pathogenic. The most common bacteria infecting the skin are the gram positive microorganisms of the staphylococcal (Staph) and strep-

tococcal (Strep) species.

Impetigo contagiosum is an infection of the most superficial layers of the skin, usually due to Group A Strep (2). It is characterized by honey-colored, crusted lesions, often around the nose and mouth (Figure 1). Impetigo is highly contagious, spread by contact, and facilitated by breaks in the skin. A special type of impetigo characterized by blister formation is called bullous impetigo. Both types of impetigo can be treated with systemic antibiotics. Sometimes, depending on the severity of infection, topical antibiotics can be

Many of the other localized bacterial skin infections involve hair follicles. Folliculitis is an infection just of the hair follicles (Figure 2). The eruption can be mild, involving only a few follicles, or more extensive, with pustule formation. A serious infection requires systemic antibiotics, but milder cases are treated with local compresses and topical antibiotics.

There are also special types of folliculitis. For example, Sycosis barbae is a deep folliculitis involving the beard area. It is sometimes difficult to eradicate, but can be treated with warm compresses and topical antibiotics. Another variation of folliculitis is seen in association with community hot-tub use. It is so unique in appearance that it has been designated as "hot-tub folliculitis.

A furuncle is a localized infection that involves a larger area than a folliculitis, extending to the surrounding skin. A furuncle is commonly known as a "boil." Furuncles are usually seen in areas of friction such as the neck, axilla, buttocks, and inner thighs. They are first noticed as painful nod-ules which ultimately "point" and discharge pus before healing. These lesions are self resolving over the course of a few days. No treatment other than local compresses is needed. Generally the only time people have trouble with these lesions is when they are squeezed or otherwise inappropriately manipulated, causing a discharge of bacteria into the bloodstream. In particular, lesions around the face should be left alone by the patient. Some people have problems with recurrent furunculosis and require frequent courses of antibiotics and other specific therapy. Most of the time these people are otherwise completely healthy.

Carbuncles are even deeper infections, involving multiple hair follicles and extending deeper into the dermis. There are typically one or more areas of redness with central purulent drainage and accompanying pain (Figure 3). This type of infection requires antibiotics along with local care of the area. Localized skin abscesses, which are larger collections of infected drainage, often require incision and drainage before

they will heal.

The more serious skin infections are not confined to the hair follicles, but infect larger areas to various depths of the skin. Erysipelas is a painful, red infection involving the entire thickness of the epidermis, characterized by a rapidly advancing border and signs of infection such as fever and malaise. The portal of entry of the infecting Strep organism is often apparent. Systemic antibiotics are required for treat-

Cellulitis is an infection of the skin that extends through the dermis to the subcutaneous tissue. It is characterized by edema, or swelling, of the skin as well as redness and warmth (Figure 4). Cellulitis is again most often caused by Staph and Strep microorganisms. Cellulitis may occur secondary to trauma or spontaneously. It is a serious infection requiring antibiotics, bed rest, and often a hospital stay.

#### VIRAL INFECTIONS

Viruses are acellular infectious agents that cannot reproduce outside of the host tissue. They are composed simply of genetic material and a few proteins that make up the outer coat. In addition to reproducing, some viruses also make proteins that alter the host cell. For example, wart viruses cause the host cells to divide and grow. The two viruses to be discussed in this section are the human papillomavirus and the herpes simplex virus.

The human papillomavirus, or wart virus, is a nonenveloped DNA virus whose infectivity is limited to epithelial surfaces, i.e., the skin and mucous membranes (4). Over forty types of wart virus have been described. Common hand and foot warts (verruca vulgaris) are mildly contagious,

Barbara Rock is a Fellow in the Immunodermatology Department at Johns Hopkins Hospital. Direct correspondence to Dr. Rock at 600 North Wolfe Street, Baltimore, MD 21205. Telephone: 301/955-2992.



Figure 1. Impetigo contagiosum. Note the crusted lesion on the chin.

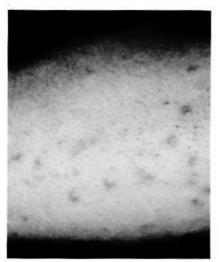


Figure 2. Folliculitis. Pustules are seen at the hair follicles.



Figure 3. Carbuncle. A large multiloculated lesion with a draining center is seen.



Figure 4. Cellulitis. The affected area is red, warm, and swollen.

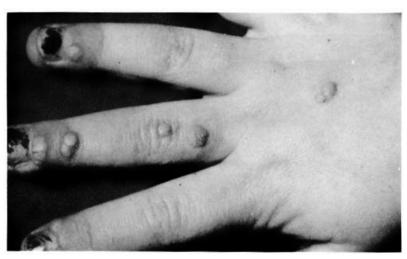


Figure 5. Warts (verruca vulgaris). Numerous lesions are present on the hand of this child.



Figure 6. Herpes simplex infection of the lip, "fever blister." Grouped, tiny blisters on a red base are seen.



Figure 7. Tinea versicolor. Multiple light colored, scaly lesions are scattered over the shoulder.



Figure 8. Tinea corporis. An advancing lesion with central clearing is seen.



Figure 9. Tinea pedis. Scaling and maceration is seen between the toes.



Figure 10. Tinea cruris. Note the abrupt, advancing border.



Figure 11. Candidiasis. Note the small satellite lesions.

benign growths. They occur most often in childhood and adolescence. If left untreated, most lesions will resolve spontaneously within two years. The typical wart is a skincolored, rough-surfaced bump, usually less than one centimeter in size (Figure 5). Although warts may appear to have what some people call "roots," they are actually confined to the epidermis and do not go deep into the tissue. Because of their location, some warts cause discomfort. This is particularly true of warts on the plantar surface of the feet. For this reason, and also because they are unsightly, most people with warts desire removal. Treatment of warts on the skin surface should be fairly noninvasive to avoid unnecessary scarring. Over-the-counter wart remedies can be successful if used diligently over several weeks. Often, however, it is necessary to consult a dermatologist for prescription medication or other therapy such as freezing or electrodesiccation.

Warts occurring in the genital region are known as condyloma acuminatum. They are caused by papillomavirus types that are essentially unique to mucous membranes. The lesions are multiple small or coalescing cauliflower-like protrusions found on the penis, scrotum and perianal regions in men, and on the labia, introitus, and perianal region as well as the cervix and vagina in women. Genital warts are spread

by sexual contact with an infected person. In contrast to verruca vulgaris, some types of genital wart virus infections are associated with genital tract cancers in both men and women in a small but significant percentage of patients. For this reason all genital tract papillomavirus infections should be treated by a physician, and the patient should be followed over time for recurrences. This is particularly important for women whose lesions may be internal only and not seen without a gynecological examination. There are multiple ways to treat the lesions, including application of certain topical agents, freezing and laser therapy. All treatment modalities require physician supervison.

The herpes simplex virus is a large, enveloped, DNA virus that infects both skin and mucous membranes. The virus causes painful blisters and erosions. The site of infection can be anywhere on the body, but it is typically around the mouth as a "fever blister" (Figure 6) or in the genital region as genital herpes. Herpes simplex virus is spread by direct contact with an infected person. "Fever blisters" usually come through contact with someone who has an active lesion. The primary eruption often occurs in childhood and may be accompanied by fever and malaise. After initial infection, the virus remains in the body in a dormant state and can be reac-



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Patients should be advised to read and follow product labeling. They should not take MEDIPREN if they have had a previous allergic reaction to aspirin. References: 1. Innocenti PF, Bruni G, Mandelli V, et al: Indoprofen versus ibuprofen in osteoarthritis: A short-term, double-blind, crossover trial. Curr Med Res Opin 1979;5:793-798. 2. Flower RJ, Moncada S, Vane JR: Analgesic-antipyretics and anti-inflammatory agents; drugs employed in the treatment of gout, in Gilman AG, Goodman LS, Rall TW, et al (eds): The Pharmacological Basis of Therapeutics, ed 7. New York, Macmillan Publishing Co, 1985, p 702. © MCN 1986 tivated at various times. Sunlight is a well known trigger of "fever blisters" (1). Recurrent lip lesions are painful, grouped blisters on a red base. Twenty-five to forty percent of Americans have experienced this type of eruption and it is, therefore, the most common type of herpes simplex infection. The diagnosis of herpes infection is made in the doctor's office by inspection, by a simple procedure called the Tzanck smear, or by culture.

Athletes sometimes contract a unique type of herpes simplex infection known as herpes gladiatorum. This form of herpes was first described in wrestlers, but can be seen in any sport with body contact. In herpes gladiatorum the typical eruption is seen in extramucosal sites such as the arm, the lower back, or the leg. These lesions are spread by direct contact with infected secretions and facilitated by abrasions in the skin.

In general, no specific treatment is required for herpes simplex infections other than keeping the area clean, using compresses if the lesion is weeping, and applying a soothing antibiotic cream in the healing phase. An effective oral antiviral agent, Acyclovir, is now available for severe or difficult-to-suppress eruptions. Although this agent can suppress or shorten the length of the outbreak, it is not a cure for the disease. Prevention of spread of herpes simplex is possible by avoiding contact with infected secretions.

#### **FUNGAL INFECTIONS**

The three most common superficial fungal infections of the skin are caused by pityrosporum, dermatophytes and candida. Each type of infection has unique features and somewhat different treatment. A simple laboratory test called the KOH prep that is done in the dermatologist's office with the scale from the skin can distinguish the eruptions.

Pityrosporum orbiculare causes an eruption called tinea versicolor. These fungi are ubiquitous and in the noninfectious yeast phase are considered a part of the normal skin flora (5). The pathogenic phase is precipitated by a warm, moist environment in susceptible hosts. Tinea versicolor is more common in the summer, and is frequently seen in sports participants. It is characterized by discrete, light colored, slightly scaly areas on the shoulders, chest and back (Figure 7). Occasionally, instead of being light colored, the spots are darker than the surrounding skin. The eruption can be slightly itchy or asymptomatic. The most notable feature is the color change of the lesion that is made more apparent by tanning. Treatment of tinea versicolor is relatively simple. Shampooing the body daily for ten days for 15 minutes at a time with a 2.5% selenium sulfide solution will control the eruption. Weekly or even monthly single treatments prevent the eruption from recurring during the summer months. Because the fungus is ubiquitous, there is no need to avoid contact with an infected individual.

Dermatophytes are a group related fungi that infect the stratum corneum (outermost layer of the skin) (3). Only a few of these dermatophytes are responsible for infection in humans. These infections are commonly known as "ringworm." They characteristically have an annular, or donut, shape, with an advancing, scaly border and clearing center. Tinea corporis, as it is correctly called when it occurs on the trunk, arms and legs, is spread from one individual to another by direct contact (Figure 8). In some cases, the fungus can also be spread from animal to humans.

The most common dermatophyte infection is tinea pedis, better known as "athlete's foot" (Figure 9). This is an itchy eruption characterized by redness and scale between the toes and, in severe cases, extending over the bottom and sides of the feet. The nails may also be involved.

Another common dermatophyte infection is tinea cruris, also known as "jock itch" (Figure 10). This is another very itchy eruption involving the groin, particularly in men. The

eruption is red and scaly with a characteristic abrupt margin. The symptoms are exacerbated by friction and perspiration. Both tinea pedis and tinea cruris can be treated with topical antifunal agents. Unfortunately, people who tend to get these types of fungal infections often have recurrences. Keeping the area dry and free from friction may help not only in the treatment, but also in the prevention of reinfection.

Candida also cause superficial skin infections. Candidiasis tends to occur between warm, moist skin folds such as in the groin, under the breasts and in the axilla. It is characterized by a red, itchy eruption with many satellite lesions and some pustules (Figure 11). Women may have an accompanying vaginal discharge. It is important to distinguish candida from dermatophyte infections because the treatment is different, especially in the women. Topical antifungal agents are important, but these must also be accompanied by intravaginal agents.

#### INFESTATIONS

Infestation refers to parasitic "infection" with insets, mites, worms and larvae. The two most common cutaneous infestations in this country are pediculosis and scabies. Pediculosis refers to what is more commonly called lice or "crabs." The common louse is an insect. It is a blood sucking, obligate human ectoparasite. If it infests the hair it is called pediculosis capitis; in the pubic region it is called pediculosis pubis. Pediculosis is spread by close bodily contact in the case of pediculosis pubis, or sharing brushes, hats, etc., in the case of pediculosis capitis. Itching is the foremost symptom, particularly for pediculosis pubis. Patients may have insect bite reactions and multiple abrasions secondary to the intense itching. Treatment of pediculosis is with topical agents.

Scabies is caused by a mite. It is easily spread by contact among family members, classmates, and associates, and by sexual contact. Scabies is an intensely itchy eruption commonly found in the finger web spaces, on the wrists, nipples, and genitals, and around the navel. As in pediculosis, treatment is with topical agents such as Lindane. Because of the high rate of contagion, all family members should be treated at the same time, even if they are asymptomatic.

There are many superficial infections involving the skin surface including bacterial, viral and fungal infections. Most of these eruptions, though not serious, are quite a nuisance, and, if neglected, complications can result. Prevention is as important as treatment and can often be accomplished by simple avoidance of contact with the infected person. If an eruption persists in spite of routine good hygienic measures, advice from a dermatologist is indicated.

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## Sexually Transmitted Diseases — An Overview

Pamela C. Tucker, MD

ecause of the recent emergence of the human immunodeficiency virus (HIV) responsible for the acquired immune deficiency syndrome (AIDS), the subject of sexually transmitted diseases (STDs) has received much attention. However, there are other sexually transmitted diseases that have been the focus of attention and concern for years, and recently they have been increasing in incidence. Although most do not result in a fatal outcome as does AIDS, they do result in substantial morbidity and expense (50). Therefore, it is important that we understand these diseases so that the early treatment can be initiated in order to affect morbidity and mortality. It is also important that the groups at high risk be informed on how their behavior can put them at risk for contracting these diseases.

#### RISK FACTORS

Since about the 1960's, our sexual behavior has changed. Both sexual freedom and promiscuity have increased, and because of the "baby boom", so did the numbers of adolescents and young adults who were causing the changing sexual behavior patterns (1). By 1979, 50 percent of teenagers had experienced coitus compared to 30 percent in 1971, and by 1983, 83 percent of single women from ages 20-29 were sexually active (48,55). Besides increased sexual activity, multiple partners place the individual at increased risk for contracting STD. Asymptomatic disease goes unrecognized in patients who do not undergo routine testing and can ultimately lead to a more morbid disease as with pelvic inflammatory disease (PID) or to an increased mortality as with human papillomavirus (HPV). Additionally, this untreated group will continue to spread disease to others.

Another risk is a condition called cervical ectopy. This is a physiologic response to puberty in which there is a change in the cells of the cervix. Since N. gonorrhea and C. trachomatis infect these cells preferentially, there is an increased chance of infection during adolescence (10). Both pregnancy and oral contraceptives also cause this physiologic response.

#### CAUSES OF STD'S

This list of sexually transmitted diseases is long (Table 1) with many of the diseases having been known for centuries, especially the more classical venereal diseases such as syphilis, gonorrhea and chancroid. Recently trends in the

Pamela Tucker is a Research Fellow in the Division of Infectious Diseases at Johns Hopkins Hospital. Direct correspondence to Dr. Tucker at Johns Hopkins Hospital, Division of Infectious Diseases, 600 N. Wolfe Street, Blalock 1111, Baltimore, MD 21205.

epidemiology of STDs has been changing and with the advent of new laboratory techniques, organisms such as C. trachomatis have been more commonly recognized. Nongonococcal urethritis (NGU) is caused by C. trachomatis 40 percent of the time and the diagnosis of NGU is now twice as common as gonorrhea (31). The organisms causing STDs may cause a range of clinical symptoms (Table 2) and it is important to recognize these symptoms and initiate testing and treatment.

Syphilis

Treponema pallidum is the cause of syphilis and can be seen by darkfield microscopy when fluid obtained from a chancre or ulcer is examined. Infection occurs when the treponema enters the skin, probably through abrasions, and replicates at that area. The organisms then disseminate through the blood stream and lymphatics.

Primary syphilis begins about two to four weeks after infection and it is heralded by a small, 1cm papule at the inoculation site. Within days, an ulcer develops which is characteristically indurated and painless and accompanied by bilateral, enlarged lymph nodes. Although the chancres can be found on any area of the body, they are most commonly found on the penis or labia. The pharynx is a less common area and in homosexuals anal lesions are common which, because of their location, are often missed. Because the ulcers are usually located in a recto-genital distribution, transmission is almost exclusively by sexual not casual contact.

It has been estimated that approximately one third of the individuals sexually exposed to infected individuals will also become infected. If untreated during the primary stage, the ulcer will heal within two months showing local control of the treponemas. However, the organisms will disseminate and a rash will appear next about four to six weeks after the primary stage. Although the rash may be mistaken for other etiologies, the typical rash of secondary syphilis is seen not only on the extremities and trunk but also on the palms and soles which may be a clue to the correct diagnosis. Because of systemic immunity, the rash does not resemble the primary chancres except in rare instances (33). The rash is initially an envanescent, macular rash, then it becomes scaly or coppery and occasionally pustular. Frequently there are ulcers inside the mouth resembling aphthous ulcers or canker sores. Another manifestation of secondary syphilis are condyloma lata which are wart like papules located near the primary chancre in moist areas. The condaloma lata are teeming with treponemes, therefore transmission may occur by contact with them, and although less infectious, the rash is also a potential source of infection through bodily contact.

#### TABLE 1 SEXUALLY TRANSMITTED DISEASES

Bacteria

Calymmatobacterium granulomatis (granuloma inguinale)

Chlamydia trachomatis

Gardnerella vaginalis (bacterial vaginosis)

Hemophylis ducreyi (chancroid)

Mycoplasma hominis

Neisseria gonorrhoeae (gonorrhea)

Treponema pallidum (syphilis)

Ureaplasma urealyticum

Fungal

Candida albicans

Viruses

Cytomegalovirus

Hepatitis Hepatitis

Herpes simplex — types 1 and 2

Human immunodeficiency virus (HIV)

Human papillomavirus (genital warts)

Molluscum contagiosum

Protozoa

Entamoeba histolytica

Giardia lamblia

Trichomonas vaginalis

**Parasites** 

Sarcoptes scabiei (scabies)

Phthirus pubis (crabs/lice)

#### TABLE 2 STD SYMPTOMS

Penile or vaginal discharge

Dysuria

Frequency

Skin lesions

Genital ulcers

Abdominal pain Arthritis

Dyspareunia

Abnormal vaginal bleeding

#### TABLE 3 GENITAL ULCERS

Syphilis

Genital herpes simplex

Chancroid (H. ducreyi)

Lymphogranuloma venereum

Donovanosis

#### TABLE 4 JOINT PAIN/ARTHRITIS

Secondary syphilis

Disseminated gonococcal infection

Lymphogranuloma venereum

Hepatitis B

Drugs

Herpes simplex virus

Cytomegalovirus

#### TABLE 5 INFECTIOUS CAUSES OF VAGINAL DISCHARGES

Neisseria gonorrhoeae Chlamydia trachomatis Genital herpes simplex Candida sp. Trichomonal vaginalis

Bacterial vaginosis

Other systemic symptoms may be noted in secondary syphilis. Malaise, hair loss, fever and headaches are common. Late in the course of infection neurologic abnormalities may be seen including symptoms of meningitis with an abnormal cerebral spinal fluid (CSF). The presence of neurologic findings at this stage may be associated with the development of neurosyphilis (16).

Tertiary syphilis develops in approximately 30 percent of untreated patients after a latent period usually of more than one year (26). Gummas, or granulomatous lesions, may be

present in the soft tissue and viscera.

Diagnosis is usually made by serological testing of the blood if examination of specimens from the chancres is not possible. Serological tests include non-treponemal tests and specific treponemal tests.

#### Neisseria Gonorrhoeae

Although gonorrhea has always been a common cause of STDs there was a recent report of a 4 percent increase in its incidence (11). This increase reflects a change from a ten year decline in the disease. The incidence of this disease is highest in men and women 24 years of age or younger and clinical manifestations include urethritis, cervicitis and vaginitis (inflammation of the urethra, cervix and vagina respectively). These occur after an incubation period of three to

Urethritis in men is usually symptomatic, though it may be asymptomatic 5 percent of the time (5). Symptoms include dysuria (burning or pain upon urination) and a purulent penile discharge. The implications of asymptomatic disease are great as treatment will be delayed and transmission of the disease will continue. Although more likely than men to be asymptomatic, painful urination with increased frequency can occur in women with urethral involvement. Cervical discharge may be present if this area is involved (2). Pelvic inflammatory disease (PID) commonly results from ascending gonococcal infection (47), therefore it is important to treat the disease early.

Two other sites of infection include rectum and pharynx, both of which may be seen in men and women. Rectal infection may be asymptomatic or produce rectal discharge, itching, bleeding and constipation (32). Ninety percent of infection at this site occurs in men who practice receptive anal intercourse. In women it usually occurs with other sites of involvement (32).

Pharyngeal gonococcal infection results from orogenital contact. Klein et al. documented infection in 10 percent of women, 3 percent of heterosexual men and 21 percent of homosexual men (32). If symptoms exist, they include sore throat and enlarged lymph nodes in the neck.

It has been estimated that 0.5 percent to 3 percent of untreated gonococcal infection will enter the blood stream and disseminate (3). When this occurs, multiple clinical manifestations result including fever, skin lesions, tenosynovitis, polyarthritis and hepatitis. Because women are commonly asymptomatic and therefore go without therapy, the majority of disseminated gonococcal infection (DGI) is in this group

Initially the organism enters the blood stream and skin lesions result (27). These are described as pus filled lesions on a red base, and are commonly found on the hands (8).

They appear early and continue for a few days.

Two other common symptoms of DGI are tenosynovitis and arthritis (Table 4). Tenosynovitis occurs most frequently in the hands and feet, yet recovery of the organism from the tendons is uncommon (8). In young patients about one half to two thirds of the septic arthritis in the United States is due to N. gonorrhoeae and this diagnosis should be suspected in anyone who is sexually active (43). Initially the arthritis is an asymmetric or migratory pain of multiple joints. Septic arthritis develops later with the knee being the most commonly

affected joint. Other joints affected are elbows, ankles, small joints of the hands, and less commonly the shoulder and hip. Aspiration of the joint fluid will show a leukocytosis, mainly polymorphonuclear neutrophils with a range from about 11,000 to 500,000 cells per cubic centimeter (8,43). Gram stain shows gram negative diplococci only 10 percent to 30 percent of the time (38).

Most strains of N. gonorrhoeae are susceptible to many antibiotics. These antibiotics include penicillins, tetracycline, cephalosporins, macrolides and rifampin. However, an increasing problem is resistance to penicillin and tetracycline (24,30). Although oral antibiotics may commonly be acceptable, intravenous antibiotics may be required in cases of PID or septic arthritis.

#### Chlamydia Trachomatis

C. trachomatis is a bacterium that causes infection through sexual contact. With the development of a tissue culture on which chlamydia could be cultured, screening for the organism could be accomplished. Since up to 40 percent of chlamydia infections can be asymptomic, new laboratory testing has aided in the diagnosis.

In women chlamydia is a common cause of a mucopurulent discharge from the cervix (9). Studies have shown that sexual partners of men with chlamydia were infected 45 percent of the time (35). Chlamydia has also been implicated as a cause of urethritis in women with dysuria, frequency and white cells but no bacteria in their urine (45). Other clinical manifestations of chlamydia in the female are exudative infection of the Bartholin ducts, infection of the uterus, fallopian tubes, and a perihepititis or FitzHugh-Curtis syn-

In men urethritis is also commonly caused by chlamydia and is implicated in 35 to 50 percent of non-gonococcal urethritis (NGU)(28). In heterosexual men with gonococcal infection, chlamydia will be isolated concomitantly 15-35 percent of the time. Dual infection is not common in homosexual men (6)

Chlamydia also causes other clinical manifestations in men. Epididymitis, which is infection of the testes and surrounding structures, is caused by chlamydia in about 5 percent of untreated patients, especially sexually active males under 35 years of age (4,34). Inflammation of the rectum, or proctitis, is a second entity and chlamydia was found in 15 percent of homosexual males with proctitis (44).

Since chlamydia commonly exists as a coexisting pathogen with gonorrhea, treatment of the latter should include treatment for chlamydia. The most active drugs against chlamydia are tetracyclines, macrolids, sulfonamides and clindamycin. Because prolonged therapy has not been found to be more efficacious, one week of therapy is usually sufficient (7).

#### **Bacterial Vaginosis**

Bacterial Vaginosis (BV) is one of the causes of vaginal discharge (Table 5). If the woman is symptomatic, the usual complaints are of a malodorous, homogeneous, adherent, white discharge. Although anerobes probably represent less than one percent of flora in a normal individual, the normally present lactobacillus has been replaced with anerobes in about 50 percent of the women with BV. Risk factors are IUD use, parity, number of sexual partners and the presence of mucopurulent cervicitis. Diagnosis is important as BV may be associated with upper genital tract infection, chorioamnionitis and post-partum infection of the lining of the uterus.

#### Herpes Simplex Virus

Since genital Herpes Simplex Virus (HSV) is not a reportable disease in the United States, and since many infections are asymptomatic and the patient does not always seek medical attention, it is hard to determine the precise number of cases (37). However, the incidence of genital HSV is increasing (12). Transmission of the virus is by exchange of infectious secretions onto mucosal surfaces or abraded skin and since the herpetic ulcer can occur in areas other than the genitalia, close bodily contact can cause transmission. Spread of HSV has been seen in wrestlers who received a traumatic inoculation during certain holds. Shedding of the virus may be asymptomatic; therefore the individual may be contagious without evidence of an ulcer (37). The incubation period is from 1 to 26 days (17). The virus may lie dormant after primary infection and reactivation may occur.

The lesions of HSV are usually small and tender, though the lesions may coalesce to form larger ulcers. The ulcer bed is usually shallow without an exudate and discrete, firm and enlarged lymph nodes are common, especially with primary disease (22). Besides ulcer, systemic symptoms may exist which include fever, stiff neck and headaches

The two serotypes of HSV are HSV-1 and HSV-2. In the United States primary genital herpes is due to HSV-2 70 percent of the time and recurrent genital HSV is due to HSV-2 98 percent of the time (18). With orolabial HSV infection, HSV-1 reactivation is more common.

As mentioned, HSV infection may be asymptomatic, and symptoms may be varied. Women with HSV urethritis complain more than men of painful urination, itching and discharge. With HSV pharyngitis, symptoms are ulcerations, exudative pharyngitis and enlarged lymph nodes in the neck (49). HSV proctitis may present with anorectal pain, rectal discharge, bloody stool and is seen in individuals who engage in anal receptive intercourse, especially homosexuals

#### **Human Papillomavirus**

Human papillomavirus is the cause of genital warts or condyloma accuminatum, and has an incubation period of approximately 6-8 weeks. Approximately 40 strains of HPV have been identified with HPV types 6, 11, 16, 18, 31, 33, 35 and 39 being associated with genital warts (23). The incidence and prevalence of HPV is increasing, it is the most common viral STD (13).

The most common complaint is the presence of the wart, but the warts are not always found on inspection (40,31). Up to 27 percent of patients may complain of other symptoms which include itching, tenderness, bleeding or irritation (15).

Human papillomavirus has also been identified as a cause of abnormal cells of the cervix and a probable cause of genital malignancy, a complication associated with morbidity and mortality. Using molecular hybridization techniques, HPV DNA has been detected in cervical intraepithelial neoplasia (CIN) and invasive cervical cancer (23). HPV DNA has also been found in carcinomas of the anus, vulva, penis and vagina (23).

#### Trichomonas Vaginalis

Trichomonas vaginalis is a common cause of vaginal discharge, although it may be asymptomatic. Typically the patient complains of a copious, malodorous, greenish, frothy discharge. She may also have dyspareunia (painful intercourse), frequency, urgency and vulvar irritation. Up to 25 percent of the women will experience abdominal pain, but this may be due to coexisting pathogens (eg BV or gonorrhea). Motile trichomonads are seen on examination of the discharge.

Trichomonal infection has been seen in up to 4 percent of men attending an STD clinic (54). When exposed to T. vaginalis men may remain uninfected or have a self limited disease with mild complaints of dysuria (53).

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#### **Less Common STDs**

Chancroid, caused by Hemophilus ducreyi, is a common cause of genital ulcers in developing countries. More recently outbreaks have been seen in some of the major cities of the United States. The ulcers are typically deep, painful and friable with ragged edges and a purulent base. Tender, unilateral lymphadenitis is seen in up to 65 percent of the cases (19,36). Autoinoculation to extra genital sites may occur. This STD needs to be distinguished from other diseases which cause genital ulceration (Table 3). The ulcer of syphilis is usually painless while the chancroid ulcer is not. Because of increasing resistance to sulfonamides and tetracycline, erythromycin and ceftriaxone are presently used.

Lymphogranuloma Venereum (LGV) is caused by biovars of Chlamydia trachomatis. In this disease ulceration is not the predominate feature, lymphadenopathy or buboes are. A superficial, painless, rapid healing lesion is seen in only 5-25 percent of the cases (42). The lesion has also been described as herpetiform and some have been associated with sinus tracts. Prior to the lymphadenopathy or lesions, fever, malaise, headache and muscle pains may appear. Tetracycline may shorten the duration of the buboes (14).

The causative agent of another STD, Donovanosis or granuloma inguinale, is Calymmatobacterium granulomatis and although it is rarely seen in the United States, it is quite prevalent in other countries. The incubation period is 8-80 days and the lesion that results is a well defined, painless ulcer. There may be inguinal involvement, however true lymphadenopathy does not occur unless there is secondary infec-

#### PELVIC INFLAMMATORY DISEASE

Pelvic inflammatory disease is an important consequence of STDs. Up to 15 percent of young women have had at least one episode of PID (51). The morbidity, chronic sequelae and cost of PID underlie the need for early recognition and prompt treatment of this condition. The disease encompasses infections of the upper genital tract in women with resultant inflammation of the upper genital tract (52). Because of the scarring which then results, long term problems are common. These include infertility, ectopic pregnancy, chronic pelvic pain and recurrent infection.

Clinically, PID may be difficult to diagnose due to the lack of specificity of the symptoms. Lower abdominal pain with tenderness on the bimanual pelvic exam and a cervical or vaginal discharge will be due to PID in two thirds of the patients with these findings (29). Other symptoms which are even less specific include the following: nausea, vomiting, painful urination and abnormal vaginal bleeding (29). In more severe cases the woman may be quite ill and require hospitalization. Alternatively, the woman may have mild or no symptoms to alert her to the fact she is infected. This is especially true of PID due to chlamydia (46).

Pelvic inflammatory disease is usually a polymicrobial infection due to ascension of the organisms from the lower genital tract and therapy should be modified to treat the multiple organisms. It has been estimated that organisms other than gonorrhea or chlamydia were recovered 73 percent of the time, if cervicitis due to gonorrhea was not present. If gonorrhea was cultured from the cervix, still one third had other organisms also present in their peritoneal or abdominal fluid (20). Because up to 10 percent of women with chlamydial cervicitis and up to 19 percent with gonorrhea will go on to develop PID if untreated, it is important to diagnose cervicitis and initiate early therapy (51,11).

Multiple factors have been identified which places the

woman at risk for PID. Intrauterine devices (IUD) places the user at a risk that is 10 times higher than nonusers (25). Multiple sex partners is also a risk. One fourth of women with one episode of PID will develop recurrent PID after treatment of the initial infection and up to two thirds of PID will occur within seven days of their menses (21,51).

#### SUMMARY

Sexually transmitted diseases are an increasing problem in young men and women. Multiple clinical presentations may occur or the patient may be asymptomatic. It is important to recognize the symptoms of STDs early so that appropriate therapy may be instituted. Vaginal or penile discharge, ulceration, dysuria and frequency, and testicular or abdominal pain and ulceration are some of the more common symptoms. Recognizing these symptoms early, obtaining regular checkups and early medical treatment and avoidance of behavior that places the individual at high risk will diminish the morbidity and mortality of STDs. This is important as STDs are most prevalent in young men and women, and it is this population that stands to lose the most from the consequences.

#### Acknowledgement

I would like to thank Gail Martin for her secretarial help in manuscript preparation

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continued on page 87

#### **Tentative Program** 1989 NATIONAL CLINICAL SYMPOSIUM AND WORKSHOP

#### NATIONAL ATHLETIC TRAINERS ASSOCIATION, INC. DALLAS CONVENTION CENTER, DALLAS, TEXAS June 11-15, 1989

#### Sunday June 11

NATA NACDA Seminar — Steroids in Athletics and Legal Implications of Athletic Training Evening: Welcome to NATA National Headquarters

#### Monday June 12

A.M.

Session I:

AOSSM Seminar - Ankle Injuries

Session II:

PFATS Workshop "The Athletic Brain-Trauma, Illicit Drug Influences, Psy-

chogenic Considerations

Session III: Session IV: PBATS: Shoulder Injuries in Baseball Computers in the Training Room

SCHERING SYMPOSIUM: HEAD AND NECK INJURIES

Evening Workshops

Session I:

APS: Injuries to the Foot

Session II:

Women's Conference

#### **Tuesday June 13**

8:30 a.m. — 9:00 a.m.

- Welcome and Opening Remarks

Keynote Address — James Dodson
 "Sports Medicine for the Olympic Movement"

9:00 a.m. — 9:45 a.m. 9:45 a.m. — 10:30 a.m. 10:00 a.m. — 11:00 a.m. 11:00 a.m. — 1:00 p.m.

Poster Presentations

National Business Meeting

P.M. - 4 Concurrent Sessions

#### Session I

2:00 p.m. - 3:15 p.m. 3:15 p.m. — 4:00 p.m. - The Role of the Clinic Trainer in the Public School Setting

- Current Status Sports Litigation

Session II

2:00 p.m. — 2:30 p.m.

- The Asthmatic Athlete

2:30 p.m. — 2:30 p.m. 2:30 p.m. — 3:00 p.m. 3:00 p.m. — 3:30 p.m. 3:30 p.m. — 4:00 p.m.

- Heat Illness - Evaluation of Internal Injuries

- Sudden Death Syndrome

Session III

2:00 p.m. - 4:00 p.m.

- Student Trainer Workshop

Session IV

2:00 p.m. — 3:00 p.m. 3:30 p.m. — 4:30 p.m.

- Hypertension in the Competitive Athlete

Smokeless Tobacco

#### Wednesday, June 14

#### A.M. — 4 Concurrent Sessions

Session I

8:30 a.m. — 9:15 a.m. 9:15 a.m. — 10:00 a.m.  Mobile Sports Medicine Program Care of the Special Interest Athlete

Safety Considerations in the use of Therapeutic Modalities

10:30 a.m. — 11:15 a.m. 11:15 a.m. — 12:00 Noon

Plyometrics

Orthopaedic Lectures with Emphasis on Evaluation and Rehabilitation Hip Injuries

Knee Injuries

8:30 a.m. — 9:15 a.m. 9:15 a.m. — 10:00 a.m. 10:30 a.m. — 11:15 a.m. 11:15 a.m. — 12:00 p.m.

Shoulder Injuries

Hand, Wrist, and Finger Injuries

Session III

High School Athletic Trainers Workshop

Session IV

Session II

**Back Seminar** 

#### P.M. - 4 Concurrent Sessions

Session I

1:00 p.m. — 1:45 p.m.

Vision Screening

1:45 p.m. — 2:30 p.m.

Sports Denistry MRI/Oncology In Sports

2:30 p.m. — 3:15 p.m. 3:30 p.m. — 4:15 p.m. 4:15 p.m. — 5:00 p.m.

Pre-Participation Exam Fitness and Body Fat Testing

Session II

1:00 p.m. - 2:00 p.m.

Seminar - Promoting the Importance of the Athletic Trainer - Dick Schultz,

Ex. Dir. of NCAA NATA in the 1990's

2:00 p.m. — 3:30 p.m. 3:30 p.m. — 4:15 p.m. 4:15 p.m. — 5:00 p.m.

The Future of Athletic Training Professional Education Seminar — The Athletic Trainer as an Administrator

Session III

Free Communications

Session IV

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Thursday, June

Session I

8:30 a.m. — 10:30 10:30 a.m. — 11:15



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## Acquired Immunodeficiency **Syndrome**

Anne Rompalo, MD

IDS, an acronym for the acquired immunodeficiency syndrome, was virtually unheard of six years ago. Now it is a household word. Insidious and lethal, it is a unique sexually transmitted disease, as it has no cure, no vaccine, and it is becoming a major epidemic of this century. Fortunately, AIDS is transmitted exclusively by sexual means and by blood; it is not casually transmitted, as are most contagious diseases. Therefore, it is theoretically possible to control its spread. Control requires knowledge about the disease, ability to communicate that knowledge to the populations at risk. and willingness of these populations to utilize this information and change behavior. Adolescents and young adults, although not among the high risk groups for developing AIDS, may be individually at risk because they engage in risky sexual behaviors and drug use. Since teenagers are exposed to misinformation about sexuality and AIDS, education is urgently needed to counter this misinformation and reduce the panic surrounding the disease. Athletic trainers are frequently in contact with young adults, often providing health care, and are in an excellent position to pass on accurate information and give valuable counseling regarding AIDS.

The purpose of this article is to review the information available concerning the pathogenesis, diagnosis, and clinical management of AIDS and to prevent formative educa-

tional approaches to its control.

#### DEFINITION

AIDS is a syndrome caused by infection with the human immunodeficiency virus, a retrovirus that primarily infects T4 lymphocytes of the immune system. Because this virus attacks the destroys an arm of the immune system, the disease was first recognized as a syndrome of opportunistic diseases in persons who had no conditions known to impair immunity (such as lymphomas or leukemias) (10). Such diseases include infections such as pneumocystis carinii pneumonia (PCP), toxoplasmosis, atypical mycobacterium, and disseminated cytomegalovirus.

It is now known that asymptomatic infection with HIV can precede disease manifestation or the diagnosis of AIDS by months or even years (1,11). Currently, it is estimated that between one and two million Americans are infected, and several million in Africa (2). Studies completed thus far estimate that between 25 to 50 percent of infected individuals will ultimately progress to full blown AIDS (7). Other studies show a steady, gradual decline of the immune system (6). Presently only about 2% of those thought to be infected have developed opportunistic infections.

#### HIV TRANSMISSION

HIV is spread through intimate sexual exposure with secretion exchange, intravenous drug use with contaminated equipment, transfusion with infected blood or blood products, and perinatal transmission from an infected mother to her infant. Transmission via casual contact such as hand shaking, droplet spread or household contact, has not been documented.

HIV had been isolated in a variety of body fluids, but it appears that the concentration of the virus is high enough to spread infection only in semen, cervical secretions, and blood. Although small amounts of HIV has been found in urine, saliva and tears of AIDS patients, it is believed that the virus is rarely present in these fluids (B).

Initially, transfusion with infected blood or blood products was a significant route of disease spread, but blood banks now routinely screen all donations for HIV antibody. This test is highly sensitive and has virtually eliminated HIV transmission through contaminated transfusions.

No health care worker has become HIV seropositive from routine daily patient contact or care. Some 1500 cases have been reported to the CDC in which health care workers were exposed to HIV through sharp instruments or mucosal contact. Of that group, there were only six cases of documented HIV seroconversion (3,5).

#### CURRENT GROUPS AT RISK FOR HIV IN-FECTION

Groups recognized to be at highest risk for HIV acquisition include homosexual or bisexual men, intravenous drug users, and their heterosexual partners. HIV infection has been noted in mid and late teen age groups, but the prevalence peaks in the late 20s and early 30s (4). Although homosexual and bisexual men still comprise the majority of AIDS cases, cases among heterosexuals are rising. When AIDS cases are divided according to race and ethnicity, the cumulative incidence of cases is disporportionately high among blacks (3 to 1) and Hispanics (2.6 to 1) compared with whites

#### CLINICAL SYNDROMES

The spectrum of illness caused by the HIV virus ranges

Anne Rompalo is presently the Associate Director of the Baltimore City Eastern Health District Sexually Transmitted Disease Clinic, and Research Associate in the Division of Infectious Diseases at the Johns Hopkins Univeristy School of Medicine in Baltimore, Maryland. Dr. Rompalo did her infectious disease training at the University of Washington in Seattle and was a Burroughs-Wellcome scholar at the Middlesex Hospital in London, England. Her research interests are in the epidemiology of sexually transmitted diseases, and enteric infections in homosexual men.

from a self-limited acute mononucleosis-like syndrome to the AIDS disease complex including opportunistic infection. Between these two extremes are asymptomatic HIV seropositivity, persistent generalized lymphadenopathy (PGL), and AIDS related complex (ARC). Patients with asymptomatic seropositivity pose the greatest threat of spreading the disease because they may be unaware of their infectivity. It is important to eliminate possible treatable causes of lymphadenopathy (Hodgkins disease) before making the diagnosis of PGL. ARC consists of persistent fever, weight loss, or unexplained diarrhea in the presence of HIV infection. Patients with AIDS or ARC may also have dementia, peripheral neuropathy, motor dysfunction, or personality changes.

#### PROSPECTS FOR TREATMENT AND CON-TROL

Although there is no current vaccine available for HIV, research is continuing. The treatment of infected persons also remains experimental; although much hope is being placed in azidothymidine (AZT) as a virustatic agent.

Education remains the first line of defense against disease spread. Recently, the Surgeon General distributed a pamphlet-"Understanding AIDS" — in an attempt to educate the public about the risks of HIV infection (9). The message is: if you practice risky behavior, you are increasing your chance of infection.

To prevent HIV infection, stopping practices that permit the exchange of semen, cervico-vaginal secretion, or blood is of primary importance. This may require celibacy, persistent monogamy, avoidance of specific sexual practices, consistent use of condoms during intercourse, or cessation of intravenous drug use.

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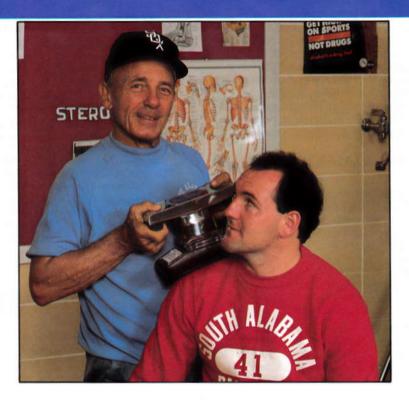
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## Should Athletic Trainers Be Concerned About HIV? **Guidelines For Athletic Trainers**

Michael J. Welch, PhD, FACSM Michael R. Sitler, PhD, ATC MaryBeth Horodyski, MS, ATC

ABSTRACT: Concern about the transmission of Human Immunodeficiency Virus (HIV) has become paramount in all medical professions. The first case of acquired immunodeficiency syndrome (AIDS), the disease caused by the transmission of HIV, was diagnosed in 1981. Now it is reported that approximately 1 to 1.5 million Americans are infected with HIV. Athletic trainers need to be aware of the recommendations for the prevention of the transmission of HIV. Universities with student athletic trainers need to establish written guidelines to ensure that AIDS information is disseminated to all such student athletic trainers.

The purpose of this article is threefold. The first is to highlight the information that has been gathered on the transmission of the Human Immunodeficiency Virus (HIV), the virus that causes Acquired Immunodeficiency Syndrome (AIDS). The second purpose is to report on the results of a telephone survey of 20 northeastern schools concerning changes in their athletic training procedures since the outbreak of AIDS. The third is to make some recommendations for athletic trainers for the prevention of HIV transmission in the athletic environment.

#### AUTO IMMUNE DEFICIENCY

The Human Immunodeficiency Virus (HIV) attacks the immune system resulting in the loss of the body's ability to fight off infections. Specifically, it destroys the helper T lymphocytes. These white blood cells are the first to recognize antigens that have invaded the body. As a result of this recognition, the helper T cells stimulate another class of lymphocytes known as B cells, which secrete specific antibodies to neutralize or eliminate the invaders. The helper T cells also activate another group of white blood cells referred to as the TB cells. This group kills the cells of the body that are infected with intracellular pathogens. Thus, the virus destroys the helper T cells which control the activities of the natural killer cells and macrophages involved in the responses to infection and possibly to incipient malignancies. As a result, a great variety of illnesses can develop with a host of bacteria, fungi, viruses, parasites, as well as neoplasms (1).

Michael Welch is the Director of Sports Medicine and an Associate Professor in the Department of Physical Education at the United States Military Academy, West Point, New York. Welch is also a Fellow of ACSM.

Michael Sitler is the Undergraduate Athletic Training Program Director and an Assistant Professor at Temple University.

MaryBeth Horodyski is the Head Athletic Trainer and an Assistant Professor in the Department of Physical Education at the United States Military Academy. Horodyski is a regional representative for the NYSATA licensure committee and a member of the ACSM.

#### HIV AND TRANSMISSION

The first case of AIDS was diagnosed in 1981. Currently, there are approximately 54,000 reported cases with an estimated 1 to 1.5 million Americans infected with HIV. Moss et al. (2) have reported that half of the individuals infected with HIV will develop AIDS within the next nine years. This new data reinforces the growing concern that without effective treatment, an individual infected with HIV will likely develop AIDS.

Virtually all infected persons are able to transmit the infection to others. Once infected with HIV, that individual remains a carrier for life. Presently, there are three high risk groups; homosexuals, intravenous drug users, and sexual partners of these two groups. The recent findings of Masters and Johnson (3) reveals the importance of this latter group. Surveying 800 men and women between the ages of 21 and 40, they found that 7% of the women and 5% of the men who tested positive for HIV had had at least six heterosexual partners within the preceding year. Another recent study has indicated that sexually active students are failing to take precautions against AIDS. At two universities studied, 55 to 60 percent of the sexually active students did not use condoms (4). Thus, there is a serious concern that the heterosexual partners of homosexuals or intravenous drug users will carry the disease into a wider population. HIV has been isolated from a wide variety of body fluids. Active viruses have been found in blood, semen, vaginal secretions, salvia, tears, breast milk, cerebrospinal fluid, amniotic fluid, and urine (5). It has not been isolated from sweat. Epidemiologic evidence has shown only blood, semen, vaginal secretions, and possibly breast milk as routes of transmission (5).

Several epidemiological studies have been completed in which health care personnel have been identified as being at risk of acquiring HIV. In a study conducted by the Center for Disease Control, 883 health care workers are tested for HIV. Of these, 708 (80%) have had percutaneous exposurers to blood and 175 (20%) have had a mucous membrane or open wound contaminated by blood or body fluid. Four of these individuals later tested positive, but heterosexual transmission could not be ruled out for one (6).

In a second study, 332 health care workers were reported as being exposed to contaminated blood, either via needlesticks or mucous membrane exposures to the blood. As of April 1987, none of the workers had tested positive (7). A third study showed similar results (8). Thus, it appears that the health care provider can be relatively safe from acquiring the disease if precautionary care is taken in avoiding direct contact with body fluids of a patient.

#### PRESENT PRACTICES

As awareness of AIDS has increased during the past sev-

eral years, we were interested in determining whether athletic trainers have changed their policies and procedures when exposed to an athlete's body fluids. We telephoned athletic trainers at 20 universities/colleges in the northeast and inquired as to their current practices and procedures.

Our first question was whether any changes had been made in the way the athletic trainer cared for the bleeding athlete. Fourteen schools responded that they had implemented changes. However, only five of the schools had made the wearing of gloves mandatory, while nine stated that gloves were available for use. Six schools did not make any changes regarding their portection from HIV transmission. Furthermore, only two schools had formalized these new procedures in writing. Thus, those schools that have adopted the use of gloves depend on the policy to be implemented by word of mouth.

We were also interested in determining if the topic of AIDS was being addressed in the athletic training curriculum. Of the 20 schools polled, 16 had undergraduate NATA programs. Only four of these schools reported that the topic of AIDS was not being addressed and one was not sure. Those schools that had added the discussion of AIDS to the curriculum did so in a variety of ways. The majority of the schools did so through their own curriculum. Other approaches included physician in-service programs, seminars, health courses and informal dialogue.

Our third question concerned the housecleaning of the training room. A 10% solution of bleach has been shown to be effective in killing HIV; however, only two of the schools stated they used this for the cleaning of tables, etc. All others were still using alcohol or some other commercial germicide.

#### **GUIDELINES**

Health care workers should wear rubber gloves when exposed to patients' body fluids. Rubber gloves should also be worn, whenever one is exposed to mucous membranes, nonintact skin, or other materials contaminated with blood or body fluids. Hands or skin should be washed immediately and thoroughly if contaminated with blood or body fluids. Hands should also be washed after removing gloves. One should take precautions to prevent injuries caused by needles, scalpels, or any other sharp instruments. To prevent needlestick injuries, needles should not be recapped, removed from disposable syringes, or purposely bent or broken by hand. This is important, as almost all cases of transmission of the HIV virus to health care workers have been the result of needlesticks. The use of mouthpieces, resuscitation bags, or other ventilation devices should be available for emergency resuscitation (5). Athletic trainers with open lesions should exercise caution when treating an injured athlete.

#### RECOMMENDATIONS

Considering the health implications and pervasiveness of AIDS, appropriate steps should be taken to rectify deficiencies in the clinical and educational settings in order that risks associated with the disease can be minimized. The use of 10% solution of bleach is recommended for the cleaning of training room tables and other surfaces. The use of rubber gloves is recommended for all athletic trainers when handling blood or body fluids. Although it would appear that the majority of the NATA programs reviewed include information on AIDS, curriculum guidelines should be established by the NATA. Established guidelines would ensure that the topic of AIDS is included in all NATA educational programs. It is recommended that policies and guidelines be formalized in writing. Written instructions would ensure a uniform standard of conduct, as well as ensure that consistent information is disseminated.

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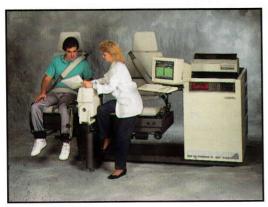
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## Differential Diagnosis: Exertional Compartment Syndromes, Stress Fractures, and Shin Splints

Susan E. Genuario, MEd, ATC

ABSTRACT: The purpose of this article is to delineate the symptomatology, etiology and pathophysiology of exertional compartment syndromes, stress fractures and shin splints. Each condition causes lower leg pain in the athlete but because of their respective treatment regimens, an early accurate diagnosis is imperative. The athletic trainer should be knowledgeable in the clinical manifestations of each condition, as each is an overuse syndrome and requires early intervention in order to effect a cure.

n overuse injury results from repetitive trauma to the tissues without sufficient time for healing to occur. ▲ The etiology of exertional compartment syndromes, stress fractures and shin splints is that of overuse. The key to understanding the pathogenesis of each disorder is to understand the manner in which overuse effects the tissues involved. A tissue's response to injury, no matter what the cause or type of injury, is inflammation (5). In overuse injuries, the additive effects of repetitive forces lead to microtrauma, which in turn triggers the inflammatory pro-

Many factors are involved in contributing to the overuse syndrome. The athletic trainer's role is to identify these factors and to understand the etiology, pathophysiology and treatment of each disorder.

#### COMPARTMENT SYNDROMES

A compartment syndrome results from increased tissue fluid pressure in a closed fascial space which compromises the circulation to the nerves and muscles within the involved compartment (3,8). Intramuscular pressure is so increased that microvascular ischemia occurs (10).

Anatomically, the leg is composed of four compartments: anterior, lateral, deep posterior, and superficial posterior (Figure 1). Each has a peripheral nerve and each is surrounded by fascia. Conceptually, a compartment syndrome is a simple problem of volume vs. size; the size of the fascial compartment is too small to accommodate the increased volume of the muscle.

There are two types of compartment syndromes: acute and exertional. In an acute compartment syndrome, the volume of the muscle increases due to some type of trauma, such as a fracture or severe soft-tissue injury. Immediate surgical decompression of the compressed compartment is required in the acute compartment syndrome. The acute form is progressive and leads to the destruction of the contents of the compartment. The exertional compartment syndrome is chronic, and there is usually no tissue destruction (10).

Rarely does the intense use of muscles, as when doing strenuous exercise, result in an acute compartment syndrome (3,8). Fewer than 100 cases of exercise induced compartment syndrome in the acute form have been documented in the literature.

#### **EXERTIONAL COMPARTMENT** SYNDROME

The athletic trainer is much more likely to encounter an athlete with an exertional compartment syndrome than an acute compartment syndrome.

In the exertional compartment syndrome, exercise is thought to increase the intercompartmental pressure to the point of small vessel compromise (3,5,8). Several factors contribute to the increased intercompartmental pressures found in individuals with a chronic exertional compartment syndrome. First, the volume of the muscle expands as much as 20% with vigorous exercise (3,5,8). This increased volume is thought to occur through either one or a combination of the following: increased capillary permeability (3); mechanical expansion during a strong isometric or isotonic contraction (3,5,8); postexercise fluid retention (10); decreased venous return due to elevated intramuscular pressure (10). Because some individuals have compartments that are unyielding, the compliance of the surrounding fascial covering can not accommodate the 20% increase in the muscle volume with exercise. Size of the compartment is also a factor which can increase the intercompartmental pressure. Normal muscle hypertrophy as seen in trained individuals can further limit the space available for increased muscle volume during exercise.

Individuals with chronic exertional compartment syndrome have characteristic symptoms of pain, muscle weakness, paresthesias and increased compartmental pressures. The pain is "crampy" in nature and onset is at a consistent point in the training regimen. The symptoms are in most cases confined to the anterior or lateral compartments and generally subside once the exercise is stopped.

Bilateral involvement is common, studies have reported an incidence rate of between 75%-95% of patients with bilateral symptoms (3,7,10). Therefore, one should suspect an exertional compartment syndrome if a patient presents with pain in both legs, which involves the anterior or lateral compartment.

Pain is the most noted symptom, but associated symptoms of muscle weakness, paresthesias, foot drop and fascial hernias are sometimes noted. Muscle weakness of the involved compartment and sometimes a foot drop will be evident after exercising (3,5). Recall that each compartment contains a peripheral nerve, and that the most involved compartments are the anterior and the lateral. A foot drop would occur if the foot extensor muscles and peroneal muscles were affected. Paresthesias of the dorsum of the foot have also been documented after exercise (3). This suggests that the superficial peroneal nerve is affected. Muscle hernias have been noted from 20-60% of patient populations (3,4,7,10). A

Susan E. Genuario is a graduate of West Chester State College. She earned her graduate degree at the University of Cincinnati. Presently she has taken a leave of absence to raise her first child

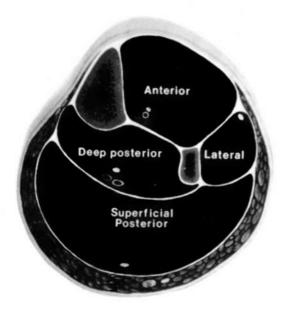


Figure 1. The four compartments of the lower left leg. Reproduced by permission from: Mubarak SH and Hargens AR: Diagnosis and Management of Compartment Syndromes. St. Louis, 1981, C.V. Mosby Company (9).

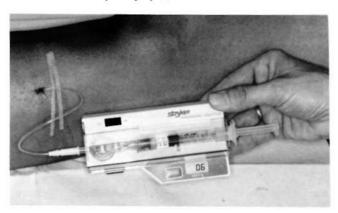


Figure 2. Catheter inserted into the anterior compartment of the left leg.

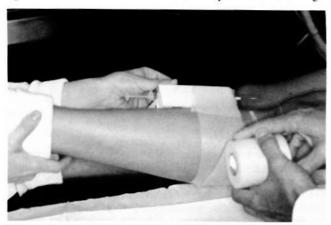


Figure 3. Pressure Monitor being taped to the leg of a patient.

muscle hernia in the lower one-third of the leg overlying the intramuscular septum between the anterior and lateral compartments was noted in 39% of patients with chronic compartment syndrome; a control group of normal subjects had a less than 5% occurrence (4).

Confirmation of an exertional compartment is best accomplished by compartment pressure monitoring. This involves the insertion of a catheter into the involved compartment (Figure 2). Using sterile technique, a physician threads the catheter into the suspected compartment. The catheter is sutured into place and attached to a small portable monitoring device (Stryker Intra-Compartmental Pressure Monitoring System). This device is so small that it allows the athlete to run with the monitor strapped to the lower leg (Figure 3). Pressure measurements are taken at rest, immediately after exercise and five minutes post exercise. Fronek et al. (4) have set volumes of intramuscular pressures of ≥ 10 mm Hg at rest and/or ≥ 25 mm Hg five minutes after exercise as a positive sign of a chronic exertional compartment syndrome. When tested, normal subjects will have post-exercise pressures that fall rapidly and are at or near normal resting levels within five minutes (13 +/- 6 mm Hg) (4).

Treatment of the exertional compartment syndrome requires a fasciotomy in which all the compartments are completely released through small skin incisions. Relief of symptoms is quite high with 85-92% pain relief post fasciotomy (4,7). Conservative treatment yields an appreciable change in symptomatology, only if the patient decreases activity or eliminates activity to control symptoms. This is not always

acceptable to the athlete.

#### STRESS FRACTURE

A stress fracture is a partial or complete fracture of bone due to its inability to withstand non-violent stress that is applied in a rhythmic, repeated subthreshold manner (3).

Bone is constantly undergoing metabolic activity, old bone is constantly being broken down, while new bone is then formed in its place. This normal remodeling of the bone matrix is thought to contribute to the development of stress fractures. Formation of new bone lags behind the removal of old bone, and the bone is therefore weakened and susceptable to fracture (11).

Early diagnosis of a stress fracture is best obtained with a bone scan. Roentgenographic evidence is apparent two to three weeks after the initial onset of pain as new bone callus begins to appear. In a study of 62 patients, an initial roentgenogram was positive in only 47.2% of the cases, but

95.8% of the bone scans were positive (11).

The patient often presents with a history of an increase in his/her training regimen, which is followed two to five weeks later with the insidious onset of pain. The pain is focal and at first only present after exercise. The athlete who continues to train, however, will have increased pain that is not relieved by rest. On physical exam, localized tenderness and soft tissue swelling may be evident. Thickening of the soft tissues and palpation of the bone callus is sometimes appreciated on lower leg stress fractures. Percussion to the bone is occastionally positive.

Treatment of stress fractures for the most part is conservative. Many times the simple elimination of the cyclic loading which produced the stress fracture is sufficient enough to allow healing. Occasionally it will be necessary to immobilize the affected part with a cast. De-conditioning can be

avoided by having the athlete swim or bike.

Patient counseling is an important part of reducing the reoccurrence of a stress fracture. Training techniques, training surfaces, footwear and analysis of running gait should be evaluated before the athlete resumes training. A gradual resumption of training is recommended once the athlete is pain free.

#### SHIN SPLINTS

The term shin splints is both misleading and ambiguous when used to describe lower leg pain. The Standard Nomen-

clature of Athletic Injuries (1) defines shin splints as: "Pain and discomfort in the leg from repetitive running on hard surface or forcible excessive use of foot flexors; diagnosis should be limited to musculotendinous inflammations, excluding fatigue fractures or ischemic disorder." The location of the pain should then be considered and divided into an anterior or posterior shin splint syndrome (2). Differentiation between musculotendinous inflammation and a stress reaction of bone as seen in the medial tibial stress syndrome should also be considered when classifying the types of shin splints (3,6).

**Anterior Shin Splint Syndrome** 

In the anterior shin splint, the tibialis anterior is the muscle most often inflammed. An overuse syndrome develops because the tibialis anterior is involved in several phases of the running gait. This muscle at heel strike acts as a decelerator and at midstance prevents "foot-slap" (2). Many times a muscle imbalance results when the posterior muscles are strengthened through running while the anterior muscles remain weaker than the calf. A varus foot or a forefoot imbalance or malalignment can also contribute to an anterior shin splint (2).

The pain and tenderness are commonly found along the lateral border of the tibia along the medial crest (12). Active dorsiflexion and passive plantar flexion will increase the pain.

Anterior shin splints are seen in athletes who perform increased amounts of uphill work in their training regimen. It is also seen frequently in sprinters. Changes in training surfaces, especially to a hard surface, can cause anterior shin pain. A shoe with a hard heel can also aggravate the problem.

Treatment should consist of rest, ice, strengthening of the anterior muscle groups, stretching of the posterior muscle groups and modification in training regimens (2,12).

Posterior Shin Splint Syndrome

In the posterior shin splint, the posterior tibialis longus, flexor digitorum longus, and flexor hallucis longus muscles become inflammed. These muscles are active after heel contact. Runners with abnormal foot pronation are most affected

Pain is often localized to the insertion of the posterior tibialis muscle at the tibia (12). Active inversion of the ankle will increase the pain.

A shoe with adequate shock absorption is important when treating the posterior shin splint (2). Correction of excessive pronation with an orthotic may eliminate the problem.

Treatment should consist of rest, ice strengthening of the

affected muscles, heel cord stretching and modification in training regimens (2,12).

#### MEDIAL TIBIAL STRESS SYNDROME

Some authors believe a more accurate term for pain in the distal third of the tibia is medial tibial stress syndrome, not shin splints (3,5,6). There is some question as to whether the pain associated with the medial tibial stress syndrome is due to the tibialis posterior muscle. Tenderness is localized to the bone and not the tendon, the posterior medial aspect of the distal tibia is not an area of muscle origin and stressing the musculotendinous unit does not increase or decrease pain (6). Bone scans show diffuse uptake, three characteristics which differentiate a medial tibial stress syndrome from a stress fracture on bone scan are: 1) involvement of the posterior tibial cortex; 2) longitudinal orientation of lesions with involvement of one third or more of the length of the bone; and 3) varying intensity of trace uptake along the length of the lesion (5). Pain is present with weight bearing and is relieved by rest. Direst palpation causes pain which is diffuse in nature.

Rest if the most effective treatment with a gradual resumption of activity. Proper shoe wear with adequate shock absorption is beneficial. Relief of medial tibial stress syndrome was not obtained by taping or the use of arch supports in a study of 26 patients (6).

#### DIFFERENTIAL DIAGNOSIS

Table I gives an overview of the subjective and objective findings in making a differential diagnosis between exertional compartment syndrome, stress fracture and shin splints. It is important for the athletic trainer to be able to delineate between each. A careful and accurate diagnosis enables a proper treatment regimen to be prescribed, thus insuring a safe return of the athlete to his/her sport.

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Table I **Differential Diagnosis** 

	Exertional Compartment Syndrome	Stress Fractures	Anterior Shin Splint	Posterior Shin Splint	Medial Tibial Stress Syndrome
Anatomical Location	Anterior or Lateral Compartment	Any Bone in the Lower Extremity	Tibialis Anterior	Post. Tibialis Flexor Digitoroum Flexor Hallucis Long	Posterior Medial Distal Tibia
Bone Scan	Negative	Positive	Negative	Negative	Diffuse Uptake of
Compartment Pressure	Positive	Negative	Negative	Negative	Negative
Pain	"Crampy"	Focal, Not Relieved By Rest	Active Dorsiflexion Passive Plantarflexion	Active Inversion	Weight-Bearing Relieved by Rest
X-Rays	Negative	Positive 2-3 Weeks After Initial Onset of Pain	Negative	Negative	Negative

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## The Background Required of Athletic Trainers To Evaluate Knee, Shoulder and Ankle Injuries: Survey of Orthopaedists

Bonnie L. Rauls, BSEd, MNS, ATC Christina L. Frazier, PhD William P. Thorpe, MD

The evaluation of an injured joint by an individual who lacks adequate preparation and experience could result in further damage to the injured joint. This might be caused by improper manipulation of the joint during the evaluation, or faulty interpretation of the examination lead-

ing to mismanagement of the injury.

It is essential that individuals who are learning the techniques used for injury evaluation do not place the athletes they test at unnecessary risk of further injury or complications. Since the chances of this happening may be minimized if the individual has an appropriate educational and experiential background, our objective was to study the level of education and/or experience needed for evaluating injuries to a specific joint.

#### MATERIALS AND METHODS

A random sample of orthopedic surgeons, who were members of the American Orthopaedic Society For Sports Medicine, was surveyed. The sample was obtained by assigning every second individual on the Society's 1986 membership list to a subset of the study population in the following order: knee, ankle, shoulder, knee, ankle, shoulder, knee. This population was chosen because of their familiarity with the anatomy of the joints, athletic injuries, and procedures used in injury evaluation. We assumed their knowledge would allow them to judge the inherent risk of each procedure and the level of manipulative skill and understanding of the joint needed to perform the procedure with minimal risk to the athlete. Forms were developed listing manipulations and observations commonly used to evaluate injuries of the ankle, shoulder and knee. These were grouped into four main categories: palpation for tenderness, range of motion (ROM), joint stability, and special tests. One hundred evaluation forms for the ankle, 100 for the shoulder, and 150 for the

knee were sent to the physicians.

Participants of this survey were asked to designate the lowest classification of evaluator who they thought would be capable of properly performing a given manipulation or observation, using the following classification: category 1, an inexperienced athletic trainer with less than 900 hours of training experience and no specific course work; category 2, a more experienced athletic trainer having 900 or more clinical hours and/or course work such as Anatomy, Physiology and other athletic training courses; category 3, NATA Certified Athletic Trainer; and category 4, an Orthopaedic Surgeon. In establishing the student athletic trainer categories, we included characteristics of students in both internship and curriculum programs. Since students in internship programs were required to have 1800 hours of supervised clinical activity (1), the halfway point, i.e. 900 hours, was used to separate the inexperienced and experienced student athletic trainers in internship programs. The advanced course work was used to place curriculum students in the experienced category, since fewer clinical hours, i.e. 800, are required in curriculum programs (1).

In addition, the survey participants were asked to indicate the type(s) of athletic trainer(s) with whom they work, and were encouraged to provide any comments concerning the

survey.

#### RESULTS

Of the 350 physicians surveyed, 113 (32%) responded, an acceptable return rate for a mail survey (1). For the individual joints, the response rates were 30% for the knee, 32% for the shoulder, and 36% for the ankle. All indicated that they had experience working with an athletic trainer in one or more settings; 75% worked with college or university athletic trainers, 62% interacted with high school athletic trainers, 53% were associated with athletic trainers at sports medicine clinics, and 35% worked with professional team athletic trainers.

The survey instrument was designed to obtain the recommendations of the orthopedic surgeons and no formal hypothesis was tested. Since the data are nonlinear they are not appropriate for inferential statistics. Therefore, descriptive

statistics are presented.

The data generated from the ankle, shoulder and knee evaluation forms are presented in Tables 1, 2 and 3 respectively. When the data for the joints are compared, some consistencies in the recommendations for each manipulation/ observations category are revealed. Nearly one-half of the respondents thought the inexperienced athletic trainer should

Bonnie Rauls was a graduate assistant athletic trainer and graduate research assistant in the Department of Biology at Southeast Missouri State University pursuing an MNS in Biology during the course of this study. Currently she is employed as an athletic trainer at HEALTHSOUTH Rehabilitation Center of St. Louis.

Christina Frazier is a Professor of Biology at Southeast Missouri State University. Her doctorate from Yale University is in Epidemiology.

William Thorpe is an Orthopaedic Physician with Orthopaedic Associates in Cape Girardeau, Missouri. He holds an adjunct appointment in the departments of Biology and Health, Physical Education and Recreation at Southeast Missouri State and currently works with athletes from Southeast Missouri State and Southern Illinois University-Carbondale.

Correspondence should be addressed to: Bonnie Rauls, ATC, 3616 Pioneer Dr., Imperial, MO 63052, (314) 296-2792.

have the knowledge and experience necessary to perform the palpations for tenderness. Most preferred to have at least an experienced athletic trainer do ROM testing. A definite majority of the physicians indicated that an individual should be certified before performing joint stability tests. In order to do most special tests, the evaluator should be a certified athletic trainer, according to the majority of physicians. In general, the physicians recommended slightly more education and experience when the knee was evaluated and less for evaluations of the shoulder.

#### DISCUSSION

When the data are reviewed, a few trends appear to surface. Most of the physicians agree it takes more skill and

knowledge to successfully perform and correctly interpret joint stability and special tests than it does to palpate and perform the ROM test. Therefore, they recommend that an individual have substantial knowledge and experience before performing the manipulations involved in joint stability and special tests. In addition, the physicians clearly recommended that the evaluator have a more extensive background to perform the passive ROM tests than the active ROM tests. During passive ROM testing, movement of the joint is controlled by the examiner and not the injured individual, thus there is a greater risk of further damage if the procedure is improperly performed. Further, the physicians appeared to be cautious when it comes to allowing a non-certified individual to perform any evaluation procedures on the knee.

Table 1
Recommended Background For Performing Specific Manipulations/Observations On The Ankle

	CATEGORY OF EVALUATOR <sup>a</sup>					
	INEXPERIENCED STUDENT TRAINER	EXPERIENCED STUDENT TRAINER	CERTIFIED ATHLETIC TRAINER	ORTHOPEDIC SURGEON		
PALPATION FOR TENDERNESS						
Bony Processes:	47 <sup>b</sup>	39	11	3		
Soft Tissue:	47	42	11	3 0		
RANGE OF MOTION						
Active:	28	52	19	0		
Passive:	28 25	44	31	0		
JOINT STABILITY						
Inversion/Eversion:	14	17	67	3 6		
Anterior/Posterior Draw:	17	14	64	6		
SPECIAL TESTS						
Homans' Sign:	11	11	47	31		
Achilles Reflex:	14	11	50	25		
Reading X-Rays:	0	0	0	100		

a See text for description of categories.

Table 2
Recommended Background For Performing Specific Manipulations/Observations On The Shoulder

	CATEGORY OF EVALUATOR <sup>a</sup>					
	INEXPERIENCED STUDENT TRAINER	EXPERIENCED STUDENT TRAINER	CERTIFIED ATHLETIC TRAINER	ORTHOPEDIC SURGEON		
PALPATION FOR TENDERNESS						
Bony Processes:	48 <sup>b</sup>	45	6	0		
Soft Tissue:	48 <sup>b</sup> 52	35	13	0		
RANGE OF MOTION						
Active:	26	61	13	0		
Passive:	13	55	32	0		
JOINT STABILITY	10	16	58	6		
SPECIAL TESTS						
Yergason (Biceps Tendon):	10	42	39	6		
Drop Arm Test (Rotator Cuff):	10	29	52	10		
Apprehension For Dislocation:	6	32	48	13 3		
Shoulder Shrug:	13	39	45	3		
Reading X-Rays:	0	0	3	97		

a See text for description of categories.

b Percentage of respondents who recommended this category. Total may be less than 100% since some individuals did not respond to all items.

b Percentage of respondents who recommended this category. Total may be less than 100% since some individuals did not respond to all items.

Table 3 Recommended Background For Performing Specific Manipulations/Observations On The Knee

		CATEGORY OF I	EVALUATOR <sup>a</sup>	
	INEXPERIENCED STUDENT TRAINER	EXPERIENCED STUDENT TRAINER	CERTIFIED ATHLETIC TRAINER	ORTHOPEDIC SURGEON
PALPATION FOR TENDERNESS				
Bony Processes: Soft Tissue:	27 <sup>b</sup> 27	60 56	13 16	0
RANGE OF MOTION	» <del>-</del> ,			
Passive: Active:	9 20	53 62	38 18	0
JOINT STABILITY				
Valgus Stress:	0	29	67	4
Varus Stress:	O	29	67	4
Anterior Draw:	0	24	67	9
Posterior Draw:	0	20	71	9
Rotatory Test:	0	16	67	18
SPECIAL TESTS				
McMurray (Circumduction):	0	11	49	40
Apley's Compression/Distraction:	0	11	47	40
Pivot Shift/Jerk/Bounce Home:	0	7	49	47
Patella Femoral Grind:	2	18	56	22
Patella Dislocation/Subluxation:	0	13	58	29
Patellar Reflex:	4	36	44	13
Effusion:	7	38	40	16
Reading X-Rays:	0	2	7	89

See text for description of categories.

Percentage of respondents who recommended this category. Total may be less than 100% since some individuals did not respond to all items.

Whether this was a function of the physicians who responded or the joint itself, cannot be determined from our data. A literature search failed to reveal publications on this topic.

In their comments several noted that no matter who performed the examination, test interpretations and all injury management decisions should be relegated to the certified athletic trainer and physician. One indicated that he had "seen important findings missed and serious damage done by less than experts" who performed joint stability and special tests on the knee.

Although the physicians were not asked to comment on the specific requirements of Athletic Training education programs, their opinions should not be ignored by those involved in both internship and curriculum programs. NATA has prepared thorough lists of competencies to be mastered by individuals in approved curriculum (3) and internship (4) programs before they take the certification examination. Guidelines for the development and implementation of NATA approved undergraduate and graduate athletic training education programs (5,6) and internship programs (4) have been published. None of these documents recommend a sequence for the competencies nor do they provide a suggested framework for integrating coursework with practical skills. Skills, including those for injury evaluation, should be taught in an orderly sequence. A well developed foundation of cognitive material integrated with practical learning is necessary to ensure that the student develops a complete understanding of both the injury and the evaluation process.

Over and over the respondents indicated the need for specific educational levels and experience for an individual to perform most aspects of an injury evaluation. When more developed skills are needed in order to avoid further damage to the injured joint while performing an evaluation, more educational background and experience are recommended.

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## Facilitating Team Grieving: A Case Study

Richard Rav. ATC Joyce Hanlon, MSN, CS Reverend Gerard VanHeest, M Div

ABSTRACT: Dealing with a death on an athletic team is a difficult and challenging process. Although athletic trainers are not frequently called upon to help facilitate grieving for athletic team members, situations may occur which require these skills. This article uses an actual death on a college football team to illustrate the typical grief process. In addition to describing the steps implemented to facilitate grieving in this particular case, several recommendations are presented to help those associated with athletic teams deal with death in a proactive manner.

common fear held by many athletic trainers is the possibility that an athlete on one of their teams may die while in their care. The emotional and psychological fallout from such a catastrophe affects not only the athletic trainer but the team members and coaching staff as well. If the deceased athlete is a student, the emotional needs of the student body and greater campus community cannot be ignored. The purpose of this paper is to describe the grief response that occurred following the death of a team member. In addition, we will present some guidelines to help prepare athletic trainers, coaches, and other persons intimately associated with the athletic team and the student body to effectively copy with the probable consequences of the death of a team member.

#### **CASE HISTORY**

The case in point was a 19-year-old sophomore defensive back on the Hope College football team. Although he was not a first string player, he was a well-liked and popular member of the team and the student community at our small, church affiliated, liberal arts college. His medical background included a history of asthma and allergy to ragweed, mold, and fungi. His asthma had been well controlled with theophylline and an albuterol inhaler. He had never suffered an asthma attack while participating in athletics. Although he had suffered few athletic injuries in the past, he was being treated with therapeutic modalities and exercise for an ankle sprain he had suffered in the previous week's game. He did not practice on the day of his death because of his ankle

That evening at approximately 12:10 a.m. the subject collapsed without warning in the hallway of his dormitory. He had spent the evening with friends and had complained of no symptoms. A student trained in CPR began resuscitation while the emergency medical service and campus police were being summoned. When paramedics arrived they found the subject to be asystolic and in acute respiratory arrest. The

subject was intubated and external cardiac compressions were continued while he was transported to the emergency department of the local hospital. Despite the continuing efforts of the emergency room staff, the subject was pronounced dead at approximately 1:15 a.m. The official autopsy report listed the cause of death as acute asthma. The only drugs present at the time were a therapeutic level of theophylline and a trace amount of alcohol.

#### **GRIEF RESPONSE**

Several authors have addressed the subject of grief response. Bowlby (1) characterized the grieving process as occurring in three distinct cycles of protest, hopelessness, and reorganization. Kubbler-Ross (4), in her work On Death and Dying, described the grief process in terms of five interconnected and overlapping stages; shock/denial, anger, bargaining, depression, and acceptance. Her theory of grief response will serve as a model for discussion of a team's response to the death of a teammate. It is important to note that our discussion centers around the phenomenon of sudden

When a teammate is terminally ill, campus resources can be utilized to prepare team members and other concerned members of the student body for the impending death. Sudden, unexpected death obviously does not allow for anticipated grieving. Sudden death elicits many emotions and behavioral responses ranging from positive to negative forms of expression. The rapidity of events, with little or no time for psychological and emotional adjustment, may impede a successful grief resolution. This becomes problematic for both the team and, most importantly, for the individual team member who may be unable to complete the stages of grieving.

The experience of a young person's death also has important symbolic meaning for survivors. Generally speaking, young adults view themselves as strong, healthy, and relatively immune from death. The loss of a teammate often requires them to confront their own mortality, often leaving them with feelings of vulnerability and shaken identity. The sudden death experience can also severely strain a person's religious views and upset the preconceived notion that one exists in an orderly, predictable world. This incongruence can result in intrapersonal conflict between the person's belief in the goodness of God or the world and the harsh reality of the death of a friend (3).

Before describing the stages of grieving, we would like to emphasize several points. Although the various stages of grieving are presented here as if they were in distinct, separate cycles, they are generally interrelated and overlapping. The reaction to death is highly individualized and dependent on many factors including the level of involvement with the deceased athlete. Not everyone on the team will react in the same way because some teammates will not have developed close personal relationships with the deceased athlete. Readers should remember that the stages we have outlined

Richard Ray is Head Athletic Trainer and Assistant Professor of Physical Education at Hope College, Holland, Michigan 59423-3698.

Joyce Hanlon is Director of Counseling Services and Reverend Van Heest serves as Chaplain at Hope College.

are meant to be descriptive rather than prescriptive.

The first stage of the grieving process that is likely to be experienced following the sudden death of a teammate is one of shock and denial. Expressions such as "I can't believe it!"
"I was just with him." "He looked fine to me." are common during this stage. The feelings of shock and denial cause some team members to become immobilized with grief. It is not uncommon for team members to manifest actual physical symptoms such as headaches, chest tightening, dizziness, heart palpitations, nausea, and vomiting. Overt emotional signs can range from hysterical crying to laughing as the person struggles to regain emotional equilibrium.

The shock and denial stage of grieving can serve a useful purpose in that it helps the bereaved cope with the pain of the loss of a friend. The arrangements that often accompany the death of a teammate such as altering schedules to attend funeral services can facilitate this stage of grieving. The numbness experienced during the stage of shock and denial is protective in that it cushions the team member from the impact of the loss. Although denial serves an important purpose, adaptation to the reality of the situation is also important (7). When denial continues beyond two weeks the chances for maladaptation increase demonstrably.

The second stage of the grief response process is characterized by anger that is often demonstrated in diverse ways. It may be directed toward persons who are close to the bereaved team member. Family members, friends, other teammates, coaches, and athletic trainers often bear the brunt of the anger that accompanies the frustration of this stage. In addition to the anger that is often directed at specific persons, the bereaved may also express anger at such collective entities as "the college" or "the system." The team member may express this anger with such statements as "Why wasn't something done?" or "Why wasn't the ambulance here sooner?" Anger is often directed internally resulting in feelings of depression, worthlessness, and hopelessness. It is not uncommon for a bereaved team member to exhibit both anger towards others and depression simultaneously, although one is usually more intense than the other (7).

The next stage of grieving is characterized by bargaining. Bargaining behavior emerges from anger as the athlete attempts to make sense of, or to come to terms with, the often overwhelming sense of loss. It is not uncommon for teammates to express their wish that they had died instead of their friend or that things had turned out differently (3). Bargaining often takes the form of private vows or resolutions to change some behavior in honor of the deceased teammate. The probable outcome of this is the feeling of guilt that can accompany the inevitable transgressions of these vows or resolutions (4). Athletic trainers and coaches must be prepared to counsel a bereaved team member who demonstrates behaviors associated with guilt, such as depression and irritability.

Bargaining is sometimes manifested as avoidance of the feeling that the person should normally be experiencing after the loss of a teammate. This may be expressed by statements such as "I won't think about this until after the season is over. I have to get through the season first." This isolation of emotion is likely to cause the athlete to feel guilty because he is not overtly sorrowful. The isolation of emotion that accompanies bargaining may become so powerful that the athletes may not be able to effectively come to terms with their grief until it emerges during the next season in the form of an anniversary reaction. Athletic trainers and coaches must be alert to signs of delayed grief response in their athletes during the next year's season because of this phenomenon. At this point it will become necessary to confront and assist the athlete in dealing with this delayed grief so a healthy resolution and a renewed ability to cathect in other relationships may be experienced.

The next stage of grieving that is experienced by athletes

who have lost a teammate is depression (5). Depression which goes unresolved is potentially dangerous in that it can last for several months or even years. In addition, unexpressed anger may result in severe depression causing withdrawal from family, friends, and teammates. Physical symptoms and behavioral changes that are common during this stage include crying, irritability, inability to concentrate, and changes in eating, sleeping, and sexual habits. Feelings of hopelessness, helplessness, and worthlessness are common and are often expressed in statements such as "Who cares?" Nothing matters anyway."

The depression stage of the grieving process is one of the most painful and intense phases of grief resolution. It is not uncommon for bereaved athletes to wonder if they are ever going to get over their grief. The athletic trainer is in a good position to help at this point. By providing the opportunity for athletes to talk about their feelings in a non-judgemental atmosphere of trust, the athletic trainer or coach can help facilitate grief resolution more effectively and rapidly. Platitudes such as "Everything will be O.K." or "Your friend is happy in heaven", no matter how true, often do more harm than good since they can increase the athlete's sense of guilt for grieving which can lead to further isolation and despair. The bereaved athlete will be better served by the athletic trainer who acts as a "quiet listener." The athletic trainer can also assist grieving athletes by referring them to the appropriate mental health personnel for professional counseling. It is not uncommon for an athlete to express confusion and guilt over the common experience of "seeing" his deceased teammate in a crowd and realizing that it was only someone who resembled the person. By discussing this in an open and caring manner with the athlete and offering assurance that this is a normal experience, the athletic trainer will help decrease the athlete's sense of isolation and shame.

As the grieving resolves, the athlete will experience the final stage of the process which is acceptance. Acceptance is typically manifested in both emotional and behavioral events. The physical manifestations of grieving, such as sleeping and eating disturbances, will begin to resolve as normal living habits are restored. New emotional energy will often be expressed as joy and pleasure for life and the open and frank discussion of happy memories of events shared with the deceased teammate. Social contacts and enthusiasm for both life and sport are reestablished. The athlete who comes to realize that the loss is real and permanent will be able to find value and comfort in the life the team shared together. A positive outcome is achieved when the athlete experiences a decreased preoccupation with grief and is able to handle the problems of daily living more effectively (6).

#### FACILITATING TEAM GRIEVING

The purpose of this section is to relate the measures we undertook in the death of the aforementioned student athlete to help facilitate the grieving process for our football team. In addition, we will offer suggestions for athletic trainers and others who are in a position to facilitate grieving to help them deal with the death of a team member in a more proactive manner. It is our hope that by sharing the decisions we were forced to wrestle with, athletic trainers and others will be able to help team members deal with their grief in a way that will enhance the mental health of both the individual athlete and the entire team.

The first action taken after finding out that this athlete was seriously ill was to contact all the appropriate officials of the college. As a result, students and teammates were joined in the hospital waiting room by the athletic trainer, the chaplain, the head football coach, the athlete's position coach, the dean of students, the team physician, and even the college president (who would later send a letter to the parents of every student of the college explaining the death). After the attending physician determined that any further efforts at resuscitation would be futile, he conferred with the team physician. The team physician met with the officials of the college to inform them of the death and to map out a strategy to deal with the immediate needs of both the students in the waiting room and the deceased athlete's mother who was en route to the hospital.

The friends and teammates of the deceased athlete who were in the waiting room were informed of the death by the team physician. The aforementioned officials of the college were present to offer support. After a few minutes the group of students and some faculty and parents adjourned to the home of a local player. This provided an excellent opportunity for the members of the team who were present to vocalize their feelings in a secure, supportive atmosphere. Most of the teammates and friends were taken back to their dormitories within a few hours. In addition to the students who gathered at the hospital, there were many who remained at the dormitory awaiting news of their friend. Immediately after the death was announced at the hospital, the assistant chaplain of the college went to the dormitory to inform the students and to offer whatever assistance he could.

The next morning the head football coach contacted the team captains to inform them of the death. The coach used this opportunity to solicit counsel and support from the captains, and to allow them the opportunity to offer input into the plan of action that would be developed. It was decided that the captains would contact the team members and summon them to a meeting later that morning. At this meeting the team was informed in a more formal manner of the death of their teammate by the head football coach. The athletic trainer also spoke to the team to offer an overview of the medical aspects of the situation. This was important since it offered assurance to the other members of the team who suffered from asthma that their friend's death was a very rare occurrence. The college chaplain also spoke to the team and encouraged them to express their feelings and emotions in an open and honest manner. He offered to meet with players individually or in groups to provide counseling if they desired it.

The next day, an all-campus memorial service was held which was well attended by the entire campus community. Because the funeral would take place on the weekend when the team was scheduled to play an "away" game, many decisions needed to be made. The team met without the coaching staff before practice later that day and decided that they still wanted to make the trip. After the coaches were consulted, it was made clear to the team that anyone who wanted to skip the game and attend the funeral would be both allowed and encouraged to do so. Since the deceased athlete's home was along the route to the game, the team decided to hold a memorial service at the funeral home on the way out of town. This was a positive experience for the team in that it allowed them to come together as a unit and share their grief in an atmosphere that was non-threatening and supportive. The head football coach, team captain, and roommate of the deceased player all spoke at the memorial service. At the memorial service the player's jersey was retired for the season and small adhesive numbers were distributed for the players to apply to their helmets as a collective act of remembrance.

#### RECOMMENDATIONS

We offer several suggestions for athletic trainers who may have to deal with a similar situation. The first, and most important, is to draft a proactive action plan that details what the team and institutional response will be in the event of a death. Things to consider in such a plan include a predetermined list of who will be called and who will do the calling once the death is confirmed. Who will contact the family? Who will contact the other players on the team? Another very important consideration is the designation of a spokesperson. The media is almost certain to take an interest in the event and it is vital that one person be responsible for providing information. Miscommunication with the media in cases like this can be potentially embarrassing and harmful to the team, institution, and the deceased athlete's family.

Another important consideration is the plan that will be developed to facilitate the grieving of the individual athletes. The members of the team must be made to feel that they can approach and talk with members of the coaching and sportsmedicine staffs in a trusting, supportive atmosphere. In addition, the professional counseling services and the institution's chaplain must mobilize support for those team members who require their services. The team memorial service can serve an important function in facilitating the grieving process for members of the team, but it may also be appropriate to hold an all-campus service to provide a formal setting in which the student body and faculty can publicly express their support for the surviving members of the team.

Crafts (2) has developed an excellent set of guidelines to help institutions prepare for and deal with death on the college campus. Many of these recommendations can be adapted to non-collegiate athletic settings as well. It is important to remember that the death of an athlete on a campus needs to be dealt with at several levels including the college/school administration, student services department, and the athletic department. The following guidelines should be reviewed and implemented at the appropriate level depending on the institution.

The following guidelines are recommended:

To prepare for a possible death . . .

- Appoint a coordinator to direct the institutional response.
  Develop a communication system so the coordinator can be reached at any time.
- ·Educate staff regarding policies.
- •Design a checklist to avoid omission of important procedures.
- Refine the withdrawal process to avoid sending inappropriate correspondence to a deceased student-athlete.
  Develop clear, consistent policies for dealing with issues

such as tuition refunds, and lodging for relatives.

In reacting to a death:

- •Resist fears of institutional liability by being primarily concerned with the needs of the family and surviving campus community and team.
- Have other students with the same last name notify their families before the media is informed.
- Notify the family directly.
- Notify the family a second time within an hour to confirm the call, especially if calling late at night.
- Manage the media through the appointed spokesperson.
   Meet the family and assist them in making arrangements
- for lodging, transportation, and the like.
   Notify the entire campus community.
- Stop routine mailings home.
- Understand and be prepared to explain state, local, and campus policies.
- Draft a letter of sympathy.
- Arrange for a yearbook memorial.
- •Arrange for a memorial service.

The death of a young person is always a difficult and challenging experience. When the young person is an athlete with close ties to teammates and coaches, the experience can be even more confusing and disheartening. Athletic trainers are in a good position to help grieving team members by providing a non-judgmental, secure environment in which athletes are reassured that it is normal and acceptable to experience a broad range of feelings.

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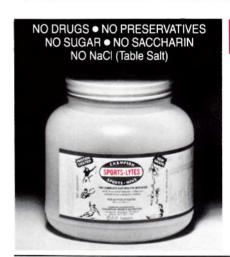
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## Tip From The Field

## Prevention of Anterior Thigh Contusions in Contact Sports

Donald Ray Zylks, PhD, ATC

ABSTRACT: Thigh contusions are considered one of the most debilitating injuries in athletics. Complications can lead to the development of myositis ossificans. This author discusses briefly the care of anterior thigh contusion. A method of prevention for athletes in contact sports who do not traditionally wear protection over the thigh is also presented.

Contusions to the anterior thigh, also known as Charley Horses, can be one of the most debilitating injuries athletes encounter (1,3). These injuries, can result in myositis ossificans in the most serious cases (1,2,3,4). In general, a conservative treatment protocol for this injury is stressed, using ice therapy and passive stretching to maintain flexibility (1,3,4), while avoiding heat treatments, ultrasound, and active stretching during the healing phase.

As in all athletic injuries, prevention of the anterior thigh contusion is the preferred method of management. The athlete who participates in a collision sport such as football is protected by the wearing of thigh pads in his football pants. Athletes who participate in contact sports such as soccer and basketball have traditionally not worn prophylactic protection for the anterior thigh. This has resulted in severe contusions for some athletes. One of the primary reasons for not wearing protective equipment has been the lack of a system to apply the padding that would be consistent with the uniform requirements of the particular sports.

The advent of new athletic wear intended for football has made it possible for basketball and soccer athletes to have protection that will possibly prevent the anterior thigh contusion. This new protection involves wearing a sports girdle such as the Stromgren Sport Compression Pant or the Bike thigh length girdle pant. This garment is made of a stretch material that allows the pant to fit in a fashion similar to that of bicycle pants. Each leg is made with a pocket for the insertion of a pad such as a football thigh pad. Thigh pads similar to the Bike Pro-Lite designed for youth and specialty players is especially well suited for use by basketball and soccer athletes when wearing the sports girdle. Smaller pads of orthoplast and foam can be fashioned if it is felt that the football pad is too bulky.

Currently, all members of the men's basketball team at

Western Illinois University wear girdle pants with pads inserted during practice sessions. Members of the team also wear the girdle pants during contests at their option.

The athletic training staff and coaching staff believe that the stretch girdle pants employed with thigh pads offer an essential new dimension to injury prevention for the thigh that can substantially reduce lost playing time.

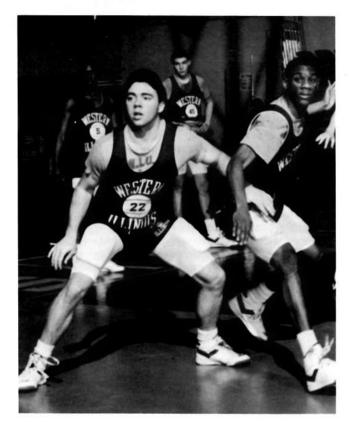


Figure 1. Basketball players wearing the thigh guard.

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Don Zylks is Assistant Professor of Physical Education and Athletic Training Program Director at Western Illinois University, Macomb, Illinois

## Student Athletic Trainer Forum

Deloss Brubaker, EdD, ATC

## Athletic Trainers and Liability: What Every Student Athletic Trainer Should Know

Rebecca J. Clifton, ATC

ABSTRACT: The responsibilities of an athletic trainer are vast in number. They range from the care, prevention, and rehabilitation of athletic injuries to the education and counseling of athletes. A student athlete trainer must know these responsibilities, and carry them out to the best of his/her ability. There are four main areas of exposure to liability of which an athletic trainer should be aware. These areas are negligence, failure to warn, battery, and the improper release of medical records/information. An athletic trainer has many ways to protect himself/herself from liability. Among these are good rapport with athletes and the parents, parental consent, contracts, pre-participation examinations, knowledge of sports and sports specific injuries, knowing the coach's philosophy, keeping accurate records, and knowing one's limitations. The best defense is a good offense, and the athletic trainer has many ways in which to build that good offense.

The field of athletic training and sports medicine is growing rapidly. Along with the growth, there has been an increase in the public's knowledge of the specialities. At the same time, the United States has seen a rise in the number of liability lawsuits. Due to the increased number of trainers about to enter the field of athletic training, and the increased exposure of the profession to the public, the number of lawsuits against athletic trainers is also likely to increase. As student athletic trainers, we need to learn how to prevent the likelihood of being involved in a liability lawsuit.

#### LIABILITY EXPOSURE — DAILY RISKS

An athletic trainer has many duties/reponsibilities including prevention of athletic injuries, evaluation, rehabilitation, organization, administration, and education and counseling of athletes.

The need of prevention and care of athletic injuries in itself appears to be a simple task; however, it has many components. The athletic trainer should assist the coaching staff in the warning of inherent risks. An inherent risk is the risk that is part of the sport in which the athlete is participating. There are three levels of comprehension when dealing with warnings, they are knowing (aware), understanding (what it means), and appreciating (what it means to the individual)

Rebecca Clifton is a graduate of Indiana State University and is currently attending Indiana University working on her Master's degree. EDITOR'S NOTE: This paper was the second runner-up in the Tenth An-

nual Student Writing Contest.

The physical conditioning and the knowledge of predisposing conditions are also parts of injury prevention. The athletic trainer and the coach should work together to develop a conditioning program, and to evaluate the strength and flexibility of the athletes. An athletic trainer should be able to recognize predisposing conditions by reviewing pre-participation medical examinations and medical histories (2).

Another component to the prevention of athletic injuries is the foreseeability of unacceptable risks. Unacceptable risks can range from a folded trampoline under a basketball goal. to environmental conditions (i.e., hot and humid). The athletic trainer should assist the coach in the inspection of the playing facility (1). During the inspection the athletic trainer and the coach want to seek out potentially dangerous situations and then decide how the situation can be corrected. Any dangerous situations that the coach and athletic trainer cannot amend should be reported verbally and in writing to the athletic director/principal. If they can amend the dangerous situation, they should do so as soon as possible, but they should still report the situation to the athletic director principal (1).

An athletic trainer should monitor high temperature and high humidity and make recommendations to the coach concerning the intensity and duration of a practice session (2).

The proper fitting of equipment is a very important part of injury prevention. The athletic trainer should assist the coach/equipment manager in the fitting of equipment. The condition of the equipment must also be checked (5). Only equipment certified by the National Operating Committee on Standards for Athletic Equipment (NOCSAE) should be used, and the athletic trainer should check for the certification on the equipment (i.e., football helmets) (11). If the certification is not on the equipment or if the condition is questionable, it should not be used. An athletic trainer should also warn the coach if players are mismatched in either size or skill. If the athletic trainer does not warn the coach, then the athletic trainer can be found negligent (5).

#### RECOGNITION AND EVALUATION

An athletic trainer is also responsible for the recognition and evaluation of athletic injuries. An athletic trainer must recognize when an injury is beyond his or her expertise and refer the athlete to a physician. The athletic trainer must also be responsible for treatment and rehabilitation of athletic injuries. An athletic trainer is expected to perform taping or other protective assistance when it is needed; however, athletic trainers can administer only those treatments that are within their realm and qualification (5).

#### ORGANIZATION AND ADMINISTRATION

The athletic trainer is responsible for the organization and administration of an athletic training program. The responsibility not only includes the training room, but also any student athletic trainers. The athletic trainer should check modalities on a regular basis, and have those serviced that need to be serviced. The athletic trainer is responsible if the student athletic trainer oversteps boundaries. The student athletic trainer should have knowledge of the head athletic trainer's reponsibilities, so that the student can be of assistance to the head athletic trainer. The student athletic trainer should not be given any more responsibility than can be handled (5).

In addition to all of those duties, an athletic trainer is also an educator and counselor for the athlete and the student athletic trainer (2). An athlete must have full confidence in the athletic trainer and be able to bring both physical and personal problems to the athletic trainer (10). The athletic trainer should keep the content of these physical/personal problems confidential, and the athletic trainer should not make promises that cannot be kept. All of the athletic trainer's duties are of equal importance and all should be carried out with due

#### LIABILITY EXPOSURE — FOUR MAIN WAYS

An athletic trainer is exposed to liability in many ways, but the four main areas of exposure are: 1) negligence, 2) failure to warn, 3) battery and 4) improper release of medical records. Negligence occurs when an athletic trainer fails to act as a reasonable and prudent athletic trainer would act in a similar situation. To determine if an athletic trainer is negligent, four factors must be proven, not just two or three.

The first factor is the presence of a duty. Presence of duty is asking if the athletic trainer owed a duty to the athlete. The second factor is breach of duty. Breaching of duty is asking if the athletic trainer did the duty that was owed to the athlete. The third factor is the cause of the injury. Cause of injury is asking if the athletic trainer's breach of duty caused the injury to occur. The fourth factor is extent of injuries. Negligence cannot be proven without all factors present (1).

Failure to warn is a newer claim. It is used when the injured athlete claims that he or she was not warned of the risks involved in the sport in which they were participating (7). Even if they were warned, they can claim that they did not understand the warning. This would cause the warning to be invalid. The athlete must understand that they best control the potential for injury. After the athlete, the next best source of control is the athlete's parents (9). Therefore, the parents must also know, understand, and appreciate the warning of the risks involved with the sport.

Another area of exposure is battery. Battery is the unlawful touching of another person without permission (6). An athletic trainer needs verbal consent from the athlete to evaluate an injury or to treat an injury. The athletic trainer may find it difficult to acquire parental consent, and even if the athletic trainer does have a signed consent form, it does not hold up well in a court of law. However, the consent form is a way for an athletic trainer to prove that he/she tried. Consent forms must be worded very carefully to stand up in court. This is very important because battery is much easier to prove than negligence (7).

The last main area of exposure is the improper release of medical records. Information should only be given out with the athlete's permission (4). An athletic trainer should take great care in discussing an athlete's condition with a third party if no consent has been given (7). An athletic trainer should not give information verbally, and the athletic trainer should not comment on the athlete's personality or injury rate

#### WAYS TO PROTECT FROM BEING HELD LIABLE

Fortunately there are many things that athletic trainers can do to protect themselves from lawsuits, and also to protect themselves if they are sued. Good rapport is an excellent way to protect themselves. The rapport between the athletic trainer and the athlete is very important. The athlete should get the impression from the athletic trainer that the athletic trainer is genuinely concerned. The rapport between the athletic trainer and athlete's parents is just as important. Parents must know that the athletic trainer is genuinely concerned and is administering quality care to their child. The reason for maintaining the proper rapport with the athlete and parents is simple; people do not like to sue friends who they believe care about them or their children (7).

The rapport between a physician and an athletic trainer is also very important. An athletic trainer should be aware of what authority a physician is willing to allow him/her. The athletic trainer must also know what action the physician expects him to take in a given situation. The relationship should be such that the athletic trainer and the physician are able to shift responsibility to one another if the need were to arise. An athletic trainer must always remember that he or she is an extension of the physician (7).

Another way for an athletic trainer to protect herself and the school, would be the use of a carefully constructed consent form. The consent form should be drafted by a lawyer. The athletic trainer should encourage the coaches to require a signed consent form from each athlete before the athlete can participate. The forms should be signed by the athlete and the athlete's parents (if the athlete is under age twenty-one). This requirement lends the opportunity for the parents and the athlete to review the inherent risks of the sport (7). The consent form should include consent for medical treatment in case an emergency should arise (4). This form should not be depended on in court because there are many loopholes that can be found in consent forms. Also, a consent form cannot protect an individual who is found negligent (1).

The athletic trainer should have a written contract with the school/clinic. The contract should define exactly what the duties of the athletic trainer are to be. The contract should also specify which population (IM athletes, PE students, varsity athletes, etc.) the athletic trainer is required and allowed to treat (5).

Another way for a school and an athletic trainer to protect themselves is to require a pre-participation physical. The physical should be required of every athlete in every sport (7). The athletic trainer and the team/school physician should discuss the minimum standards for which they will be screening. The physician performing the physical and the parents of the athlete should be required to sign the physical form. The more things a parent signs for the athlete to participate, the less plausiible the argument that "I did not see the form" (4). The physical examination forms should be inspected to make sure that all parts of the form have been completed and that all of the required signatures have been acquired (2).

An athletic trainer needs to be knowlegeable of sports specific injuries and of the coach's philosophy. The athletic trainer should have knowledge of the sport that she is working. If an athletic trainer is knowledgeable of the sport, she will find that the team physician will rely on her heavily as a source of information. If an athletic trainer understands the coach's philosophy, the job will be made easier. The athletic trainer will have a better working relationship with the coach, and the athlete will benefit from the relationship (7).

Record keeping is the most important and best source of defense in lawsuits. Records should consist of pre-participation examinations, medical histories, injury/accident reports, initial care, notes or any evaluation, physician referrals/recommendations, and a record of daily treatments (5,4). Records

can be used for more than defense; they can also be used to substantiate the need for new equipment and supplies. Records of injuries can also be used as evidence to promote change in training techniques (5). Records should be kept for at least seven years, and even longer when dealing with minors (10).

An athletic trainer must take an active role in staying upto-date. The athletic trainer should maintain current certification in both cardiopulmonary resuscitation (CPR) and advanced first aid. The athletic trainer should also attend continuing education credit. Journals, magazines, and seminars/conventions are excellent ways to stay up-to-date (4,7).

The best way for athletic trainers to avoid liability is to know their limitations. The best trainers know when to say "This is beyond me" or "I have no idea what is wrong" (7). Another part of knowing one's limitations is to be honest with the athletes and let them know that the treatments may not work, that poor results may be achieved (3). An athletic trainer should never try to predict the length of time that an athlete will be out of participation, or the number of years that an athlete may have left to play. If an athletic trainer gives a specific time for return to participation and it does not hold true, an athlete can sue for breach of warranty. An athletic trainer must always be careful of what and to whom statements are made.

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## **Medical Update**

Nina Partin, MEd, ATC

#### GENERAL MEDICINE

Combating Jet Lag

Athletics, especially on the professional, collegiate, and elite levels, require a great deal of travel. Athletes must be quickly transported across the country as well as internationally, in some cases in a very short period of time due to scheduling arrangements.

In any type of sport and at any level of competition, traveling can be a very important contributing factor in how the athletes compete. Scheduling can cause from two to five competitions to occur in one week, all on the road, and sometimes all in different time zones. It's very important for the athletic trainer, coach, and athlete to understand how to alleviate those factors that can affect performance. Sometimes it's the difference between winning and losing

For some, such travel induces a particular physiological stress, resulting in a syndrome that is identified as circadian dysrhythmia which will reflect a desynchronization of one's biological and biophysical time clock. The common term is "jet lag." Jet lag simply means a group of mental and physical symptoms, such as fatigue and irritability, following rapid travel through several time zones that probably results from a disruption of circadian rhythms in the human body.

The term circadian comes from the Latin word circa dies which means "about a day." It implies a period of time of approximately 24 hours. The body maintains about 300 functions rhythmically in a pattern over this 24 hour period; for example, the rise and fall of the body temperature or the tidal ebb and flow of the cortical steroid secretion (which produces the effects of the metabolic system). Under normal circumstances, these functions are synchronized and in harmony with each other. The body's mechanisms adapt at varying rates to time changes. Protein metabolism will adjust immediately, whereas others can take time. Adrenal hormones, which regulate metabolism and other body functions, may take as long as three weeks. Even the athlete's ability to think clearly is cyclical. The body functions also typically have a "high" and "low" point during the 24-hour period, causing performance to be affected by the time of day the competition occurs. As a rule, younger people adjust more quickly than older ones.

In addition to the body's circadian rhythm, traveling across time zones can also affect other physiological and psychological processes in the body. Flying at high altitudes, where there is little moisture in the air, can cause dehydration in the traveler's body, and, because of the high altitudes at which jets fly, sometimes symptoms of oxygen deficiency can occur, especially if one smokes or inhales carbonmonoxide filled smoke. Other effects that may come from traveling are reaction times, coordination, perception, pain threshold, moods, anxiety, motivation, and thinking processes. All these can be attributed to the disruption in the changes in body rhythms. Many athletes also have a problem with adapting to different environments as well, which may cause disorientation and irritability. The stress occurring in the jet travel only occurs when flying in either an east or west direction. Travel north or south has no effect upon the body. Some people are generally more susceptible to the syndrome than are others, but the symptoms can be enough to disrupt or interfere with one's ability to perform maximally. The symptoms of the jet lag syndrome can be any one of the following: anorexia, severe headache, blurred vision, dizziness, insomnia, or extreme fatigue. Athletes who have particular health problems such as asthma, diabetes, epilepsy, hypertension, or peptic ulcers should have medical advice if they are competing at a time of day unusual to their normal

The side effects of jet lag can be limited by a number of measures taken before, during, and after travel. Some general suggestions are:

Before flight

1. Consume fairly large amounts of fluids, particularly water and fruit juices. Cut down on coffee, cola, and other drinks that contain caffeine, and restrict totally any type of alcoholic beverages

2. Adapt the diet to enhance adjustment to time changes. One of the major factors that influences the degree of impairment in performance from jet lag is the diet, especially the type of food and the time it was consumed. There are certain types of foods that help the body adjust to the time changes easier than other foods. A meal containing high-protein foods (meat, dairy products, fish, poultry, eggs, and beans) stimulates the adrenalin pathway, causing increases in the arousal level. A diet composed of high carbohydrate foods (pasta, salad, fruit, desserts) will increase the insulin secretion causing an uptake of tryptophan, resulting in drowsiness. Alternating light and heavy meals before flight continually empties the body of glycogen and then replenishes it, causing the person's circadian rhythm to shift quicker to a new time zone.

3. Avoid sleep deprivation. When your normal bedtime arrives, try to get some sleep. Ideally, try to pick a departure time that allows you to board the plane at a time that will

force you to rise too early to stay up too late.

4. If at all possible, try to schedule the arrival time well in advance of the competition time; readjustment is estimated to take approximately 24 hours per time zone crossed. Obviously this is very difficult to do in some incidences.

5. Learn as much as possible about your destination before hand, such as the facilities, environment, customs, foods, etc. This will help your athletes adjust to the strange environment.

#### On the flight

- 1. Adjust your watch to the destination's time zone.
- Increase your fluid intake as before.
- 3. Those who wear contacts should remember to take solution with them on the plane due to the dryness of the cabin air.
- 4. Increase intake of high-fiber foods to prevent constipation.
- 5. Move around on the plane, periodically stand up and walk around as much as possible to help the blood circulate in the lower extremities and to help prevent fatigue.
- 6. Try to relax as much as possible. Listen to music, play cards, read, etc. This will help the time to pass more quickly. 7. Also, while on the plane, either sleep or don't sleep in the plane, according to your destination plans. If you are to arrive in the morning, try to sleep on the plane. If you are to arrive in the evening, try to stay awake as much as possible.

Upon arriving at your destination

 Immediately try to adapt to your new time zone schedule. If arriving in the morning, afternoon, or early evening, try to stay awake and follow the local schedule. If arriving at night, try to go to bed and get some sleep.

Don't attempt to perform any strenuous or highly skilled

activities upon arrival.

continued on page 83

## **New Products**

Bright Ideas By Watts, previously a travel bag manufacturer, has expanded into the athletic market and is announcing a new product line for athletic trainers. The Athletic Trainer's bags were designed with the help of athletic trainers at Brigham Young University and have been tested for quality and practical use.

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#### A TRAINER'S PRAYER

Dear Lord, Let all participants in the game play to the best of their abilities and allow the team with the most heart and desire to win the game. Let the winners act graciously and let the losers know they gave it their best shot. Protect all participants from injuries, but should they occur, give me the skill, knowledge, and perception to make the right decision. Amen.

Sincerely, Kent Evans, ATC Franklin Central High School Indianapolis, IN

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#### **Brochure Requests**

Requests for the brochure entitled "Careers in Athletic Training" should be sent to the National Office at 1001 East 4th Street, Greenville, N.C. 27834. Single brochures are supplied upon request at no charge. NATA officers and committees, schools having an approved athletic training curriculum, and those having an apprenticeship program are furnished multiple copies of the brochure at no charge.



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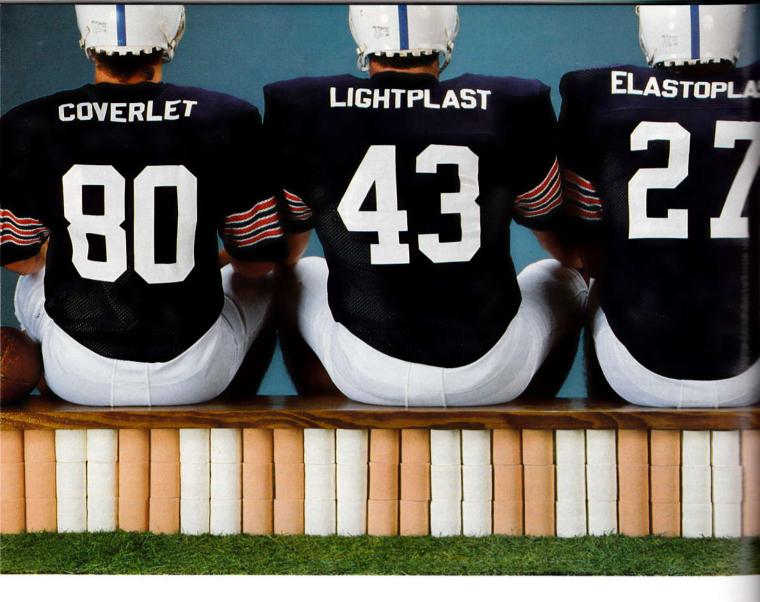
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## **Abstracts**

John Wells, PhD, PT, ATC

Kanakamedala P. et al.: Ulnar Nerve Entrapment at the Elbow Localized by Short Segment Stimulation. Archives of Physical Medicine and Rehabilitation 11: 959-963. November 1988.

Ulnar nerve entrapment across the elbow is a wellrecognized clinical entity. The nerve is less protected at the medial epicondyle and is, therefore, particularly susceptible to repetitive trauma. Precise localization of entrapment of the ulnar nerve can be made by short segment stimulation (SSS), commonly known as "itching" of the nerve across the elbow. During full flexion of the elbow, the aponeurotic arch between the ulnar and humeral heads of the FCU become taut. The capsular floor may bulge into the tunnel during flexion, which not only narrows the tunnels but also subjects the nerve to angulation. The capacity of the tunnel is, therefore, widened in elbow extension and narrows in flexion. It is easy to perceive that a shallow postcondylar groove exposes the nerve to external compression, and a narrow cubital tunnel makes the nerve vulnerable to constriction. Electromyography (EMG) was not done in normal subjects. The ulnar nerve was stimulated supramaximally 8 cm proximal to the recording electrode, at each point marked across the elbow, and in the upper arm at least 10 cm proximal to point P6. Compression of the ulnar nerve at the elbow is common, and its localization can be effected either by detecting slowing of sensory or motor conduction velocity across the elbow or by detecting a significant reduction in the amplitude of the evoked motor responses or stimulation of the nerve proximal to the site of the lesion.

> Betsy Nadler **UNC-Asheville**

Schafer, Susan C: Relieving Pain an Analgesic Guide. American Journal of Nursing 815-825, June 1988.

Pain may be defined as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage." Pain is always subjective. Acute pain follows injury to the body and generally disappears when the injury heals. Cancer pain typically has a specific cause and is perhaps best considered acute recurrent pain. Chronic pain persists beyond the expected healing time and often cannot be asscribed to a specific injury. The mainstay of management of acute pain and chronic cancer pain is, of course, drug therapy. Nonsteroidal anti-inflammatory drugs (NSAIDs) and aspirin are "general purpose" analgesics used to treat acute and chronic pain due to surgery or trauma, as well as systemic diseases such as arthritis and cancer. Narcotic analgesics are used to manage severe acute pain. Several other classes of drugs may enhance the effects of narcotics or aspirin-like drugs or have independent analgesic activity in some situations. Sedativehypnotic drugs (barbiturates) do not have intrinsic analgesic properties and are avoided in pain management.

> Brandi Schober **UNC-Asheville**

Raghaviah V. Kanakamedala, Chang-Zern Hong: Electrophysiologic Studies of the Median Nerve and Its Palmar Cutaneous Branches After Nerve Grafting. Archives of Physical Medicine and Rehabilitation 69; 334-347, May 1988.

In this paper, we describe serial electrophysiologic findings after nerve grafting in a patient with an incomplete injury of the median nerve at the wrist involving its motor fibers and the palmar cutaneous and index finger sensory branches. Since end-to-end anastomosis was not feasible, a 2 cm lateral antebrachial cutaneous nerve graft was sutured to the ends of the lacerated fascicle. Immediately after surgery, the patient received occupational therapy. Nerve conduction studies of bilateral median, left ulnar motor, left index finger sensory, and bilateral palmar cutaneous nerves were undertaken preoperatively and 13 weeks, 16 weeks and one year after the skin grafting. At follow-up evaluation four months after surgery, muscle strength was rated as follows: left thumb abduction, 4/5, opposition, 3/5, and second and third metacarpophalangeal joint flexon, 4-5/5. Electromyography revealed discrete motor unit potential recruitment and interference in the affected muscles. We believe therefore, that EMG and nerve conduction studies are useful tools in following progress of recovery after nerve grafting.

> Betsy Nadler **UNC-Asheville**

Per A. Tesch: Skeletal Muscle Adaptations Consequent to Long-term Heavy Resistance Exercise. Medicine and Science in Sports and Exercise S132-S134, October 1988.

Progressive heavy resistance exercise increases lean body mass or muscle mass. Studies on cat, simulating strength training, also suggest that the number of muscle fibers will increase in response to heavy resistance training. It has been suggested that weight lifters and power athletes possess a greater percentage of fast twitch fibers. Body builders, as opposed to Olympic weight lifters, power lifters, or other power athletes, tend to display lower capillary density than non trained subjects. Heavy resistance training emphasizes high-load, low-repetition exercises, will not result in capillary proliferation. Exercise induced hypertrophy was accompanied by attenuation of certain enzyme activities of importance for ATP regeneration. Strength training may induce changes in the muscle substrate levels. There is uncertainty whether endurance training increases triglyceride levels. Long term, heavy resistance training is associated with increased synthesis of myofibrillar proteins. Although rate of muscle glycogen synthesis appears to be enhanced following strength training, enzyme activities reflecting anaerobic metabolism are not increased in response to heavy resistance exercises.

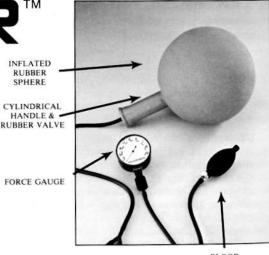
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## **Calendar of Events**

Jeff Fair, ATC, EdD, CCT

#### **MARCH**

**19-24** Team Physician Course: Part I, Orlando, FL. Contact ASCM National Center, P.O. Box 1440, Indianapolis, IN 46206-1440.

**31-April 1** Sports Nutrition, Raleigh, NC. Contact Sports Medicine Systems, Inc., Sports Nutrition Workshop, 830 Boylston Street, Brookline, MA 02167.

#### APRIL

- 5-8 International Isokinetic Congress, Lake Tahoe, NV. Contact John W. Halback, OSER, 5050 King Street, La Crosse, WI 54601.
- **6-8** Sports Medicine Injuries: Update and Treatment for the 90's for the OT and PT, Kansas City, MO. Contact American Academy of Orthopaedic Surgeons, Department of Education Course Operations, Park Ridge, IL 60068-4058.
- **28-30** Knee Ligament Rehabilitation, Valley Forge, PA. Contact Knee Rehabilitation Institute, Box 1003, Berwyn, PA 19312.

#### MAY

- **4-6** The Running Foot: An Advanced Approach to the Foot and Running, Bloomingdale, IL. Contact Chicagoland Orthopaedic Rehabilitation Services, Ltd., CORS, 7600 West College Drive, Palos Heights, IL 60463.
- **5-7** Wisconsin Knee Symposium, LaCrosse, WI. Contact John W. Halback, OSER, 5050 King Street, Suite 001, La Crosse, WI 54601.
- **12-14** Pennsylvania Athletic Trainers' Society, Inc., Hershey, PA. Contact Bruce Barnhart, Athletic Trainer, California University of Pennsylvania, California, PA 15419.
- **31-June 3** ACSM's 36th Annual Meeting, Baltimore, MD. Contact ACSM National Center, P.O. Box 1440, Indianapolis, IN 46206-1440.

#### **JUNE**

- 2-3 Basic Isokinetic Course, La Crosse, WI. Contact OSER, 505 King Street, Suite 001, La Crosse, WI 54601.
- **4-7** Cramer Workshop, Eastern Kentucky University, Richmond, KY. Contact Bobby Barton, Eastern Kentucky University Athletic Department, Richmond, KY 40475.
- **4-7** Cramer Workshop at Oklahoma State University, Stillwater, OK. Contact Jeff Fair, Oklahoma State University Athletic Department, Stillwater, OK 74078.
- **12-16** Cramer Coaches Clinic, University of Oregon, Eugene, OR. Contact Rick Troxel, University of Oregon, Gerlinger Annex, Eugene, OR 97403.

- **18-21** Cramer Workshop Emporia State University, Emporia, KS. Contact John Baxter, Emporia State University, Department of Athletics, Emporia, KS 66801.
- **18-21** Cramer Workshop, Florida State University, Tallahassee, FL. Contact Randy Oravetz, Florida State University, P.O. Box 2195, Tallahassee, FL 32308.
- **18-21** Cramer Advanced Workshop, Northern Colorado University, Greeley, CO. Contact Dan Libera, Northern Colorado University, Greeley, CO 80639.
- **18-22** Cramer Coaches Clinic, Washburn University, Topeka, KS. Contact Steve Ice, Washburn University, 17th & College, Topeka, KS 66621.
- **18-23** Student Trainer Workshop, The Ohio State University, Columbus, OH. Contact Bill Davis, Assistant Trainer, The Ohio State University, 410 Woody Hayes Drive, Columbus, OH 43210.
- 21-23 Reaching New Realms. Nutrition in Risk Management, Seattle, WA. Contact Annette Warpeha, RD, 233 East 69th Street, #3M, New York, NY 10021.
- **21-24** The Art and Science of Sports Medicine, Charlottesville, VA. Contact Joe Gieck, University of Virginia, P.O. Box 3785, Charlottesville, VA 22903.
- **26-28** Sports Medicine Symposium, Cleveland, OH. Contact The Cleveland Clinic Educational Foundation, Dept. of Continuing Education, 9500 Euclid Avenue, Room TT-31, Cleveland, OH 44195-5241 or telephone 800/762-8173.

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

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Student Trainers Ken Locker Dallas Cowboys Irving, TX 75063

## Certification

#### Schedule of Sites and Dates

All regional sites are subject to a minimum of six candidates per site and limited to a maximum of forty candidates. Completed applications must be received by the Certification Office within the prescribed deadline for the examination date chosen.

January 22, 1989 - Deadline for the receipt of application is December 16, 1988 at 5:00 pm E.S.T.

Boston, MA Cheney, WA Chicago, IL Columbia, SC Costa Mesa, CA Fort Worth, TX Granville, OH Houston, TX

Kansas City, MO Montclair, NJ Orlando, FL Phoenix, AZ Pittsburgh, PA Richmond, VA Santa Clara, CA

November 19, 1989 - Re-Exam only - Deadline for the receipt of application is October 13, 1989 at 5:00 pm E.S.T.

Albuquerque, NM Anderson, IN Costa Mesa, CA Greensboro, NC Kansas City, MO

Madison, WI Mechanicsburg, PA Nashville, TN New Britain, CT Seattle, WA

May 21, 1989 - Deadline for the receipt of application is April 14, 1989 at 5:00 pm E.D.T.

Albuquerque, NM Anderson, IN Chicago, IL Columbia, SC Costa Mesa, CA Denver, CO Fort Worth, TX Houston, TX Kansas City, MO

Lexington, KY Mechanicsburg, PA Minneapolis, MN Montclair, NJ New Britain, CT Omaha, NE Portland, OR Santa Clara, CA Seattle, WA

July 9, 1989 - Deadline for the receipt of application is June 2, 1989 at 5:00 pm E.D.T.

**NATA Certification Examinations** 

Boston, MA Birmingham, AL Claymont, DE Costa Mesa, CA Dayton, OH Denver, CO Edinboro, PA Eugene, OR

Greensboro, NC Kansas City, MO Madison, WI Mt. Pleasant, MI Omaha, NE Santa Clara, CA

### Journal

The Journal office gets its mailing labels from the National Office. Labels for NATA members are produced from the membership roster as maintained and updated by the Membership Office. NATA members who do not receive a Journal should contact the Membership Office to check on their address of record. If an address change was made just prior to a Journal being mailed, it's possible that the change did not get to the Membership Office in time to have a correct label produced. If the member did not authorize Second Class mail forwarding with the post office, then that issue was probably thrown away when received at the post office. After a member has checked with the Membership Office at the National Office and determined that the address change was not received in time for a correct label to be produced, hence an issue was missed, then the member can purchase the back issue from the Journal office as long as the supply lasts.

NATA members are reminded that until such time as the National Business Office of NATA is moved from Greenville, they should continue to transact Association business through the Greenville office (i.e., Certification Continuing Education, Membership updates, address changes, etc.).

The Winterville office handles Journal advertising, production and non-member subscriptions.

#### **Journal Replacement Policy**

The Policy for handling claims for missing Journals due to address change is based on the stipulation that the notice of change of address be received in the National Office at least 30 days prior to publication, in order for the member to receive a gratis replacement Journal. If the member did not meet the "30 day" requirement, or did not authorize the post office to forward Second Class mail, then the responsibility for not having received the Journal rests with the member and a minimum replacement charge is made. New members and Reinstated members do not receive back issues published before their membership was validated. New members will receive the first issue published after NATA membership is in effect. Reinstated members (previously deleted due to nonpayment of dues) will receive the first issue published after confirmation of reinstatement is issued form the Membership Office

NATA members who do not receive their Journals should check with the Membership department of the National Office to determine if the membership roster reflects an incorrect address.

## **Placement**

#### UTILIZING THE POSITION VACANCY NOTICE SYSTEM

The new position vacancy notice system that has been installed, is a computer controlled voice system that will permit you to listen to job opportunities that are important to you. In the past, the hot line consisted of tapes that required you to listen from the beginning of the tape to the end of the tape to hear all the jobs currently available. In addition to this inconvenience, it was also necessary to call a separate phone number to inquire about graduate assistant positions. That has all been updated. Today you can call just one number, inquire about all positions by regions of your choice. All you need to access the system is a touch tone phone. The following describes how to use the system:

Step 1. Using a touch tone phone, dial (919) 752-1266 Step 2. The hot line will respond with a greeting message and instructions. Select 1 The instructions are: for High School Select 2 for Collegiate Select 3 for Private

Select 4 for Graduate Assistant

Select 5 to Hang up

Step 3. Simply touch the key on your telephone pad that corresponds with the entry you are interested in. Upon selecting an entry, the system will permit you to listen to all the available positions based on the regions established by the NATA

gions established by the NATA.

Step 4. When you have finished listening to the areas of interest, select number 5 on the touch tone pad. This will conclude your telephone call with the system

and you can simply hang up.

#### UTILIZING THE NATA BULLETIN BOARD SYSTEM

The new NATA bulletin board system that has been installed, is a computer based system that permits users with personal computers to share information, pass files back and forth, and interact with the electronic mail facility. By using the bulletin board system, you will be able to retrieve the complete list of job vacancies including contacts and phone numbers, send memos to directors etc. The more we all use the system, the richer it becomes and the more it will benefit us all.

The bulletin board system will permit up to four simultaneous users to call in and interact. This should be sufficient to provide you access without ever getting a busy signal. To use the bulletin board system, you must have the following equipment;

 Personal Computer . . .
 IBM PC/XT/AT/PS2, IBM Compatible, Macintosh, Apple II + /E/C, Commodore, or Tandy

 1200 baud modem either internal or external that is Hayes compatible

- Software package that will permit your computer to talk to the modem. It is also preferable to have the software capable of sending the information from the screen directly to your printer or to a disk file for later use.
- Software must be configured with the following parameters:

1200 baud 8 data bits 1 stop bit

N (for none) parity

Modem phone number (919) 752-0331

If you do not currently have a modem software and would like to purchase them, NATA can supply them so they work directly out of the box. We include the software so it is preconfigured, and will include easy to follow instructions on how to hook up the modem with your computer. For more information on obtaining the proper modem and software contact the Greenville headquarters at (919) 752-1725.

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Name		
Company		
Address		
City	State	Zip

### **Professional Education**

Guidelines Revision: The complete revision of the GUIDELINES FOR DEVELOPMENT AND IMPLEMEN-TATION OF NATA APPROVED GRADUATE ATHLETIC TRAINING EDUCATION PROGRAMS has been accomplished and is now available from the PEC Office. The former price of \$10.00 per copy has been retained for the new edition. All previous guideline revisions to the original 1984 document have been incorporated into this edition and this edition should be considered as the CURRENT guidelines. For copies, please send a check to the PEC Office, Department of Physical Education, Indiana State University, Terre Haute, Indiana 47809 or call (812) 237-3026 daily between 9:00 a.m. and 3:30 p.m., EST.

Guidelines Revision: The complete revision of the GUIDELINES FOR DEVELOPMENT AND IMPLEMEN-TATION OF NATA APPROVED UNDERGRADUATE ATHLETIC TRAINING EDUCATION PROGRAMS has been accomplished and is now available from the PEC Office. All previous guideline revisions to the original 1983 document have been incorporated into this edition and this edition should be considered as the CURRENT guidelines.

## **Public Relations**

#### 3-Year Study Finds 'Major Injuries' Up 20% In High School Football

(January 26, 1989, Chicago, IL) - Injuries that sideline high school football players three weeks or more rose 20 percent since 1986, even while the overall injury toll declined at the same rate, according to a 3-year study released today by the National Athletic Trainers' Association.

Thirty-six percent of 21,233 players monitored since 1986 sustained time-loss injuries at least one time, the study showed. Sixty percent of the injuries occurred during practice; 40 percent at games. While the overall injury toll fell to a projected 503,000 in 1988, from 636,000 two years earlier, the NATA expressed concern over major injuries, which rose from a projected 54,407 in 1986 to 65,634 last year.

Results reflect player participation in 32,530 games or practices since 1986. Projections are based on an average of just more than one million players who participated each year in football programs at about 15,000 high schools.

"The results are a mixed blessing," said John W. Powell, Ph.D., the research associate from the University of Iowa who directed the study. "The decline in minor injuries may be attributable in part to better coaching techniques, safer equipment and higher regard for health care. But it's the major injuries that keep coaches and school administrators awake at night, and they're defying the downward trend.'

Minor injuries, which accounted for 72 percent of the total, declined from 476,000 in 1986 to 351,000 last year. Moderate injuries, those that sideline a player 8 to 21 days, accounted for 17 percent of the total each of the three years for an average of 277,000 annually

The Greenville, NC — based NATA, a non-profit organization, conducts the studies to bring attention for the need to improve athletic health care in secondary schools. Currently, 16 percent of the nation's 20,000 high schools (which includes non-football schools) have a certified athletic trainer or professional with equivalent credentials, the NATA said.

Athletic trainers monitored 6,803 high school football players at 112 high schools in 1988. When factoring in multiple injuries to individual athletes, the projected injury toll in 1988 was 503,806. Earlier reports projected 516,716 football injuries in 1987 and 636,279 in 1986.

Powell, who has been conducting injury surveillance studies in college and professional sports since 1975, said the similarity of his findings in 1987 and 1988 suggests they are more accurate than results from the first year of the project.

"We projected about 100,000 more minor injuries in 1986 than in the last two years," Powell said. "That's probably more a reflection of aggressive record-keeping than aggressive football. Overall, however, I'm very comfortable with the findings."

NATA Executive Director Otho Davis said the research is proving helpful to school administrators.

"Athletic health care is gradually improving in the secondary schools, primarily because administrators and coaches recognize the inevitability of injuries, and the value of injury prevention programs," Davis said.

'Based on what we've learned from surveying our members, about 2,000 high schools have added athletic trainers to serve at the hub of their health care programs since 1985. That brings the total number of schools with athletic trainers to 3,200," Davis continued. "Our goal, and we think it is a realistic one, is to have athletic trainers at about half the nation's high schools by the year 2,000."

Dr. Powell noted that projections from the study are based on schools that have certified athletic trainers.

'Casual viewers of these results should take into consideration that our projections are based on schools that have sound health care programs in place," Powell explained. "We'd like to be able to compare our findings to schools that don't have athletic trainers, but there simply isn't anyone at those schools who is maintaining detailed medical records.

Surgical cases remained fairly constant all three years, ranging from a projected 13,258 in 1988 to 14,380 in 1986. The average number of football injuries that required surgery averaged 13,752 per year, or nearly one per school. Of those, 64 percent were knee-related. Forty-five percent of the surgical injuries occurred at practice.

"Practice-related injuries highlight the severity of the problem and the core of our concern," said NATA President Mark Smaha, head athletic trainer at Washington State University. "We now know that 6 out of 10 injuries occur during practice. At schools that lack on-site health care personnel, the burden of responsibility for providing health care then rests on the shoulders of the coaches. Few coaches want that added responsibility.'

Results of the 3-year study indicate the average high school with a football program can expect 36 time-loss injuries per year. Earlier studies in other sports found an average of 16 injuries per school in wrestling, and 16 in each school that has both boys and girls basketball programs.

"These studies reveal a consistent pattern of frequency, type and cause of injury," said Powell, who also supervises the National Football League Injury Surveillance Program. "We've tried to show athletes, their parents and school administrators what to expect.'

By June, the NATA plans to issue formal recommendations intended to help school administrators minimize the impact of sports injuries.

#### Quality Care A High Priority In Growing Number Of Secondary Schools

(January 26, 1989, Chicago, IL) — Athletic trainers are caring for interscholastic athletes in about 2,000 more high schools this year than in 1984, according to a membership survey conducted recently by the National Athletic Trainers' Association.

School districts that currently have athletic trainers on staff at most or all their high schools include those in Albuquerque, NM, Eugene OR, Fairfax County, VA and Dade County, FL. The assessment of Gary Wills, assistant principal and athletic director at Sheldon High School in Eugene, typifies sentiment echoed by administrators around the country.

"I think we have an excellent health care system," Wills said. "The presence of our athletic trainer takes an awful lot of pressure off the coaches. We have qualified people capa-

ble of making proper health care decisions.'

Adminstrators from Orange County Public Schools in Florida ensured that their 4,000 interscholastic athletes will be properly cared for when they announced last month that all 11 high schools will retain full-time NATA-certified athletic trainers next fall.

Unlike most high schools with certified health care professionals, the majority of which require athletic trainers to teach in the classroom, those in Orange County will employ people to serve purely as athletic trainers. The recommendation to the school board was made by Dr. Don Shaw, execu-

tive deputy superintendent.

"I wanted to do it for a long time," Shaw told the Orlando Sentinel. "I probably was slow personally in understanding the value of a trainer to the entire population of the school and the problem in hiring certified people under the present system. The situation has received national attention and we are now more educated to the needs."

NATA Executive Director Otho Davis applauds the deci-

sion by the Orange County School Board.

"Orange County will serve as a model for school districts throughout Florida," said Davis, who also serves as head athletic trainer for the Philadelphia Eagles. "Those school officials have made a clear statement that they are looking out for the health and well being of their athletes. They genuinely care about their students. We take our hats off to them."

Kent Knisley, who serves as president of the Athletic Trainers Association of Florida, agreed Orange County is

taking a significant step forward.

"The athletic trainers will have no teaching responsibility, which is ideal, simply because of the number of kids you deal

with in the high schools," Knisley said. "Most schools have between 300 and 400 student athletes.

"It is encouraging that a county that large has acted on what some others call a 'good idea, but an unaffordable one," Knisley added. "People throughout Florida have high regard for Orange County, and may look to see what's happening there. Maybe we're finally starting to make some headway with regard to the importance of proper health care in high school sports."

It has been 10 years since Dr. Mike Nelson, a pediatrician, successfully led a campaign to place certified athletic trainers in all 10 public high schools in Albuquerque. Since 1981, athletes have been ministered not only by a certified athletic trainer, but by one of 50 physicians who volunteer annually

to meet their health care needs.

"From an organizational viewpoint, our schools are better equipped than many junior colleges," said Dr. Nelson, who chairs the Committee for Sports Medicine in the American Academy of Pediatrics. "Our injury surveillance system is excellent. The care of our athletes has greatly improved, and athletic trainers are serving as role models for many of the athletes.

"I think the physician community clearly feels the program is working well," Dr. Nelson continued. "We're working now to bring assistant trainers into the system. It is a way of expressing our view that the program needs to expand, perhaps to facilitate improved fitness in the general school-age population."

Of the 11 high schools in Lane County, Oregon, which includes Eugene, eight have full-time athletic trainers. The other three have teacher-trainers. Nearly half of the students at Eugene's Sheldon High School participate in athletics.

"We start at noon and usually end late in the evening," explained Sheldon athletic trainer Mickey Clarizio. "The work is gratifying. We receive a teacher's salary and we're part of the teacher's union. I think we're in an ideal situation."

While the majority of coaches and school administrators acknowledge the value of having a certified health care professional on staff, many express concern about the cost.

"We made a conscious effort to allocate funds for this in Lane County," said Sheldon's Wills. "If we had to make a decision tomorrow between maintaining a sport or cutting the athletic trainer, we'd cut the sport. That's how important we feel it is."

### I. BACKGROUND ON THE NATA INJURY SURVEILLANCE STUDY

A. The purpose of the NATA's injury surveillance study is to determine the number and severity of time-loss\* injuries in high school football. The goal is to establish a strong foundation for estimating risks associated with high school athletics.

\*TIME-LOSS INJURIES are defined by the NATA as those that require the player to suspend activity for at least the remainder of the day the injury occurred, or the

day after onset of injury.

B. There were no fatal or catastrophic (paralyzing/brain damage) injuries directly related to football among the 21,233 players monitored in the NATA study. However, there is an average of 24 fatal or catastrophic injuries related to high school football each year, according to the "Annual Survey of Football Injury Research."

C. No conclusions can be drawn from this study with regard to natural grass versus artificial turf since the use of artificial surfaces in high school sports is minimal. But for the record, 96 percent of the injuries occurred on natural grass.

D. The research team was directed by John W. Powell, Ph.D., a research associate in the Department of Orthopaedic Surgery at the University of Iowa. Dr. Powell, a certified athletic trainer, also supervises the National Football League Injury Surveillance Program.

E. Funding for the NATA injury surveillance studies are provided in large part by The Quaker Oats Company, maker of Gatorade\* Thirst Quencher, and from the Athletic Products division of Johnson & Johnson Products, Inc.

#### II. REFERENCES

 The National Federation of State High School Associations (NFSHSA) reportedly represents 89 percent of U.S. high schools. The NATA arrived at its total

- number of high schools with football programs in the U.S. by dividing the number of NFSHSA by .89. In 1988, for instance, the NFSHSA reported 13,085 "11man" football programs among its member schools in its 1988-89 handbook (page 73). We divided 13,085 by .89 to arrive at the total of 14,702 football programs in the U.S.
- (2) The National Federation of State High School Associations (NFSHSA) reportedly represents 89 percent of U.S. high schools. The NFSHSA lists a total of 927,132 football participants on "11-man" teams at their member schools. We arrived at a total of 1,041,721 high school football participants in 1988 by dividing 927,132
- bv .89.
- (3) The National Federation of State High School Associations (NFSHSA) reported there were 13,085 high schools with 11-man football teams in 1988, 13,204 in 1987 and 13,854 in 1986. NFSHSA attributed the apparent drop in number of football programs to revision of its improved record-keeping system in 1987.
- (4) Fred Mueller, Ph.D., is the director of the Annual Survey of Football Injury Research at the University of North Carolina at Chapel Hill. For more information regarding fatal or catastrophic injuries in football, please contact Dr. Mueller at 919/962-2021.

#### PARTICIPATING SCHOOLS NATA HIGH SCHOOL INJURY STUDY

STATE/YEAR	SCHOOL	CITY	STATE/YEAR	SCHOOL	CITY
Alabama	Table 11 - Table 11 to Carry Street Avenue		87/88	Newcastle Chrysler H.S.	Newcastle
87	W.A. Berry High School	Birmingham	86	North Central High School	Indianapolis
Alaska	NABLELEL		86/87/88	West Lafayette H.S.	West Lafayette
86 Arizona	North Pole High School	Fairbanks	Iowa	I G: W . H S	
86/87/88	Page High School	Dogo	88 88	Iowa City West H.S.	Iowa City
86/87/88	Yuma High School	Page Yuma	88	Iowa City High School	Iowa City Eldridge
Arkansas	Tuma Tiigii School	Luna	86/87/88	North Scott High School North Tama County H.S.	Traer
86	Southside High School	Ft. Smith	86/87/88	Pleasant Valley H.S.	Pleasant Valley
California	Boutime Tigii bellool	Tt. Silini	86/87/88	Valley High School	West Des Moines
86	Carlsbad High School	Carlsbad	Kansas	valley riight deliber	West Des Montes
86/87/88	Chino High School	Chino	86/87/88	Newton High School	Newton
87	Christian Brothers H.S.	Sacramento	86/87	U.S.D. 377	Effingham
86/87/88	Clovis High School	Clovis	Kentucky		14 500 750
87/88	Hiram Johnson High School	Sacramento	86	Boyd County High School	Ashland
87	J.F. Kennedy High School	Sacramento	87	Bryan Station High School	Lexington
87	Leland High School	San Jose	87	Holmes High School	Covington
87/88	Luther Burbank H.S.	Sacramento	87	North Hopkins High School	Madisonville
86/87/88 86/87/88	Moreau High School	Hayward	Louisiana		N 01
87/88	Mt. Carmel High School Oakmont High School	Poway Roseville	87	Isidore Newman School	New Orleans
86/87	Oceanview High School	Huntington Beach	Maryland 86/87/88	Aberdeen High School	Aberdeen
87/88	Pittsburg High School	Pittsburg	Massachusetts	Aberdeen High School	Aberdeen
86/87/88	Roseville High School	Roseville	88	Berkshire School	Sheffield
86/87/88	Sanger High School	Sanger	86	BMC Durfee High School	Fall River
86/87/88	Vista High School	Vista	87/88	Cambridge Ridge H.S.	Cambridge
Colorado	. Description of the control of the		88	East Longmeadow H.S.	East Longmeadow
87	Aurora Central H.S.	Aurora	86/87/88	Falmouth High School	Falmouth
86	Rocky Mt. High School	Ft. Collins	87/88	Franklin High School	Franklin
88	Widefield High School	Colorado Springs	88	Lawrence High School	Lawrence
Connecticut	2 2 22 1 2222	7227 72707	87/88	Methuen High School	Marlboro
88	Amity Regional H.S.	Woodbridge	88	Milford High School	Milford
88 86/87/88	Choate Rosemary Hall	Wallingford	87/88	Natick High School	Natick
87	Hopkins School	New Haven	86	Watertown High School	Watertown
87	Kingswood-Oxford School The Canterbury School	West Hartford New Milford	86 86	Wellesley High School Westborough High School	Wellesley
Delaware	The Cameroury School	New Millord	Michigan	westoorough riigh School	Westborough
86/87/88	Archmere Academy	Claymont	86/87	Ann Arbor High School	Ann Arbor
87/88	Tatnall School	Wilmington	87	Dearborn High School	Dearborn
Florida		and the same of th	88	Fordson High School	Dearborn
87	Columbia City High School	Lake City	88	South Lyon High School	Ann Arbor
86/87/88	F.W. Springstead H.S.	Springhill	87	Traverse City Sr. H.S.	Traverse City
87/88	Hillsborough High School	Tampa	86/87	Vandercook Lake H.S.	Jackson
86/87/88	Miami Central High School	Miami	86/87/88	Waverly High School	Lansing
86/87	Miami Southridge H.S.	Miami	Minnesota		
88	Seminole High School	Sanford	86/87/88	Barnum High School	Barnum
Georgia 86/87/88	John McEachess U.S.	D	Mississippi		22400040000
86	John McEachern H.S. Walton High School	Powder Springs Marietta	86	Adams County Christian	Natchez
Idaho	Walton Flight School	Marietta	87 86	Chamberlain-Hunt Academy	Port Gibson
86/87/88	Moscow High School	Moscow	Missouri	Petal High School	Petal
Illinois	mose man sensor	112030011	86	Hickman High School	Columbia
86/87	A.A. Stagg High School	Palos Hills	86	Parkway West High School	Ballwin
88	Crystal Lake High School	Crystal Lake	Montana	ranking west riight behoof	Danimin
86	Hoffman Estates H.S.	Hoffman Estates	86/87/88	Skyview High School	Billings
87	Larkin High School	Elgin	Nebraska		270 TO CO. CO.
87/88	Naperville-North H.S.	Naperville	86/87/88	Lincoln High School	Lincoln
87	Oak Park/River Forest H.S.	Oak Park	88	Ralston High School	Ralston
86/87	Prospect High School	Mt. Prospect	86/87/88	Westside High School	Omaha
87 88	T.F. North Township H.S.	Calumet City	New Jersey	22 2 22 2 2	22 20
86/87/88	Wheaton High School Wheeling High School	Wheating	86/87/88	Cherokee High School	Marlton
86/87	William Fremd High School	Wheeling Palantine	86	Delran High School	Delran
Indiana	** anam Fremu riigii School	Faiantine	86/87/88	East Brunswick H.S.	East Brunswick Kinnelon
87/88	Central High School	Evansville	88 87/88	Kinnelon High School Middleton High School	Middleton
86/87/88	Eastbrook Community H.S.	Marion	87	Moorestown High School	Moorestown
86/87/88	Evansville North H.S.	Evans	87/88	Morris Hills High School	Rockaway
86/87/88	Lawrence North H.S.	Indianapolis	87	Morris Knolls High School	Denville
86/87/88	Merrillville High School	Merrillville	87	North Brunswick H.S.	New Brunswick
			200		

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PLEASE CONTACT

#### MULTIAXIAL®, INC.

P.O. Box 404 Lincoln, Rhode Island 02865 (401) 334-3232

STATE/YEAR	SCHOOL	CITY	STATE/YEAR	SCHOOL	CITY
87	North Hunterdon H.S.	Annadale	86	Pocono Mt. High School	Swiftwater
87	Oakcrest High School	Mays Landing	87	Seneca Valley H.S.	Harmony
87/88	Old Tappan High School	Old Tappan	88	State College Area H.S.	State College
87/88	Phillipsburg High School	Phillipsburg	South Dakota	Section 200 State Control of the Section 1993 Section 1	**************************************
88	South Plainfield H.S.	South Plainfield	86/87	Mitchell Senior H.S.	Mitchell
87/88	Toms River H.SSouth	Toms River	South Carolina		
New Hampshire			86	Irmo High School	Columbia
87/88	Phillips Exeter Academy	Exeter	Tennessee		
86	St. Paul's School	Concord	87	Brentwood High School	Brentwood
New Mexico			86/87	Memphis Catholic H.S.	Memphis
86/87/88	Albuquerque Academy	Albuquerque	87/88	Morristown-East H.S.	Morristown
86/87	Cibola High School	Albuquerque	86/87/88	The McCallie School	Chattanooga
New York	Clook High Selles	Houdandan	Texas	The Presente Sensor	
87	Babylon High School	Babylon	86	Andrews High School	Andrews
86/87/88	Ithaca Senior High School	Ithaca	87/88	Austin High School	Austin
88	Smithtown High School	Stoney Brook	86/87	Big Spring High School	Big Spring
North Carolina	Siliukowii Tiigii School	Stolley Blook	88	Burges High School	El Paso
88	Charlotte Latin H.S.	Charlotte	86/87	Calhoun High School	Port Lavaca
86/87/88	Jordan High School	Durham	87	Cypress Creek High School	Houston
86	Northern High School	Durham	87/88	Flour Bluff High School	Corpus Christi
86/87/88	Southern High School	Durham	87	John Jay High School	San Antonio
North Dakota	Southern High School	Dumam	87/88	L.B.J. High School	Austin
	E M. at III. C. b I	-	86	L.D.J. righ School	Hurst
86	Fargo North High School	Fargo		L.D. Bell High School	Austin
86/87/88	Jamestown High School	Jamestown	86/88	Lanier High School	Mansfield
Ohio	AW W 17 1 6 1 1	23 ST-202-2020	88	Mansfield High School	
88	Alliance High School	Alliance	86	McCallin High School	Austin
86	Bowshen High School	Toledo	86	North Mesquite H.S.	Mesquite
88	East Liverpool H.S.	East Liverpool	88	Parkland High School	El Paso
87/88	Fostoria High School	Fostoria	86	Texas City High School	Texas City
86/87/88	Fremont Ross High School	Fremont	88	Sherman High School	Sherman
88	Lakota High School	West Chester	86/87/88	South Grand Prairie H.S.	Grand Prairie
86/87/88	Miamisburg High School	Miamisburg	88	St. John's High School	Houston
86/87/88	Oakwood High School	Dayton	87	St. Mark's School of Texas	Dallas
86/87	Oak Hills High School	Cincinnati	Vermont		
87/88	Newark High School	Newark	87/88	Bellows Free Academy	St. Albans
88	North High School	Springfield	Virginia		
87/88	Northmont High School	Clayton	86/87/88	Henrico High School	Richmond
86/87/88	South High School	Springfield	86	Robert E. Lee H.S.	Springfield
87/88	Sycamore High School	Cincinnati	86	West Springfield H.S.	Springfield
Oklahoma	74		Washington		
86/87	Owasso Public High School	Owasso	86/87	Bellevue High School	Bellevue
Pennsylvania			86	Newport High School	Bellevue
86	Baldwin Whitehall H.S.	Pittsburgh	West Virginia	Notes that the state of the sta	
86/87	Center High School	Monaca	86/87/88	Brooke High School	Wellsburg
86/87/88	East Senior High School	West Chester	Wisconsin		10000000000000000000000000000000000000
86/87/88	Emmaus High School	Emmaus	87/88	Clinton High School	Clinton
87	Hempfield Area Schools	Greensburg	86	Juneau High School	Milwaukee
86/87/88	Henderson High School	West Chester	86	Lincoln High School	Wisconsin Rapid
87	Northern Lebanon H.S.	Fredricksburg	86/87/88	McFarland High School	McFarland
86/87/88	Owen J. Roberts H.S.	Pottstown	86	Nicolet High School	Glendale
86/87	Palisades High School	Kintnersville	00	Medici High Behoof	Cicionic

## Dates For NATA District Meetings in 1989

NATIONAL MEETING: JUNE 11-15, 1989

Hyatt Regency Dallas (Downtown)

Dallas, TX 214/651-1234

NATA Contact: Tim Kerin (615/974-1229)
DISTRICT 1 & 2: JANUARY 8-10, 1989

Kutcher's Lodge Monticello, NY 914/794-6000

NATA Contact: Jim Gossett (212/280-3178)

DISTRICT 3: MAY 19-21, 1989

Cavalier Hotel Virginia Beach, VA 804/425-8555

NATA Contact: Robbie Lester (919/733-3822)

DISTRICT 4: MARCH 9-11, 1989 Embassy Suites Hotel

Green Bay, WI 54302 414/432-4555

NATA Contact: Roger Kalisiak (312/882-8006)

DISTRICT 5: MARCH 17-19, 1989 Nebraska Center For

Continuing Education University of Nebraska 402/472-3435

NATA Contact: Jerry Weber (402/472-2276)

DISTRICT 6: JULY 27-29, 1989

Arlington Convention Center Sheraton Center Park Hotel

Arlington, TX 817/565-2371

NATA Contact: George Young (817/565-2371)

DISTRICT 7: MARCH 10-12, 1989 Little America Hotel Cheyenne, WY

Cheyenne, WY 307/634-2771 Bill Lyons (307/7

NATA Contact: Bill Lyons (307/766-2305)
DISTRICT 8: JUNE 30-JULY 2, 1989

Bally Hotel Reno, NV 702/789-2000

NATA Contact: Bill Chambers (714/879-5227)

DISTRICT 9: JULY 11-13, 1989 Hilton Hotel

Birmingham, AL 205/933-9000

NATA Contact: Drew Ferguson (205/934-1041)
DISTRICT 10: MARCH 17-18, 1989

Executive Inn/Best Western

Tacoma, WA 206/922-0080

NATA Contact: Gary Nicholson (206/535-7350)

TABLE 1

PARTICIPATIO	N/INJURY OVERVIEW IN 1986	HIGH SCHOOL 1987	FOOTBALL 1986-88 1988	3-Year Total
Schools Surveyed Projected Number	105	134	112	351
of U.S. High Schools/Football 1,3	15,566	14,836	14,702	DNA
Players Monitored in NATA Survey Projected Total of	6,544	7,886	6,803	21,233
Football Players 2	1,048,100	1,021,685	1,041,721	3,111,506
Total Injuries Per Surveyed School	4,292	4,667	3,838	12,797
Avg. Number of Injuries Per School Projected Injuries	40.9	34.8	34.3	36.4
Per School	636,279	516,716	503,806	1,656,801
Players Injured At Least Once Among Those Surveyed	2,437	2,892	2,393	7,722
Percent of Players Injured Per School	37.29	% 36.7	% 35.2%	36.4%
Number of Games Played By Schools Surveyed	1,513	2,007	1,740	5,260
Number of Practices By Schools Surveyed	8,120	10,426	8,742	27,288
TOTAL GAMES/PRACTICES	9,633	12,433	10,482	32,548

Source: National Athletic Trainers' Association, Inc. (1988)

<b>TABLE</b>	2	
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	WHERE IT HURT	S		
Body Category	1986	1987	1988	3-Year Total
HIP/THIGH				
Number of Injuries/Survey	769	796	663	2,228
Percent of Injuries	17.9%	17.0%	17.3%	17.4%
Projected Total	114,002	88,093	87,031	289,126
ANKLE/FOOT				
Number of Injuries/Survey	714	733	596	2,043
Percent of Injuries	16.6%	15.7%	15.5%	16.0%
Projected Total	105,849	81,121	78,236	265,206
FOREARM/WRIST/HAND	17 (17 (17 (17 (17 (17 (17 (17 (17 (17 (	ಂದುರುತ್ತಿರುವಾಗ		
Number of Injuries/Survey	625	710	587	1,922
Percent of Injuries	14.6%	15.2%	15.3%	15.0%
Projected Total	92,655	78,574	77,054	248,283
KNEE	72,033	70,574	77,054	240,203
Number of Injuries/Survey	625	661	569	1,855
Percent of Injuries	14.6%	14.2%	14.8%	14.5%
Projected Total	92,655	73,153	74,691	240,499
TORSO	92,033	75,133	74,091	240,499
	421	1776	264	
Number of Injuries/Survey	431 10.0%	476	364	1,271
Percent of Injuries	63,895	10.2%	9.5%	9.9%
Projected Total	03,893	52,679	47,782	164,356
SHOULDER/ARM	72372	23%		502720
Number of Injuries/Survey	414	514	389	1,317
Percent of Injuries	9.7%	11.0%	10.1%	10.3%
Projected Total	61,375	56,884	51,063	169,322
HEAD/NECK/SPINE				
Number of Injuries/Survey	384	463	402	1,249
Percent of Injuries	9.0%	9.9%	10.5%	9.8%
Projected Total	56,927	51,240	52,770	160,937
FACE/SCALP				
Number of Injuries/Survey	122	107	96	325
Percent of Injuries	2.8%	2.3%	2.5%	2.5%
Projected Total	18,086	11,842	12,602	42,530
OTHER				
Number of Injuries/Survey	208	209	172	589
Percent of Injuries	4.8%	4.5%	4.5%	4.6%
Projected Total	30,835	23,130	22,577	76,542
PROJECTED U.S. TOTAL	636,279	516,716	503,806	1,656,801
Source: National Athletic Trainers' Asso	177 - 478 (AND) AND DESCRIPTION FOR THE STATE OF THE STAT	510,710	505,000	1,000,001

Source: National Athletic Trainers' Association, Inc. (1988)

# Our form fosters function

#### Air-Stirrup® Ankle Brace has made functional management practical

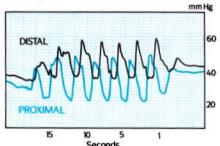
"IThe Air-Stirrup" Ankle Bracel has revolutionized the quality of non-operative care of lateral ligament ankle injuries." Here's how. Anatomic design of the contoured, molded plastic shells provides stability and fits a wide range of sizes. Inflated aircells offer comfort and graduated compression with its therapeutic benefits. Worn with a laced shoe, the Air-Stirrup restricts inversion/eversion<sup>2,3,4</sup> permits normal flexion and provides "guided mobilization."5

### The Function





The Air-Stirrup resists inversion/eversion, yet normal flexion is virtually unrestricted.



Weight bearing and muscle contraction during walking causes aircell pressure to rhythmically pulsate. This massaging compression is believed to reduce swelling12,56,7 and enhance comfort, mobility and healing.

References: Please call 1-800-526-8785 for reprints and further information.

References: Please call 1-800-526-8785 for reprints and further informat
 Bergfeld JA, Cox JS, Drez D, Raemy H, Weiker GG: Symposium: Management of acute ankle sprains. Contemp Orthoped 1986: 13.
 Stover CN: Air-Stirrup management of ankle injuries in the athlete. Am J Sports Med 1980: 8:360-365.
 Kimura IF, et al: Effect of the Air-Stirrup in controlling ankle inversion stress. J Ortho Sports Phys Ther 1987: 9:33-39.
 Stuessi E, et al: A biomechanical study of the stabilization effect of the AIRCAST Ankle Brace, in Biomechanics. Champaign, IL: Human Kinetics Publishers, pp 159-164, 1987.
 Raemy H, Jakob RP: Functional treatment of fresh fibula ligament lesions using the AIRCAST Ankle Brace. Swiss J Sports Med 1983; 31:53-57.
 Hamilton WC: Sprained ankles in ballet dancers. Foot and Ankle

Hamilton WC: Sprained ankles in ballet dancers. Foot and Ankle 1982; 3:99–102.

Stover CN, York JM: AIRCAST/Air-Stirrup system for graduated management of lower extremity injuries. Scientific exhibit paper, AAOS, San Francisco, 1979.



P.O. Box T, Summit, New Jersey 07901 • 1-800-526-8785 In NJ 1-201-273-6349 • TELEX 532832 aircast ud • FAX 1-201-273-1060 US PATENTS 4:280,489, 4:287,920 and 4:628,945. FOREIGN AND OTHER PATENTS PENDING.

AT3/89

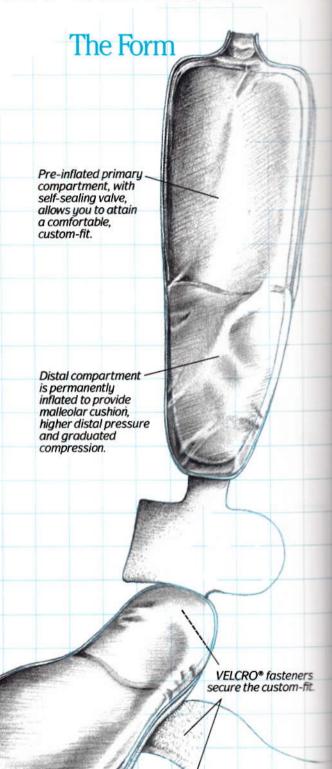


TABLE 3

	FREQUENCY OF INJURY BY C	CLASSIFICATION		
Body Category	1986	1987	1988	3-Year Total
GENERAL TRAUMA				
Number of Injuries/Survey	1,236	1,282	1,085	3,603
Percent of Injuries	28.8%	27.5%	28.3%	28.2%
Projected Total	183,234	141,938	142,427	467,599
SPRAINS				
Number of Injuries/Survey	1,209	1,275	1,101	3,585
Percent of Injuries	28.8%	27.3%	28.7%	28.0%
Projected Total	179,231	141,164	144,526	464,921
STRAINS				
Number of Injuries/Survey	915	1,013	794	2,722
Percent of Injuries	21.3%	21.7%	20.7%	21.3%
Projected Total	135,647	112,158	104,227	352,032
FRACTURES				
Number of Injuries/Survey	283	359	299	941
Percent of Injuries	6.6%	7.7%	7.8%	7.4%
Projected Total	41,954	39,747	39,249	120,950
NEUROTRAUMA				
Number of Injuries/Survey	244	338	244	826
Percent of Injuries	5.7%	7.2%	6.4%	6.7%
Projected Total	36,172	37,422	32,029	105,623
GENERAL ILLNESS				
Number of Injuries/Survey	218	217	126	561
Percent of Injuries	5.1%	4.6%	3.2%	4.4%
Projected Total	32,318	24,025	16,540	72,883
MUSCULO-SKELETAL				
Number of Injuries/Survey	124	142	130	396
Percent of Injuries	2.9%	3.1%	3.4%	3.1%
Projected Total	18,382	15,722	17,065	51,169
THERMOTRAUMA				
Number of Injuries/Survey	63	41	59	163
Percent of Injuries	1.4%	0.9%	1.5%	1.3%
Projected Total	9,341	4,540	7,743	21,624
PROJECTED TOTAL U.S.	636,279	516,716	503,806	1,656,801

Source: National Athletic Trainers' Association, Inc. (1988)

#### TABLE 4 RELATIVE FREQUENCY OF INJURY FOR GAME-RELATED POSITION CATEGORIES IN H.S. VARSITY FOOTBALL Rate of Injury Per 100 "Games"

Note: Determining risk of injury by position requires that we calculate the rate of injury for each individual player at his position. In other words, to compare the risk of injury between an offensive lineman and a quarterback, as we do in the following table, we first divided the total number of injuries sustained by offensive linemen by five (one for each person on the field during games). Cignificant Injuries

Position	All Reported Injuries			(out 7 days or more)				
	1986	1987	1988	Avg.	1986	1987	1988	Avg.
Running back	9.3	7.9	8.3	8.2	2.7	2.6	3.3	2.9
Quarterback	6.9	5.1	6.6	6.1	1.9	1.8	2.3	2.0
Def. Lineman	4.7	4.8	4.6	4.7	1.6	1.5	1.5	1.5
Tight End	4.2	3.2	2.7	4.4	1.3	0.6	1.1	1.0
Linebacker	5.1	3.0	4.3	4.1	1.4	1.0	1.4	1.3
Wide Receiver	2.9	2.9	4.4	3.4	0.6	0.9	1.3	0.9
Def. Back	3.4	3.0	2.7	3.0	1.1	0.8	1.0	1.0
Off. Lineman	3.4	2.5	3.1	3.0	0.8	0.9	1.0	0.9

Note: The quotient for determining "average" number of players injured per 100 Games takes into consideration a varying number of players monitored each year.

Source: National Athletic Trainers' Association, Inc. (1988)

## PLAN AHEAD! - Dallas 1989 -

# ARTU: Faster Rehab Better Compliance Less Pain

"ARTU, the Ankle Reflex Treatment Unit by Universal is one of the most significant pieces of equipment available for treating foot and ankle injuries. It is highly effective in treating pain, edema, stiffness and many other ankle and foot pathologies. Treatment sessions are shorter, and fewer sessions are required to complete rehabilitation. Without question, I have seen the quality of patient care and the efficiency of my practice improve as a result of implementing ARTU into treatment programs." Robert A. Donatelli, MA, PT., Physical Therapy Associates, Atlanta, Georgia.

ARTU treats a full range of surgical and nonsurgical foot and ankle pathologies including sprains, post-operative soft tissue repair and post-trauma immobilization. Cryotherapy, passive range of motion and massaging action, which can be used independently or in any combination, provide consistent therapy, treatment to treatment. Controlled temperature of 41 degrees F., is ideal for reducing blood flow and restricting swelling. A textured footplate controls movement through 36 degrees of dorsiflexion and plantar flexion, 24 degrees of inversion/supination and eversion/pronation. And because the foot is not secured to the plate, the patient can comply to the range of motion at his or her own pace. Broad surfaced rollers massage the dorsal area of the foot/ankle complex and posterior ankle and leg tissues to aid in the removal of injury by-products and swelling.

ARTU by Universal. Promotes early healing by combining modalities, improving patient compliance and provid-

ing more consistent

treatment.





"My foot felt a lot less swollen after using ARTU and I experienced greater mobility. The cooling effect helped to relieve my pain and the massaging action was very relaxing to my foot." Patient, Physical Therapy Associates, Atlanta, Georgia.

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ARTU IN INDIVIDUAL

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TABLE 5 FREQUENCY OF INJURY BY SEVERITY IN HIGH SCHOOL FOOTBALL

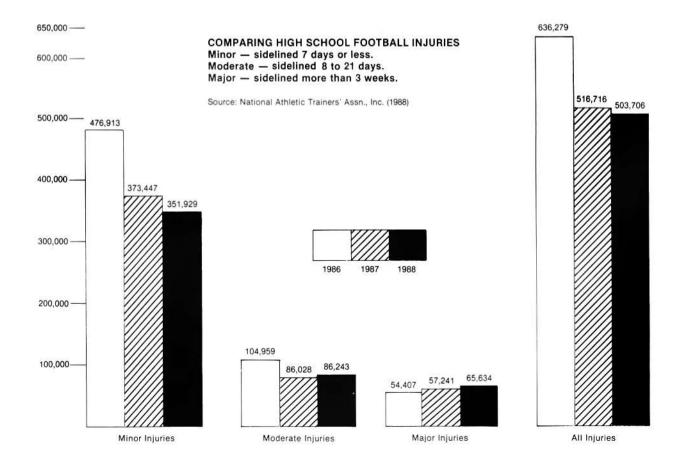
	1986	1987	1988	3-Year Total
MINOR				
Number of Injuries/Survey	3,217	3,371	2,681	9,269
Percentage of Injuries	74.9%	72.3%	69.9%	72.5%
Projected Total	476,913	373,447	351,929	1,202,289
MODERATE				
Number of Injuries/Survey	708	777	657	2,142
Percentage of Injuries	16.5%	16.6%	17.1%	16.7%
Projected Total	104,959	86,028	86,243	277,230
MAJOR				
Number of Injuries/Survey	367	518	500	1,385
Percentage of Injuries	8.6%	11.1%	13.0%	10.8%
Projected Total	54,407	57,241	65,634	177,282
PROJECTED TOTALS	636,279	516,716	503,806	1,656,801

TABLE 6 FREQUENCY OF SURGICAL INJURIES IN HIGH SCHOOL FOOTBALL

1986	1987	1988	3-Year Total
55	69	52	176
56.7%	56.1%	51.5%	54.7%
8,154	7,639	6,826	22,619
42	54	49	145
43.3%	43.9%	48.5%	43.3%
6,226	5,979	6,432	18,637
14.380	13.618	13,258	41,256
	55 56.7% 8,154 42 43.3%	55 69 56.7% 56.1% 8,154 7,639 42 54 43.3% 43.9% 6,226 5,979	55 69 52 56.7% 56.1% 51.5% 8,154 7,639 6,826 42 54 49 43.3% 43.9% 48.5% 6,226 5,979 6,432

<sup>\*</sup>Knee surgeries: Knee surgeries accounted for 63.9 percent of all surgical injuries reported.

Source: National Athletic Trainers Association, Inc. (1988)



## **Association Activities**

David G. Yeo, DPE, ATC

#### 1988 Olympic Trainers

Bob Beeten, Director of Medicine for the U.S. Olympic Committee, has provided the names of NATA certified trainers who comprised the medical staff team supporting the U.S. Olympic athletes in the 1988 Games in Seoul:

Jennifer Stone was the Medical Coordinator for the team and is the Head Athletic Trainer at the Colorado Springs

Olympic Training Center.

Herb Amato, Richmond, Virginia; Baseball. Wayne Cannon, Winston-Salem, North Carolina; Cycling. Ron Courson, Birmingham, Alabama; Track and Field. Bob Day, San Francisco, California; Men's Volleyball. Gary Hanna, Greenville, Pennsylvania; Soccer.

Kathy Hemsley, Philadelphia, Pennsylvania; Gymnastics.

Doug Kretzinger, Dallas, Texas; Handball.

Andy Lair, Lexington, Kentucky; Women's Volleyball. Karen Middleton, Birmingham, Alabama; Track and Field. Jean Miles, Hanover, New Hampshire; Judo & Tae Kwon Do. Julie Moyer, Wilmington, Delaware; Fencing.

Sally Nogel, Ann Arbor, Michigan; Rowing. Francy Rubin, Boulder Creek, California; Field Hockey. Kathy Schniedwind, Normal, Illinois; Women's Handball. Regg Swanson, Brentwood, Tennessee; Swimming and Diving. Karen Toburen, La Crosse, Wisconsin; Women's Basketball. Troy Young, Tempe, Arizona; Men's Basketball.

Jim Zachazewski, Los Angeles, California; Wrestling.

#### DISTRICT NEWS



District 9

Kenny Howard (left) and Dr. Jack Hughston (right) of the Hughston Sports Medicine Foundation reflect on a display of the members of the NATA Hall of Fame that are from District 9. The exhibit is in the Hughston Sports Medicine Foundation in Columbus, Georgia. The Southeastern Athletic Trainers Association is grateful to Dr. Hughston for allowing us to display our members in such a manner.

#### American Trauma Society Invites NATA to Join

Athletic trainers know how often trauma prevents athletes from attaining their personal best. According to an NATA survey, more than 374,000 high school football players were injured just on the football field alone in 1987. This alarming total is only a small part of the million Americans who are

disabled or die each year because of trauma.

Athletic trainers train the nation's athletes to play safely so they can avoid trauma. The American Trauma Society, a national non-profit health education organization, can help trainers reach athletes with the trauma prevention message. The American Trauma Society offers athletic trainers the opportunity to join their membership network of emergency medical professionals and paraprofessionals, hospitals and trauma centers, corporate medical directors, and schools and rescue squads, and to have access to trauma education and prevention information.

Last June, Robert C. Reese, Jr., President of the Professional Football Athletic Trainers Society and a member of NATA, encouraged NATA members to become a part of the American Trauma Society's network. Reese joined the American Trauma Society in 1988 and is a member of the Board of Directors. Because of his role in the American Trauma Society and NATA, the two organizations and a group of corporate supporters will spearhead the development of a national sports injury coalition. NATA members can participate in this and other activities by joining the

Society with dues of \$25.

As a member of the American Trauma Society, athletic trainers can obtain the educational materials and awareness items such as posters, bumper stickers, and fact booklets that are needed to complement their training programs. The American Trauma Society develops and distributes thousands of educational materials to its members at a special discount rate. Other American Trauma Society membership benefits include:

 Affiliation with the network of paramedics, nurses, trauma surgeons, trauma center and hospital administrators, and

corporate medical directors.

"Traumagram", the Society's monthly newsletter, that features the most up to date information about trauma issues, trauma centers, and other systems of care, and legislation affecting health care.

 Educational materials for national trauma awareness campaigns about head injury, drunk and drugged driving, and

occupant protection.

 Invitation to the Society's annual meeting held in Washington, D.C. in May, 1989, including an invitation to attend the Capitol Hill reception to meet and discuss legislative activities for trauma prevention with members of the

United States Congress.

Trauma is an epidemic that athletic trainers and physical educators can do something about. For more information about the American Trauma Society's membership programs call 1-800-556-7890. To join, send a check for \$25 to: Coordinator for Membership Programs, American Trauma Society, 1400 Mercantile Lane, Suite 188, Landover, MD 20785.

### Message from the **Executive Director**

Dear Members:

It is my extreme pleasure to inform you that the National Athletic Trainers Association has just acquired a new headquarters building and will soon be relocating in Dallas, Texas. You will receive more information on the exact dates. etc., at a later time. For the present, and until you are



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versatile, lightweight, porous, hypoallergenic.

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informed otherwise, all business will continue to be coordinated from our Greenville, North Carolina operation. This memorandum is to summarize the work performed in acquir-

ing the new national headquarters building.

During the course of selection of this property, the Board of Directors identified one dozen factors to be implemented. I am pleased to report that each of these factors has been addressed by the property which was recommended to the Board and which it approved. I will review these factors and the manner in which the needs of our Association and its membership are addressed through this purchase.

HOUSING THE NEEDS OF OUR OFFICE

Our acquisition of more than 20,000 square feet of space for offices, conference facilities and full communications capabilities will be able to house our Association and its

growing needs well into the 21st Century.

On December 2, 1988, our Association completed the purchase of the building at 2952 Stemmons Freeway, Dallas, Texas. The building is two stories and contains approximately 21,824 square feet of space with the possibility of constructing an additional 2,000 square feet on the second floor. We are purchasing this building from the current owner and leasing back a portion of the space. In particular, our selection of 3-year renewals of our tenant will give us ample opportunity to expand our space while securing the advantages of a current tenant in the meantime.

2. EXCELLENT VALUE IN REAL ESTATE

One of the most important considerations which we applied in evaluating potential sites was the importance of using every dollar of Association funds devoted to the building in a cost-effective manner for our members. The Dallas real estate market is currently severely depressed due to factors including the low price of oil. For this reason real estate prices in general are low compared to other cities in America. At the same time we were able to negotiate a very favorable price per square foot compared to the market. Based on the most recent sales directly across Stemmons Freeway in buildings of comparable size but which were much older and in less favorable condition than our own, we were able to achieve an effective square foot price approximately 40% below the current low Dallas real estate market price. This reflects good real estate value.

3. EXPOSURE AND IMAGE

As our profession grows we are assuming greater prominence both in the health care field and in the eyes of the public generally. This building provides a very prominent exposure for the name of the Association. Over 220,000 cars and taxis (many carrying visitors to central Dallas from out-of-town) pass the site daily providing a powerful public presence.

4. CLOSE TO AIRPORTS

Our building was selected to provide immediate access to a major airport hub which services virtually all American cities within a three to four hour period, as well as substantial access to international flights to anticipate the growing international interest in our educational, certification and association activities. The building is within 25 minutes of one of the largest airports in the world serviced by approximately 600 flights and approximately 40 airlines daily. The building is situated midway between the Dallas/Fort Worth airport and downtown Dallas, with ready access to Love Field airport servicing the Southwest region and beyond.

HALL OF FAME

One important element of every profession is its tradition of service. Athletic training has a rich tradition to be honored and memorialized. Our space allows a portion of our building to be devoted to the Hall of Fame. Given the fact that the Hall of Fame is able to receive charitable contributions which are tax deductible (NATA, Inc. dues are not deductible as charitable contributions), this provides an important source of revenue for the construction and support for Hall of Fame

activities as well as coverage of the NATA, Inc. building expenses if the Hall of Fame leases a portion of the space.

6. EFFICIENT TRANSITION AND GROWTH

A building in good condition requiring modest renovation and maximum use of budget to the NATA's function with an attractive clean modern look is a good use of Association funds. The headquarters building compares very favorably in this regard to other available buildings

7. COST-EFFECTIVE OPERATIONS

One element of sound building management is the presence of cashflow to pay building expenses. A method of achieving this objective is to select a building with a tenant already in place who depends upon the location, and who is willing to pay market rent or better. By acquiring a building as a sale and lease-back to the current owner, and by negotiating favorable rents over a substantial period of time for a tenant who has an incentive to remain in place, the Association was able to cover presently a significant share of its expenses. Securing a present tenant to pay market rent or better can be difficult when there is excess real estate capacity, but we were able to do so in our negotiations.

8. RENTS COVERING THE PURCHASE PRICE OF

THE BUILDING

Several Board members identified the positive features of securing a tenant whose minimum base rent obligation, if continued throughout the term of the lease, would exceed the purchase price of the building. This we have accomplished. Of course, there is never a guarantee that a tenant will remain. NATA may also wish to take further space for its own needs or for the Hall of Fame, thereby possibly diminishing available rents. But the concept of the purchase price being exceeded by rentals has been addressed in this purchase. This has been accomplished without taking any account of any interest on rents we receive, or pass-throughs paid by our tenant beyond the base rents for items such as taxes.

9. TAX-EXEMPT RENT

In most real estate transactions, rent is taxable as income (less expenses and depreciation). However, because the NATA, Inc. is a tax-exempt entity, this permits the rent from real estate purchases made solely from cash — without a mortgage - to be totally tax-exempt. For this reason, we have purchased this building for cash. In addition to the taxexempt nature of the rent we receive, Association funds will not be devoted to paying interest to a bank throughout the course of our ownership, but can be devoted to other Association and member needs.

NOT DISRUPTIVE OF CURRENT ORGANIZA-

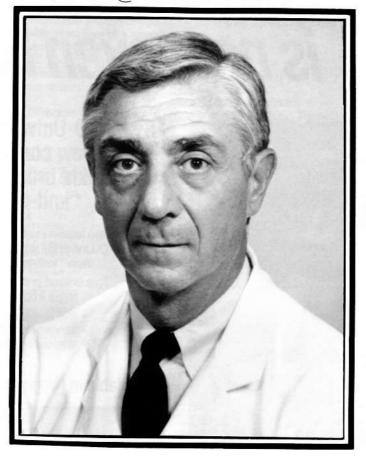
TION OR FINANCIAL STRUCTURE

You may recall that the Association last year considered a property known as the Texas Sports Hall of Fame. There, the seller insisted that the property be purchased by the Hall of Fame as a charity to benefit the seller for tax reasons. However, since the Hall of Fame has very limited resources, this purchase would have required a major restructuring of the Association financial structure with major interest payments at a purchase price almost double that of the new headquarters building. By contrast, the new headquarters building maintains and does not disrupt the basic financial structure of our Association.

11. POSSIBILITY OF FUTURE DEVELOPMENT

Although the Dallas real estate market currently provides an excellent value for the purchase of real estate, the site we have selected is on one of the most important commercial highways in the entire U.S. With the development of the multi-billion dollar high speed particle accelerator facility near Dallas and the rapid increase in the air traffic at the Dallas/Fort Worth airport complex there is a reasonable possibility that the value of our building and the land on which it is located will appreciate, either for current occupancy or for development.

### In Memoriam



#### George D. Rovere

March 5, 1933 — November 24, 1988

George D. Rovere, M.D., the head of the section on Orthopedic Surgery and the director of the Sports Medicine Unit of Wake Forest University-Bowman Gray School of Medicine, passed away on Thanksgiving Day 1988.

A highly respected national sports medicine specialist, he was the chairman of the Sports Medicine Advisory Committee of the N.C. Department of Public Instruction and former vice president of the N.C. Orthopedic Association. He also served as an examiner on the American Board of Orthopedic Surgery and was the chairman of the Education Committee of the A.O.S.S.M. Involved in research, recent articles printed included topics on team physician coverage, drug testing protocol, knee brace effectiveness and ankle stabilizer versus taping efficacy.

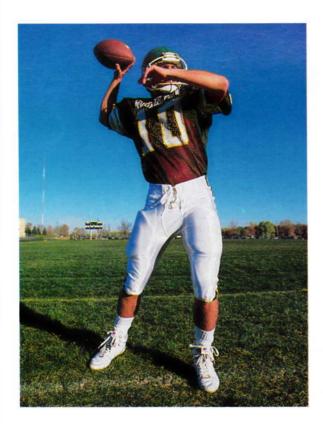
Dr. Rovere was an associate member of the NATA and a strong advocate of athletic trainers and their role in

the medical community.

A lasting tribute to Dr. Rovere was the establishment of the George D. Rovere Scholarship initiated in the Fall of 1988 by the alumni of the Sports Medicine Program. The scholarship will be awarded each year to a deserving student athletic trainer at Wake Forest University.

Dr. Rovere was loved, appreciated and respected as an orthopedic surgeon, team physician, administrator and friend by all those who were blessed as having known him.

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#### 12. CONSISTENT WITH RESOURCES ON JUNE 1. 1988

When the Board of Directors determined to proceed with acquisition of this property, it took into account the financial resources available to the Association at the beginning of June this year. Since then, the staff has been successful in negotiating a multi-year contract with McNeil Laboratories to provide the Association with financial support of NATA activities in excess of \$1 million dollars. What is most important is that the Board made a conservative and prudent investment of a portion of the-then available resources in a sound manner by selecting a building of appropriate size for growth - and buying that building for cash. The Association's resources are now diversified, and these extra resources are now available to service other member needs.

#### CONCLUSION

The acquisition by the Board of Directors of a property of this quality is a historic occasion in the life of the National Athletic Trainers' Association. I have experienced the highest level of teamwork through the members of our Board of Directors, our accountant Mr. Brooks McIntyre, and our general counsel Mr. Kim Zeitlin. It is through cooperative efforts like these that our Association will continue to have a bright and promising future. This accomplishment should be a source of pride for you and our entire membership as it is another giant step forward in the future of the NATA.

As we approach this future, may I extend my best wishes to you for a festive holiday season, and a peaceful New Year.

Sincerely,

Michael S. Krackow

Kerry L. Krivanek

Brent S. Leiby

Robert J. Kuzmeski Suzanne E. Lawrence

Joyce A. Lombardi

Otho Davis **Executive Director** National Athletic Trainers' Association, Inc.

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

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

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

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

The deadlines are: Journal Spring Issue Summer Issue Fall Issue Winter Issue

Deadline December 15 March 1 June 15 September 15

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

Steve Yates, Editor-in-Chief P.O. Box 7265 - Sports Medicine Unit Wake Forest University Winston-Salem, NC 27109

Information on upcoming events for the Calendar of Events section should be sent to:

Jeff Fair Athletic Department Oklahoma State University Stillwater, OK 74074

New Products should be sent to:

Barrie Steele Head Athletic Trainer University of Idaho Moscow, Idaho 83843

Items for the Student Athletic Trainer Forum should be sent to:

Deloss Brubaker Knollwood Center for Specialized Medicine P.O. Box 9813 Mobile, AL 36691

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#### **Guide to Contributors**

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

#### SUBMISSION POLICIES

Submit one original and three copies of the manuscript and artwork to the editor.

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

"This manuscript contains original unpublished material that has been submitted solely to Athletic Training, is not under simultaneous review by any other publication, and will not be submitted elsewhere until after a decision has been made concerning its suitability for publication by Athletic Training. In consideration of the NATA taking action in reviewing and editing my (our) submission, the author(s) undersigned hereby transfers, assigns or otherwise conveys all copyright ownership to the NATA, in the event that such work is published by the NATA.

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- Manuscripts are reviewed and edited to improve the effectiveness of communication between the author and the readers, and to assist the author in a presentation compatible with the accepted style of Athletic Training. The author accepts responsibility for any major corrections of the manuscript as suggested by the editor. The initial review process usually takes from six to 12 weeks.
- Athletic Training utilizes a double blind review process. Authors should take care that they are not identified in any way except on the first title and biographical sketch pages.

#### STYLE POLICIES

- Personal pronouns (I, we) and the active voice are preferred. Use the third person for describing what happened, "I" or "we" (if more than one author) for describ-ing what you did, and "you" or the imperative for instructions.
- Each page must be typewritten on one side of 81/2 x 11 inch plain paper, double spaced, with a one and one-half inch left margin and one inch margins elsewhere.
- Manuscripts should contain the following information, organized in the order listed, with each section beginning on a separate page: a. Title page

  - b. Biographical sketch

- 2nd Title
- Abstract
- Text (body of manuscript)
- References
- Acknowledgements
- Legend to illustrations
- Illustrations each on a separate page Tables - each on a separate page
- Titles should be brief within descriptive limits (a 16 word maximum is recommended). The name of the disability treated should be included in the title if it is the relevant factor; if the technique or type of treatment used is the principle reason for the report, this should be in the title. Often both should appear. The title page should also include the names, titles, and affiliations of each author, and the name and address of the author with whom correspondence is to be directed. Both the title and biographical sketch pages should be unnumbered.
- A brief biographical sketch of each author is requested.
- A second title page which includes only the title and with no reference to the authors is next. Begin numbering the pages of your manuscript with this page
- A comprehensive abstract of 75 to 200 words must accompany the manuscript. This abstract should succinctly summarize the major intent of the manuscript, the major points of the body, and the author's summary and/or conclusions. To state in the abstract words to the effect of "the significance of the information is discussed in the article", is unacceptable.
- Begin the text of the manuscript with an introductory paragraph or two in which the purpose or hypothesis of the article is clearly stated. Highlights of the most prominent work of others as related to the subject at hand is often appropriate for the introduction, but a detailed review of the literature should be reserved for the discussion section. The body or main part of the manuscript varies according to the type of article (examples follow). Regardless of the type of article, however, the body must include a discussion section in which the importance of the material presented is discussed and related to other pertinent literature. Liberal use of headings and subheadings, charts, graphs, and figures is recommended.

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

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

The body of a Case Report should include the following components: personal data (age, sex, race, marital status, and occupation when relevant - but not name), chief complaint, history of present complaint (including symptoms), results of physical examination (example: "Physical findings relevant to the physical therapy program were . . ."), medical history (surgery, laboratory, exam, etc.), diagnosis, treatment and clinical course (rehabilitation until and after return to competition, criteria for return to competition, and deviation from the expected [what makes this case unique].). NOTE: It is mandatory that Athletic Training receive, along with the submitted manuscript, a signed release form by the individual being discussed in the case study injury situation. Case studies cannot be reviewed if the release is not included.

- The Reference page(s) accompanying a manuscript should list authors numerically and in alphabetical order. Citations in the text of the manuscript will take the form of a number in parentheses, (7), directly after the reference or name of author being cited, indicating the number assigned to the citation. The list of references and citations should be in the following form: a) articles: author(s) (list all) with family names then initials, title of article, journal title (abbreviated as per Index Medicus and underlined), volume, inclusive pages, year. Issue number is required if each issue begins with page #1. but must not be included otherwise. b) books: author(s), title of book (underlined), city of publication (and state if the city is not major), publisher, year, inclusive pages of citation. Examples of references to a journal, book, chapter in an edited book, and presentation at a meeting are illustrated below. Note lack of punctuation in authors names.
  - Knight K: Preparation of manuscripts for publication. Athletic Training 11:127-129, 1976.
  - Klaufs CE, Arnheim DD: Modern Principles of Athletic Training. 4th edition. St. Louis: CV Mosby Co. 1977
  - Albohm M: Common injuries in women's volleyball. in Scriber K, Burke EJ (eds): Relevant Topics in Athletic Training. Ithaca NY: Monument Publications, 1978, pp. 79-81.
  - d. Behnke R: Licensure for athletic trainers: problems and solutions. Presented at the 29th Annual Meeting and Clinical Symposium of the National Athletic Trainers Association. Las Vegas, Nev, June 15, 1978.

Good quality color photography is acceptable for accompanying graphics but glossy black and white prints are preferred. Graphs, charts, or figures should be of good quality and clearly presented on white paper with black ink in a form which will be legible if reduced for publication. Tables must be typed, not hand written. Photographs cannot be returned if the manuscript is published. Please refrain from putting paper clips on any

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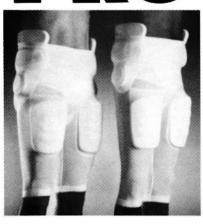
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#### **Book Review**

Phil Callicutt, EdD, ATC

**AIDS In Sport** 

Gregory L. Landry, M.D.
American Coaching Effectiveness Program
A Division of Human Kinetics Publishers, Inc.
Dept. AD, Box 5076
Champaign, IL. 61820

1988

26 pages, Illustrated

Price: First copy free with self-addressed, stamped envelope

AIDS has touched every area of society over the past several years. In sport, coaches and administrators are asking hard questions about how AIDS affects sport. Should an athlete with AIDS be permitted to participate in all sports? What everyday precautions should an athletic trainer and coach undertake to lessen the risk of his or her athletes contracting AIDS?

In response to an overwhelming concern for the athletic community, the American Coaching Effectiveness Program, known as ACEP, has produced a pamphlet which answers many of the pressing questions. Written by Dr. Gregory Landry of the University of Wisconsin-Madison, the pamphlet leads athletic trainers and coaches through a series of ques-

tions about AIDS and sport participation.

This short and concise publication is filled with a large amount of information on the number-one health threat to the world today. Dr. Landry has chosen the most critical questions as they relate to AIDS and sport and has answered them in an easy to understand manner. I admit there has been a large number of books, articles, and TV shows concerning AIDS, but for the first time Dr. Landry has isolated and combined all information on AIDS in sport, giving us an excellent work. It is very easy to understand because it is written in a straightforward manner.

Every athletic trainer and coach should purchase this pamphlet and make this information available to every athlete from the junior high school to the professional level. Bulk orders can be obtained by calling 1-800-342-5457. In closing, many times great things come in small sizes, and this is

#### Video Review

Tom Gocke, MS, ATC

Sports On Trial
The Athletic Institute
200 N. Castlewood Drive
N. Palm Beach, FL 33408
Color, ½" VHS or Beta
120 minutes

Price: \$39.00

Sports on Trial is a powerful dramatization of a "mock trial" that is the result of a catastrophic neck injury suffered by a high school football player. The "case" revolves around those events that are relevant to this athlete's injury. The "evidence" presented ranges from pre-seasonal information (consent forms, sport specific warnings) to skill and technique flaws to medical care (both prevention and acute care). Some of the more notable "actors" include: Richard Ball, Sports Unlimited, Phoenix, AZ, Dr. Fred Allman, Or-

thopedic Surgeon, Atlanta, GA and Dr. Bobby Barton, Certified Athletic Trainer and former President of the National Athletic Trainers Association, Inc.

As mentioned earlier, the case revolves around those factors surrounding an athlete's injury. What makes Sports on Trial such a unique approach is that the audience serves as the jury and is asked to render a verdict at the conclusion of the

Sports on Trial is produced and distributed by the Athletic Institute of North Palm Beach, Florida. It has been endorsed by the American Orthopedic Society for Sports Medicine and

the Sports Medicine Foundation of America.

Many issues are brought to light during the course of the presentation. The first pertains to injury warnings and the printed materials that deliver these warnings to the athletes and their parents. Mr. Ball points out how suggestive wording of warning information could coerce the athlete or parents into signing a consent form. A second point brought out by Mr. Ball concerns the teaching of proper blocking and tackling techniques and the importance of proper technique in the prevention of injury. It is suggested that the teaching of improper and illegal tackling techniques may have been a direct cause in the injury suffered by this athlete. Lastly, Mr. Ball questions the high school's preparedness with regard to adequate medical coverage during the game and the inappropriate actions taken by those rendering medical care. This will become evident by the "testimony" of both Dr. Allman and Dr. Barton.

Dr. Allman brings out two rather important points while on the witness stand. The first addresses the improper blocking and tackling techniques being taught by the football coach. Dr. Allman points out that he had discussed his concerns with the football coach; however, the coach failed to heed his warnings and continued to teach improper techniques. Dr. Allman discusses the theory of axial loading and how it corresponds to injury when improper technique has been taught. Secondly, Dr. Allman explains how improper emergency management contributed to the severity of this athlete's injury. Dr. Allman's criticism is not limited to care given on the field but includes the hospital management of this injury as well. Dr. Allman implies that an emergency care plan is of the utmost importance in dealing with severe athletic injuries. He also sees a need for regular in-service training for coaches in the area of sports medicine. Dr. Allman expresses a need for more certified athletic trainers to be employed at the high school level. He feels that the present quality of medical care has not kept up with the increased aggression of the high school athlete.

Dr. Barton's statements focus on the role of the certified athletic trainer and his importance in the prevention and care of athletic injuries. Dr. Barton makes an important point concerning the coach's responsibility in the area of sports medicine. He states that even though a school may employ a certified athletic trainer, that in itself does not exonerate a coach from exhibiting some level of competency in caring for athletic injuries. In many situations a high school may have only one certified athletic trainer and he/she cannot be in more than one place at any given time. Hence, the coach could be the first to render aid to the injured athlete until the athletic trainer arrives. Dr. Barton also explains how proper management of this athlete could have reduced the severity of injury. He expounds on the proper technique for removal of the face mask for the purposes of artificial respiration and airway maintenance. It is Dr. Barton's feeling that had this football coach had the proper medical training, or if a certified athletic trainer had been present at the game, then this situation would have had a much different outcome. Hence, the severity of this athlete's injury could have been reduced drastically. Dr. Barton, like Dr. Allman, feels a need for regular in-service training and annual renewal of car-

continued on page 83

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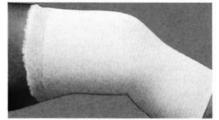
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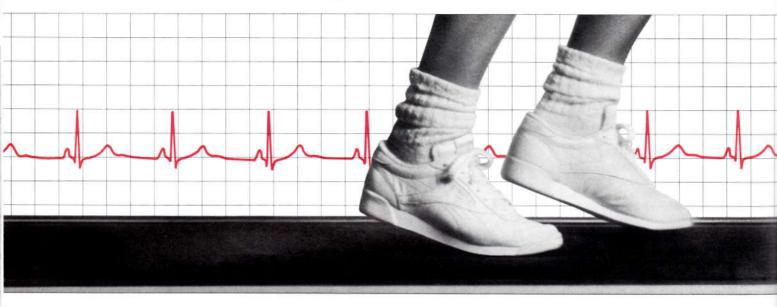
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#### VIDEO REVIEW from page 81

diopulmonary resuscitation (CPR) training for all those who are involved in sports. Dr. Barton encourages the employment of more certified athletic trainers at the high school level.

Lastly, Sports on Trial closes with an expert witness' appraisal of the overall athletic program. The following are his comments and recommendations: 1) properly inform both parents and athletes of the possibility of severe injury that could be associated with contact sports; 2) have coaches teach proper sport skills to reduce or eliminate the chance of severe injury while participating in sports; 3) have coaches participate in regular in-service training programs that focus on the care and treatment of athletic injuries and to annually renew CPR training; and 4) encourage the hiring of certified athletic trainers at the high school level.

I strongly recommend Sports on Trial. It has a powerful message regarding the need for specialized care of athletic injuries at the high school level. This video is a valuable teaching tool not only for the athletic trainer but for the entire athletic community. It brings to light a broad spectrum of issues that should be of concern to every parent and school administration. The use of practicing professionals and the courtroom environment add significantly to the authenticity.

The only negative aspect of Sports on Trial is its length of approximately two hours. This is much too long for a single class period and possibly too long for a school board meeting. However, the Athletic Institute does offer a short version that runs for approximately 60 minutes and is more manageable in the classroom. (I found the shorter version more to my liking).

If you have not already seen Sports on Trial I urge you to do so. It will be a very informative and eye-opening experience.

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#### MEDICAL UPDATE from page 50

Maintain good nutritional habits and be very cautious of the local cuisine. Always stick to familiar foods in order to avoid any gastrointestinal problems.

4. Avoid napping until adjustment has taken place in the new time zone. This can confuse the body in its adjustment period. If unable to sleep, do not watch television or read, this may prolong the problem. If competition is not the next day, get up and go walking or to another room until sleepy. If competition is the next day, try your best to at least get some rest; just lie quietly. A high carbohydrate snack before bedtime may help.

In the fast-paced world in which our athletes must compete, it helps to have information that may enable them to adjust to traveling with less stress. Jet lag can be one of the most important factors in how the athlete performs, physically or mentally, on the road. For those who don't always have the luxury of flying, some of the same symptoms can occur on long bus trips as well, especially if time zones are crossed. Collegiate or minor league teams that must travel by bus due to financial reasons may benefit from these suggestions.

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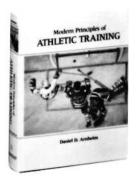


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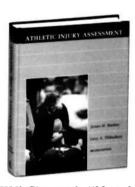
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<sup>&</sup>lt;sup>2</sup> Recommendations for Prevention of HIV Transmission in Health Care Settings. Centers for Disease Control. MMWR 36: (suppl. #2S), 1987

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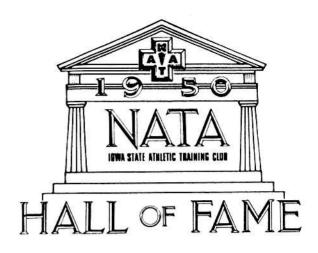
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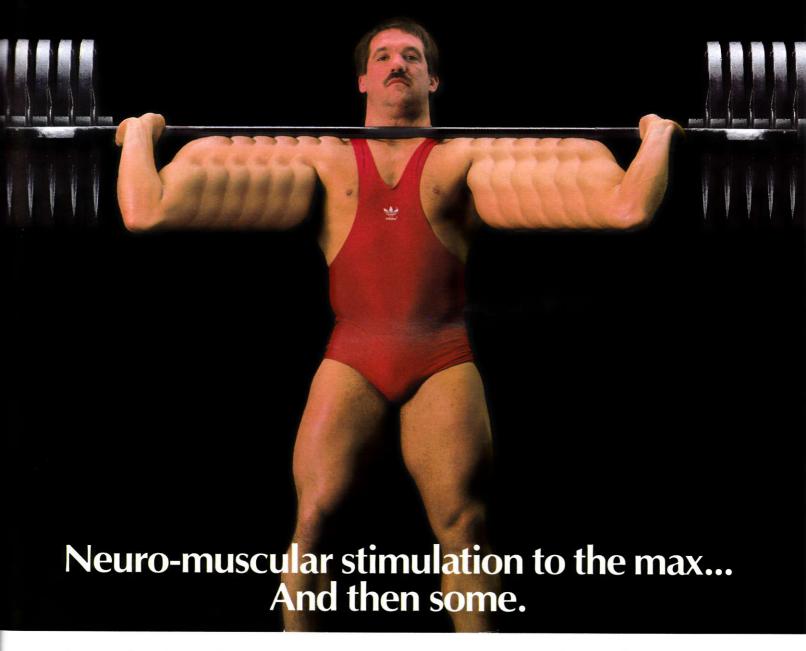
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\*Delitto A, Brown M, Strube J, et al: Electrical Stimulation of Quadriceps Femoris in an Elite Weight Lifter: A Single Subject Experiment. Int J Sports Med, Vol 10, 1989. Accepted for publication October 31, 1988.

#### **Potpourri**

Dennis Aten. ATC, RPT, MS

#### **Trainers and Coaches** Can Help Athletes **Prevent Skin Cancer**

Athleticare News Letter

More than five million boys and girls participate in coached competitive sports, most of them involving outdoor activity, according to the National Federation of State Athletic Associations. Because young athletes look to their coaches and trainers for guidance and instruction, you can play a significant role in helping your athletes prevent skin cancer later in life. Regular use of a sunscreen offers young adults protection against skin caner in future years, according to scientific evidence presented at the International Congress of Pediatrics.

#### Sunscreens Reduce Cancer Incidence

A study by Robert A. Stern, MD, associate professor of dermatology, Harvard Medical School, predicts that regular use of a sunscreen with a sun protection factor (SPF) 15 during the first 18 years of life can reduce by nearly 80 percent the lifetime risk of basal and squamous cell carcinoma (two of the most common skin cancers). The study was underwritten by Johnson & Johnson.

"Proper sun protection should begin early, yet many young people avoid sunscreens because they perceive that a tan's golden glow will enhance their appearance," Dr. Stern said. "Because sunscreens contain substances that filter out the damaging ultraviolet-B rays of the sun, regular sunscreen use should slow the progression of sun damage.'

Another study, conducted by Arthur J. Sober, MS, also an associate professor of dermatology at Harvard, found that one severe sunburn during childhood doubles the risk of malignant melanoma (a potentially fatal skin cancer) later in

Marshall H. Becker, PhD, University of Michigan School of Public Health, provided Congress attendees with further encouragement to educate young people about the need to protect their skin against exposure to the sun.

#### Sun Education Needed For Youngsters

"Sun protection should be taught as a basic, preventive measure, like teaching your child to look both ways before crossing the street and to carry an umbrella when it rains,' Dr. Becker said. "Because skin cancer occurs in older adults, it is difficult to believe that it could happen to your child later in life," Dr. Becker said. "A preventive approach to skin cancer should begin as early as possible."

Ideally, children should be taught to use a sunscreen when they're young, but the high school coach or athletic trainer still can have an impact with the adolescent.

"Adolescents may be a more difficult group than children to educate on sun protection, but it's not impossible to reach them," according to Marianne E. Felice, MD, chief, Division of Adolescent Medicine, University of California at San Diego.

#### **Adolescents Need Motivation**

Dr. Felice said it is challenging to reach adolescents and educate them about sun protection because adolescents must believe they want to do something before they agree to do it. "Try not to depend heavily on fear appeals (scare tactics). Because fear appeals to motivate health behavior have been over-used, people have developed defenses to them. Rather than using fear, emphasize the short-run benefits of sun protection such as avoiding painful sunburns," Dr. Felice said.

Dr. Felice advises adults to appeal to the adolescent's developmental needs, providing information such as brochures that he can read on his own and pointing out that sensible sun protection is a responsible step toward adulthood and part of

an overall health-care regimen.

#### 1989: Time for a New Way of Thinking About **Childhood Injuries**

Safe Kids

A new year. A time for new beginnings and new attitudes. This year, the National SAFE KIDS campaign is asking you to make up your list of New Year's Resolutions with your children's health and safety in mind. We're asking you to suspend your assumptions about childhood injury in general and your child's safety in particular. We're asking you to adopt a new way of thinking about injuries.

We believe 1989 will be a safer year for your children if

you consider the following "resolutions."

1. Resolve to develop a new attitude about "accidents." Accidents don't just happen. Most childhood injuries are preventable, and there is much you can do to keep them from happening.

2. Resolve to educate yourself about the seriousness of the problem: Injuries are the number one health risk facing American children. They kill more kids than all diseases

and drugs combined.

3. Resolve to learn about the five major causes of childhood injury: motor vehicles, drowning, fires, falls, choking and poisonings. Learn what you can do at your home and in your car to reduce the risk of injury to your children.

4. Resolve to take a class in emergency response and first aid. Know what to do if your child is injured.

5. Resolve to tell your friends and other parents about your resolutions and what you have learned about childhood injury.

6. Resolve to talk to your children about safety. Explain to them the steps you are taking to make their world safer.

The National SAFE KIDS Campaign would like to help you keep your New Year's Resolutions. Write: SAFE KIDS, Booklet PR, 111 Michigan Avenue, NW, Washington, D.C. 20010, for a free booklet entitled, "How To Protect Your Child From Injury.

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#### **US-Soviet Union Extend Physical Fitness Agreement**

Presidents Council on Physical Fitness & Sports January 1989

The President's Council on Physical Fitness and Sports has announced a three-year extension of its agreement with the Soviet Union's State Committee for Physical Culture and Sports to exchange fitness and sports information, research, and physical fitness specialists.

The extension was signed recently during a meeting in Moscow by Dick Kazmaier, the PCPFS chairman, and Marot Gramov, chairman of the Soviet Committee for Physical

Culture and Sports.

Under the agreement, which is a part of President Reagan's US-Soviet Union initiative signed in Geneva in 1985, the two physical fitness and sports groups agree to:

\* exchange literature and results of research in the fields of physical preparation and physical culture, sports medicine and mass sports.

\* exchanges of specialists in programs of physical fitness and sports for the total population. Specific events and dates will be arranged and invitations will be issued by

The new agreement extends through 1991 the pact originally signed in February, 1987, by Gramov and George Allen, then chairman of the PCPFS, which produced the US-Soviet Union youth fitness testing exchange program.

More than 55,000 youngsters in the United States, representing 207 cities and all 50 states, took the Soviet Union's



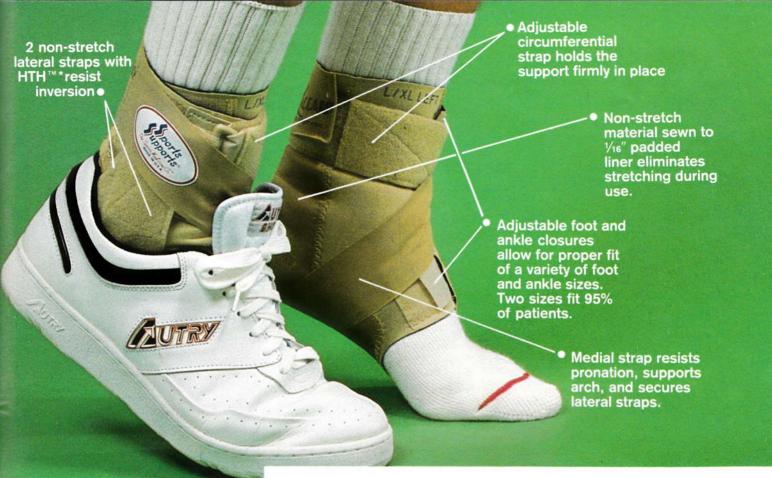
Dick Kazmaier (left), chairman of the President's Council on Physical Fitness and Sports, and Marot Gramov, chairman of the USSR State Committee for Physical Culture and Sports, shake hands in Moscow after signing an agreement to continue an exchange of fitness and sports information, research, and physical fitness specialists through 1991.

physical performance test during the 1987-88 school year. In exchange, a similar group of Soviet youngsters took the "President's Challenge," the testing program of the President's Council. ®

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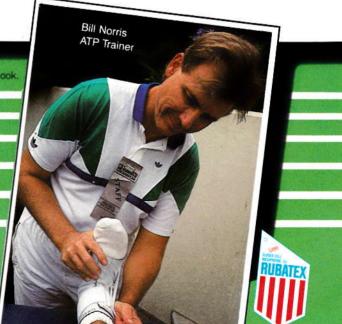
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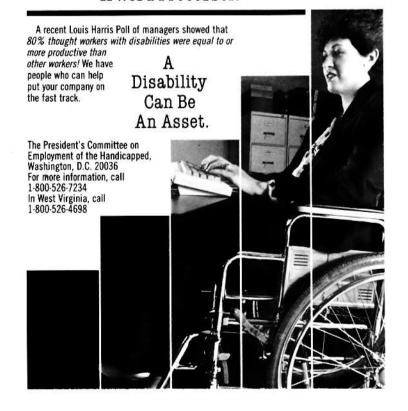
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