A One Day Educational Conference

ANABOLIC STEROIDS

USE AND ABUSE

SEPTEMBER 29, 1987

MARRIOTT HOTEL

Orms Street

Providence, Rhode Island

Edward D. DiPrete, Governor

Rhode Island Department of Health

Rhode Island Department of Mental Health, Retardation & Hospitals

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Welcome to this one-day educational conference on anabolic steroids. This meeting is approved for six contact hours by the Rhode Island Medical Society, and the Rhode Island Board of Pharmacy. In order to comply with educational standards, we ask that you assist us by filling out two forms, which are in your folders. The first is a simple questionnaire dealing with the facilities and the program, and the second is asking for your evaluation of the lectures, and their professional value to you. Please turn these in at the end of the program. You will find some professional literature in your folders as background material.

One of the goals of the conference, from the beginning, and of the Conference Committee, was to try and seek enough funding to provide you with a written copy of the proceedings that are here today. You will see a tape recorder, and some preprinted speeches being handed in, so, if you are not able to take notes as completely as you would like to, we will have a printed program as quickly as possible. If you are registered we have your address. There is also a brief biological sketch of your featured speaker, Derek Sanderson.

I also need to call your attention to the fact that two department directors, my director, H. Denman Scott, M.D., of the Department of Health, and Tom Romeo of the Department of Mental Health, Retardation and Hospitals, have provided major funding for the conference. I invite you to note the contributors that are listed in the handouts. Without these drug companies and their major contribution, the program could not have been funded since registration fees do not cover costs of room, food, and other program costs.

Finally, in order to hold introductions to a minimum, the faculty for today is listed along with the Conference Committee. I would like to compliment these individuals. They have been on the telephone with us, and have worked very hard preparing speeches, writing letters, and doing all the things that make a conference successful. I know that not one individual can put something like this together.

At this time, I wish to introduce you to Dr. Scott. Dr. Scott is the Director of the Rhode Island Department of Health. He has had a very successful private practice, and he was in the department as an epidemiologist. He teaches at Brown University Medical School and Rhode Island Hospital, and has joined the faculty of the Universtity of Rhode Island, College of Pharmacy, and holds a Master's Degree in Public Health.

As Director of Health, Dr. Scott is responsible for public health in many areas; such as, food protection, disease control, water and environmental issues, drug contol, and has many, many things to worry about. But, when we described the problem we were seeing, Dr. Scott immediately grasped the importance, and ordered that a conference be held to disseminate this information, and try to find some

interventions. He has lectured to other groups, and, as a concerned physician, is well qualified to offer this health perspective on anabolic drugs.

I would like you to welcome Dr. H. Denman Scott. . .

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This one-day conference on the use and abuse of anabolic steroids, came about because I became convinced over the last two years that the problem had to be addressed. During that time, Charlie Hachadorian, Jr., Rhode Island's Drug Control Administrator, has repeatedly urged that action be taken.

Being a regular follower of the National Football League, I became aware that the teams' offensive lines were more imposing than ever before. The players certainly were not losing any weight. To the contrary, just compare their size in the early 1970's with what it is today. In those days, a 250-pound or 260-pound lineman was a moose. Now, a player who weighs under 300, must wonder if he can succeed in the league.

I realize that we have more sophisticated equipment that builds body weight. I know that dieting and nutrition can work wonders. Still, lurking in the back of my mind, is the sense that the use of steroids has to be complicated, that, indeed, it may be fairly widespread.

Olympic athletes have been caught using them. We hear about their use at all levels of competitive sports. We know that body building is popular for its own sake, and for the athletic prowess that often accompanies increased muscle strength. A lot of gymnasiums are known to distribute these drugs in large quantities without incurring any legal liability.

Then, last summer, Dan Doyle invited me to attend the International Sports Institute at the University of Rhode Island. That prompted me to read more extensively about the problem of steroid abuse. That is all I needed to persuade me that we faced a potentially dangerous, long-term health problem for the young men and women of our society.

I asked Charlie if he thought we should hold a conference on the subject to learn more about it. His response was a resounding "yes". Subsequently, he offered the idea to his colleagues at the Department of Mental Health, Retardation and Hospitals, and the conference was born.

I would like to offer an idea for your consideration and wide discussion. It is worth giving some thought, not because I am advocating it as official policy, but because steroids have so insidiously imposed themselves on our society, that it is time to think about fighting back.

Question: Should testing for steroids be instituted on its own, quite apart from the mind-altering drugs marijuana, cocaine, and the rest? Should we consider testing for steroids at all levels of competitive sports? There is sentiment in favor of

testing candidates for participation in the Olympics, and the National Collegiate Athletic Association is moving in that direction.

It is bad enough to see professional ball players barred from the field for abusing steroids. But, when high school students find themselves at a 25 to 35-pound steroid disadvantage on the football field, use of the drug becomes almost irresistible.

So, I think we have to at least start talking about a remedy, about testing anyone who has his or her sights trained on interscholastic sports. Discussions should include parents groups, school committees, and, perhaps, students themselves. I want to emphasize that I am not advocating steroid testing. I am really quite nervous about many proposals for mandatory drug testing, for fear that our individual liberties may be unconstitutionally abridged. So, I want to learn more before taking a formal position. I do think that circumstances are forcing us to consider testing as a possibility.

I am not alone. Two of my medical colleagues spontaneously, and independently, approached me on the subject, to tell me how it is affecting their medical practice. So, you will be hearing from them at this conference. They are Dr. Bob Sarni, a general practitioner, and Dr. John Demicco, who practices internal medicine. Two very busy Rhode Island physicians, with the abuse of anabolic steroids very much on their minds.

With that I will step aside, and let the conference begin.

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The use of any drugs such as steroids to enhance athletic performance would in itself create great concern. However, an important additional factor which demands attention is that in the case of anabolic steroids, it has been well documented that severe medical problems have resulted from their use. This fact is of increased concern with use of steroids by athletes, because of the doses in which the drugs are generally used far exceeds the normal therapeutic dose. It is not uncommon for a weightlifter to consume 20 to 30 times the normal dose of an anabolic steroid in preparation for a competition. The medical dangers inherent in the use of these drugs, range from cosmetic ones; such as acne, to extremely serious - liver tumors and heart disease. Many fatalities have been attributed to the use of steroids by athletes. In addition, the medical pathologies resulting from the use of these drugs; although in many cases reversible in males, appear to be irreversible in females. In children, the use of anabolic steroids can cause disruption of the maturation process and permanent abnormalities in the growth of bones.

Clearly, this information compounds the problems surrounding the use of steroids by healthy athletes in an attempt to compete and win. At the heart of the controversy surrounding the use of these drugs, is the question of whether any drug, especially one with serious side effects, should be prescribed for, or used by, a healthy person for non-medical reasons. An argument which supports the position of drug use in such a situation states that the sport itself represents more of a danger than does the use of steroids and, additionally, that rational adults are making decisions for themselves. I would strongly argue against such a rationale, on the basis that, with few exceptions, the risks of a particular sport in no way compare with the risks involved in steroid use. Secondly, and I think more importantly, I do not feel that choices to use these drugs are, in fact, rational. It has been my experience, resulting from investigation of steroid distributors and users, that there exists an insulation from reality concerning the use of these drugs. The bodybuilding community is comprised of a very close knit group of individuals who act to strongly support one another, and who are bonded together by a common activity and goal. I feel that this closeness acts to insulate many weightlifters from the influence of others around them, who do not advocate the use of anabolic drugs. A compulsion to compete and win seems to develop in circles of serious lifters, which, out of apparent necessity, includes an advocacy for the use and distribution of these drugs.

Anabolic steroids are generally used by weightlifters and related groups of athletes in what are referred to as "cycles". These cycles usually run for a period of about twelve weeks just prior to a competition. Following the completion of a cycle, a short period of time is allowed for the body to rid itself of traces of these drugs so that they will not be detected during blood and/or urine tests at the competition. During a cycle an athlete takes steroids and other drugs, according to a procedure called "stacking", whereby several steroids will be taken in sequence to provide the

maximum increase in lean body mass. In addition to steroids, other drugs such as testosterone, human growth hormone, stimulants, diuretics, and drugs which promote increased tissue penetration of injected drugs, can be used to enhance, decrease side effects, or mask the use of the anabolic steroids themselves. A typical cycle may involve the use of more than two thousand dollars worth of drugs.

What is the developing role of Federal and State agencies responsible for regulating the distribution and use of anabolic steroids?

The division of which I am director, is comprised of 15 agents and supervisory personnel who are pharmacists, and who possess powers of arrest and search and seizure. Our primary function is to monitor through inspection and investigation, the licit channels of drug distribution within the State of Connecticut, with primary emphasis upon diversion of controlled substances.

In November of 1983, while conducting an unrelated investigation at a pharmacy in Hartford, our agents discovered records which appeared to represent the illegal sale of considerable quantities of anabolic steroids and related prescription legend drugs. This event, coupled with the receipt of two anonymous complaints concerning the illegal sale and use of steroids in Connecticut, led to the realization that a true problem was developing, and more importantly, from our perspective, that it involved medical professionals such as pharmacists and physicians. A review of our State's law, revealed that the most forceful criminal charges relating to steroid sale were only misdemeanors, which carried minimal penalties for those involved in steroid distribution. The information which we were in possession of at that time, however, indicated that there was considerable economic gain involved in the distribution of these drugs, and, additionally, that there was clearly a public danger posed by their use. For those two reasons, a commitment was made to investigate the illegal sale of steroids on a statewide basis, with the intention of raising public awareness and stemming the flow of these drugs from legitimate sources, especially those involving medical professionals. Based on information gathered during a one-year investigation, our division was able to obtain arrest warrants for one physician, four pharmacists and two bodybuilders, one of whom was distributing steroids on a national scale from a gym he owned. The criminal charges included illegal prescribing, dispensing, and possession of prescription legend drugs. Additionally, administrative actions against the professional licenses of the physician and pharmacists are currently pending.

In an effort to increase the public's awareness of the problem of illegal steroid use, information concerning the criminal and administrative actions, was released at a press conference, which resulted in major press attention to illegal sale and use of steroids in our State and across the nation. During our investigation, we provided information to the Federal Food and Drug Administration, which is confronting the problem on a national basis. The FDA has gathered information from individual states in an attempt to generate a true picture of the actual nature and scope of the issue. Our experience in Connecticut has been that we can, to some extent, operate to control the problem on an intrastate basis, particularly through the use of publicity and where medical professionals are involved through the use of administrative sanctions. However, because of limited jurisdiction, we are severely handicapped. It is a necessity that the FDA, and, perhaps, a federal en-

forcement agency, be actively involved in investigating and prosecuting those involved in steroid distribution on an interstate basis.

I see two immediate needs in beginning to provide adequate control over steroid sale. First, that the criminal penalty for distribution of anabolic steroids be increased from a misdemeanor to a felony on the state level. Second, that there be a requirement that all wholesalers of prescription legend drugs (anabolic steroids) be licensed by the respective states in which they operate. Currently, most states treat anabolic steroid sale as a misdemeanor, and some states do not require any license to operate as a wholesaler of prescription legend drugs.

We are continuing our effort in this State to confront the problems associated with illegal distribution and use in the hope of controlling the problem within this jurisdiction. In addition, however, it is our hope that our actions, and those of other agencies with similar interests, will begin to bring attention, and, ultimately, a resolution to the problem on a national basis.

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Donald Leggett received his Bachelor of Science in Chemistry from the Marshall University, and has completed postgraduate studies at five colleges and universities. Mr. Leggett was a Research Ethologist at the Florida Department of Health, and joined the Food and Drug Administration in 1963. Mr. Leggett has worked in various FDA positions in Detroit, New York, and Atlanta districts, and in five headquarter offices. Mr. Leggett has been presented with a number of Government Awards, including the Food and Drug Administration's Highest Award, and has been involved with investigations and regulatory actions with anabolic steroids since the initial agency action in 1983.

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Speaking of steroids here, and of "roids" in the locker room, we are actually omitting many of a large class of steroidal compounds. We are talking about testosterone, and the synthetic derivatives of testosterone. We are talking about androgens, male sex hormones, and anabolics. Testosterone is a primary contributor to male sexual characteristics. Among these are less body fat, and increased muscle mass. In addition, the testosterone group, certain synthetic derivatives, and related steroids are popular with black marketers. These include the nandralone group, methandrostenolone, oxymetholone, oxandrolone, stanolozol, and boldenone. The last two are of special interest as veterinary drugs for horses, cows, and other animals. The steroid abuser does not always limit himself to human drugs. You may not hear these names in the locker room. You are more likely to hear about "D-bol", "Maxi", "Horse", and "Deca".

The black marketer typically supplies other ergogenic drugs. While many of these are intended to stimulate the production of testosterone, others include stimulants, diuretics, estrogen suppressors, anti-inflammatories, and various hormones. To date, we have encountered approximately 80 such prescription drugs, both foreign and domestic, in black market investigations. It has been estimated that over 70 percent of the steroids taken in this country are used for their anabolic strength and mass building effects, and over 80 percent of these are obtained on the black market in violation of the "CAUTION: FEDERAL LAW PROHIBITS DISPENSING WITHOUT A PRESCRIPTION". They are being made available outside of legitimate channels, which would require that they be limited to use on the order and under the supervision of a licensed practitioner. FDA's regulatory initiatives involving the illicit sales of prescription drugs generally date to 1953, following amendments to the Federal Food, Drug, and Cosmetic Act, which facilitated such actions. That year, of the 150 criminal actions brought by the FDA, 115 were based on illegal sales of prescription drugs - primarily amphetamines and barbiturates (uppers and downers).

FDA's actions against such illicit drugs of abuse continued into the 1960's, when the Bureau of Narcotics and Dangerous Drugs (subsequently to become the Drug

to defraud the Government. He was sentenced to six years imprisonment, and ordered to pay over $210,000 in fines and penalties. This was a landmark decision. It was the first time that the courts had held that such activities were established with intent to defraud.

In Michigan, a black marketer pled guilty to three felony counts involving the illegal dispensing of prescription drugs. He was sentenced to prison for 1 1/2 years on each of these counts, and fined $6,000. In May, a 110 count indictment was announced, charging 34 people with a complex conspiracy to make, smuggle, and distribute millions of dollars worth of counterfeit and bogus steroids from a Tijuana laboratory. In July, an individual was ordered to pay $320,000 in fines, and sentenced to four years in prison for setting up the smuggling of anabolics from West Germany. His wife was fined $100,000 for her part in the 1.21 million dollar business.

Twelve individuals have been successfully prosecuted to date. A total of 5 1/2 million dollars' worth of black market, counterfeit, and bogus steroids have been seized. There is considerably more activity taking place in the federal pipeline, however, I would like to take a moment to recognize the excellent cooperation and individual efforts of various state and local agencies. These include, but are not limited to, Pennsylvania, Illinois, Alabama, Connecticut, California, Ohio, Massachusetts, and Tennessee. California legislation has made these drugs Class III controlled substances. Alabama is a Class V. Other states have introduced bills including Florida, Illinois, Massachusetts, New Mexico, and Texas. Several other states are presently drafting such bills. We are continuing to provide states with documentation obtained from steroid manufacturers and distributors, which involve suspect orders for these drugs. Legislation is also being explored on the federal front. The Attorney General has called for exploration of placing anabolics under the Controlled Substances Act. Congressman Baker has introduced legislation making it a felony to sell steroids without a prescription.

What trends are we observing? We have publicly announced that we have asked legitimate firms to tighten distribution controls, and supply information on suspect orders. Since then, we have perceived an increase in foreign source steroids, and illlicitly-manufactured steroids from underground laboratories in the black market. Reacting to this, several steps were taken with Customs to counter steriod smuggling. Anabolics of European and Soviet Block countries have always enjoyed considerable popularity in the domestic black market. In 1986, certain FDA actions, including the removal of methandrostenolone (the most popular anabolic), and methandriol from the legitimate market, are believed to have further enhanced demand for smuggled anabolics. Since foreign shipments and domestic distribution often utilizes the mail, increased involvement of the United States Postal Service is anticipated.

Perhaps, even more alarming, is the frequency in which bogus or counter feit anabolics are appearing on the black market. These include drugs produced by underground laboratories servicing the black market. Over two dozen of these drugs have been encountered thus far. Some are labeled with the names of legitimate domestic and foreign manufacturers, and others with the names of fictitious establishments. While these are designed to mimic in appearance anabolic steroids and related black marketed drugs, they are of unknown composition, sterility, and other characteristics which may present additional hazards to the "chemical athlete". Nationally, one black marketed hormone was found to be both nonsterile and pyrogenic. We have recently enlisted the assistance of bulk steroid distributors in identifying possible underground manufacturers.

Another perceived trend, is the attempted domination of the black market by a more-hardened organized criminal element. As the stakes get greater, force, firearms and controlled substances enter the picture. We see a trend in abusers also. The "megadose" race is on. Long-term abusers report exceeding labeled dosage limits by 20 fold. "Stacking", the concomitant use of multiple anabolics and ergogenics, is a twilight zone of unknown syner gistic and polydrug cross reactions. In long-term abusers, on-cycles are growing longer, and off-cycles shorter. With the advent of underground steroid laboratories, no one can depend on receiving an authentic, non adulterated anabolic in the black market.

What else is on the horizon? We have recently enhanced our dedicated computer capability to store, summarize and analyze the over 3/4 million articles of investigative data we have accumulated thus far. We are stepping up our public education campaign. Next month our drug bulletin, which is sent to all physicians, will highlight the anabolic abuse problem. In preparation for mailing to the country's public schools, are 1/4 million brochures and posters warning of the use of illicit steroids. We are coordinating this campaign with other agencies, as well as the athletic community. The communi ty and the media are not only reporting a greater awareness and concern, but also taking steps to decrease incentives which cause an athlete to resort to drug cheating to obtain a competitive advantage. We applaud those efforts to detect, counsel, and ban from competition, those who have made anabolic abuse a way of life.

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Dr. Sarni received his Bachelors Degree from the University of Rhode Island, and his Doctor of Medicine Degree from the University of Maryland Medical School. Dr. Sarni did his internship at Rhode Island Hospital, and was a Resident House Officer at St. Joseph's Hospital. Dr. Sarni has medical board certification with the American Board Family Practice, Fellow American Occupational Safety, and Diplomat National Board Medical Examiners.

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I would like to first preface my remarks by telling you about myself, and how I became interested in the subject of anabolic steroids. This subject was not something that was taught in medical school when I graduated, and I am sure that it remains not a common subject. How does a community physician, like myself, get involved in a subject of this kind? Well, the obvious answer is that someone walks into your office, and has a problem that relates to this. This is what happened.

Approximately five years ago, I had no awareness of this problem in the community. Until several occasions where I had some teenagers, and even some young adults, come in with problems that were related to anabolic steroids. One, in particular, came in with a severe case of pustular acne, generalized, and required long-term antibiotic treatment. On another occasion, a young man in his early 20's came in with an acute atrial fibrillation, with a very rapid heart beat, hypertension, and liver function abnormalities, requiring hospitalization. I do not want to give the impression that I have a large practice of people using anabolic steroids, but these are three simple examples of what is seen in the community.

This peaked my interest. From there, I did some reading, looked into the problem, and learned about the problem, because it is prevalent. Sad to say, anabolic steroids are easily obtainable in Rhode Island. There are some physicians who prescribe them. Unfortunately, they prescribe them not in a controlled manner, but simply because some athlete desires to use an anabolic steroid to build up muscle mass. These are not limited to professional athletes. They are not even just limited to college or high school athletes, but, also, people who just want to look good. It is a general problem. It is a problem that has to be dealt with.

Anabolic steroids, historically, were first used during World War II when they were given to German troops, in an effort to increase muscle strength and aggressiveness. Their use in athletics probably began in 1954, when anabolic steroids were administered toRussian male and female athletes. In 1968, the medical commission of the International Olympic Committee established its list of banned substances, and began its drug testing program. It was not until 1976, at the Olympic Games in Montreal, that technology was sophisticated enough to detect anabolic steroids in the urine. The use of these drugs by athletes and others, has now reached alarming proportions. For instance, in the 1983 Pan American Games, 17 competitors were disqualified because of drug use. In the United States, anabolic steroid use has spread from professional athletes, to college and high school athletes. It has also been reported to be used among athletes that are not participating in competitive sports. These are the people that just want to look good.

The pharmacologist and physiological actions of anabolic steroids are not restricted to a single organ, but is the result of stimulated biosynthesis of cellular protein in the whole organism. Anabolic steroids are derivatives of testosterone, which were developed in an attempt to dissociate the androgenic and anabolic effects of testosterone so that only the anabolic effects were maintained, and the androgenic side effects were minimized. As yet, it has been impossible to completely dissociate the two effects.

Anabolic steroids have two, widely-acceptable medical uses. Because of their ability to stimulate erythropoiesis, they are used in the treatment of certain types of anemia. They are also useful in stimulating sexual development in hypogonadal males. All anabolic steroids exert some virilizing effects.

Anabolic steroids can be divided into two broad categories. Those that are active when taken orally, and those that are active when administered parenterally. Parenteral anabolic steroids have been gaining popularity because they require less frequent administration than the oral preparations, and are associated with less liver toxicity than the oral form. These drugs exert their effects by binding to a cytoplasmic protein. It is a protein receptor in the skeletal muscles, as well as in other target organ cells. The steroid receptor complex is then transferred to the nucleus where it stimulates genetic mechanisms to increase ribonucleic acid synthesis, which, in turn, causes an increase in protein synthesis of ribosomes. In certain circumstances, anabolic steroids promote the synthesis of protein in skeletal muscles, and, also, in other tissues. For example, in the androgen-deficient males, these drugs promote nitrogen retention, increase lean body mass, and enhance growth. However, it is questionable, whether these effects occur in a normal male. The legitimate use of anabolic steroids is in the treatment of hypogonadism in males. In this instance, the aim of androgen therapy is to help develop or restore normal male secondary sexual characteristics, and to help normalize male sexual behavior. As previously stated, anabolic steroids have also been used to treat victims of starvation, and in patients who are chronically ill and debilitated. Some examples of this in its early use, was in the prisoner of war camps. The drugs, in this case, are given to induce a state of positive nitrogen balance, to enhance appetite, and to help these patients regain their strength and weight. Anabolic steroids have shown to promote erythropoiesis, probably by directly stimulating the production of erythropoeitin. Large doses of anabolic steroids have been shown to increase erythrocyte counts in both men and women. Because of this, they have sometimes been used in the treatment of certain types of anemia, and the two types in particular are, Aplastic anemia, and anemia from renal failure.

The adverse effects of anabolic steroids are numerous. Anabolic steroids depress the gonadotropins, depress luteinizing and follicle stimulating hormones, causing decreased testosterone production, testicular atrophy, prostatic hypertrophy, and oligospermia. In women, the androgenic effect, or aspect of anabolic steroids, causes a similar gonadotropin decrease, and also acts on secondary sex characteristics, leading to male- patterned hair distribution, deepening of the voice, menstrual irregularities, and clitoral enlargement. It is well known that anabolic steroids have feminizing side effects, including breast enlargement in males. Testosterone can be converted by the body to estradiol, which is a female hormone. It is presumed that anabolic steroids can likewise be converted to estrogenic metabolites, since gynecomastia is a frequent side effect of these drugs. This is par-

ticularly true if the drugs are used before completion of puberty, when the capacity to convert androgens to estrogens is much greater. Since estrogens are inactivated by the liver, the development of gynecomastia in adult men using anabolic steroids, might be a clue to unexpected liver disease. The toxic and metabolic side effects are many. Anabolic steroids may induce cholestatic jaundice, which is an obstruction of the flow of bile and raises the serum cholesterol while decreasing the high density lipoprotein fraction. Other reported side effects have been hepatoma formation, hypercalcemia, hypertension, muscle structure abnormalities, salt and water retention, and peliosis hepatitis (blood-filled liver cysts).

More recently, in the literature, there have been reported cases of law-abiding individuals committing serious crimes after being on anabolic steroids. These crimes all had a common thread of aggressive behavior with marked personality changes that were never present prior to the use of anabolic steroids.

The real issue is whether or not there is a place for anabolic steroids outside of the legitimate medical uses, as previously indicated. All of us here need to resolve this question, based on the scientific information that is present today. My personal opinion is that there is a terrible abuse currently with the use of anabolic steroids which is harming our young men and women who are engaged in various sports activities today. Whether or not anabolic steroids enhance performance is not the real issue at hand. The fact that anabolic steroids may cause serious and even life-threatening side effects overrides all other considerations, and mandates their control and proper use by all health professionals.

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In my part I decided to touch upon the abuse in the athletes here in Rhode Island primarily, and to also discuss some of the ways these drugs are used. I was very aware that these drugs were being given out in various gyms in the state. I called Dr. Scott, and asked what I should do about it. I was aware that there was a big problem here, and wanted to know what I was obligated to do. Nationally, it is probably easier to get to the core of the problem. To read the literature, there is an estimated one million abusers in the country. It is estimated that 70 percent of all steroids taken, are for anabolic strength, and that 80 percent of them are obtained from the black market. In the headlines you read about the 17 disqualified athletes in the Pan American Games. You remember hearing about the Moscow Olympics, Russian women athletes were earlier banned from international competition. Usually that ban lasts 18 months. However, the Olympic Committee made an exception, and they were able to compete just in time for the next Moscow Olympics. Such action seems to almost condone steroid use.

What about locally? I went to a couple of gyms, and asked how many people do you think are taking these drugs in the state. It was reported at the first gym as 1,000 people. I went to several other gyms, and that first estimate was the lowest that I got. The highest number was 5,000. This includes not only in professional competition, but in the high schools. I still did not believe it. I then let it be known at a local gym in Bristol, that I was interested in this field, and that I might be willing to supervise athletes with these drugs. The phone absolutely rang off the wall. I could not believe it. So, I would say, there probably is several thousand people in this state alone taking these drugs.

There are books that you can read. The book that seems to be the most popular in this state, is the UNDERGROUND STEROID HANDBOOK, published in California, and you can also obtain the black market source for anabolic steroids. If anyone is interested, I have the address and post office box number. I am going to discuss the side effects, and how they are minimized.

In those books, the first on the list are diuretics. They talk about Aldactone, Aldactazide, and Lasix. They know very well that when you take these drugs, you get steroid rise, along with estrogen rise, and that you retain a lot of water. This is not good because the puffy look can be the determining factor of whether you win or lose in a body competition. Now, they are not concerned about water retention, per se. They are only interested in looking good.

Anadrol is considered the best buy of all the steroids. It makes you feel big and strong. They use approximately 1-3, 15mg tablets, a day. They admit that Anadrol can be quite nasty to them, but if you can consume large amounts of alcohol, you can probably tolerate this drug. Women can get a husky voice, and facial hair growth. Headaches and sleeplessness, and a general feeling of malaise, can often be a problem. The price is approximately $40-$50 per hundred legally, and $50-$75 on the black market.

Dianadrol is anywhere from $17-$20 per hundred. This drug does not make you big, but it does make you strong. It is the number one oral drug used by women because it has very little dangerous side effects. Dianadrol relates its remarkable synthesis to an extraordinary degree, and does not aromatize, which means it is not converted to estrogens, and, so, water retention is not considered a big problem. Muscle mass may be a little smaller, but this can be overcome by the use of certain amino acids. If you do not take these, you probably can take the drugs, but you would use your own muscle mass to provide the synthesis.

Polasterone is a very hard drug to get, but it is the best oral steroid on the market in terms of size and strength. It is very high in liver toxicity, and is used mostly in the Communist block. Although the drug is talked about, it is not seen much here.

Decadurabolin is the most popular, and is an injectable that comes in 50mg, 100mg, and 200mg strengths. The price is probably $20 for 100mg if administered by a physician, or $12 if self-administered. It is the best injectable when you compare what it does to what it costs. It takes three days after injection for it to dissipate, and lasts about 17 days. It is not very androgenic, so it could be used by women. The dosage is 200mg a week, but some athletes, before competition, will use 200mg a day. The duration of use is 2-4 months. It is said that there are few side effects, but that the clotting time is increased, and there is a possibility of getting a bloody nose.

Stanzolol goes for $25 per 100, and $35 on the black market. It is the most effective for strength, size, and durability because there is considerable water retention and it aromatizes quite a bit. Dosage jumps are seen quite a bit when using the drug because a lot more of it is needed. What is good about the drug, is that it can be gotten in Mexico over the counter. The dose is 5mg, and usually the physician recommends it in 5mg tablets, four times a day. Most physicians will use 8-10 a day, but 100 tablets a day is not unheard of. It is androgenic, so women do not use it at all.

Growth hormone injectable is the best drug for permanent muscle gain, and which has an expected gain of 30-40 pounds of muscles in ten weeks, if at least 10,000 calories a day is eaten. The cost is $600-$800 a box, which has four bottles. The usual dose is two units every three weeks. This drug, they say, can remedy inferior genes because it will make anyone grow. It does elongate the chin, feet and hands, and may also cause diabetes and heart problems. Although the use of this drug is a big gamble, it is loved by the athletes. Human gonadotropin (HCG) is also an injectable, which stimulates the testicles to produce testosterone, and helps start normal testicle func tion when steroids are discontinued. The cost is $10-$15 a box, which has two bottles, and $20-$50 on the black market. The usual dose is 1cc a day for two weeks. It is warned that the pituitary will shut down its production of gonadotropins. They are used frequently because it is believed that if the natural body androgen is raised, it will combat water retention, which is probably untrue. Halotestone is considered expensive in Rhode Island, and it also makes a person grouchy. A female athlete came into the office who was taking it. She stated that when her husband came home late, she knocked him unconscious. Methandriolpropionate is not used in this state. Methyltesterone is used at $20 a hundred, and is used to promote aggressiveness, which helps an athlete get through

training. The drug helps an athlete get off 10,000 calories a day, and has a lot of side effects.

Muscle growth factor is something that may be seen coming up. It is from Japan, and causes the cells to multiply rather than just enlarging. It is considered the drug of the future, and costs $60 for a bottle of 60 tablets. This is an antagonist that is used to combat breast cancer in women. It eliminates estrogen and water retention, and an athlete gets hard looking when on this drug. The dose is 4-10 tablets a day. There are no side effects in men, and women may get a little menopause. The rest of the drugs are basically used periodically. These include appetite suppressants and appetite stimulators, which are needed when 10,000 calories a day must be consumed. The list also includes Prednisone, which is used for joint aches or pains after working out. Premavol acetate is also used, and is said to be the only steroid that is muscle sparing, so not much muscle mass is lost. Various testosterones are also used, and other drugs which do not have a place are also listed (for example, Winstrol).

How are these drugs used? The longer a person stays on the drug, the more permanent the weight gain will be, unless the drug is stayed on beyond the point of desired size and strength. A minimum of 6,000 calories a day are needed, and if the increased body weight is kept for over six months, most of the muscle mass acquired after coming off the drug will be retained. It is said not to worry, since there are so few side effects on these drugs.

Cycles are used, but there is really no one cycle that anyone uses. The wrestler will use one. A swimmer will use another. The cycles are individualized, with a great deal of experimentation, and danger. The most popular cycle used by the body builders is called pyramiding or stacking. Drugs are kept being added until the effect wanted is achieved. The athlete would probably start on Dianabol, 6-8 tablets a day, or Anadrol, 3 tablets a day. Whichever is cheaper. Until a plateau is reached whereby the athlete no longer gains any size or strength. Then, another drug is used which is continued until they plateau again. After the athletes do a cycle once or twice, they get to know where their limits are. At this point, the injectables are used. Decadurabolin is the drug of choice, usually 1mg every two weeks. Three days later, they start to taper off the orals. First, the Anadrol is tapered off for two weeks. Then the Dianabol is tapered off the next weeks. Then the Decadurabolin is tapered off. When it gets down to 100mg of the Decadurabolin, 50cc of testosterone is started, then 1cc of HCG daily is added to produce testosterone, and then declomide for one week to get the pituitary to kick in, and he is "back to normal".

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Mr. Catalano, an educator and a registered pharmacist, is the Coordinator for the Substance Abuse Prevention Programs for the City of Cranston. He is the Developer/Coordinator of the Peer Education Program in the City of Cranston Public Schools, which has been adopted by fourteen Rhode Island school systems. Mr. Catalano is a former Chairman of CODAC, and has been a member of its Board of Directors since its inception in 1970. He also serves on the Executive Committee of the Governor's Committee on Youth Alcohol and Substance Abuse, and the Cranston Mayor's Advisory Committee on Substance Abuse, and is also a member of the Rhode Island Pharmaceutical Association.

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The abuse of drugs in the athletic arena is certainly not just a recent phenomenon. It is reported, as far back as the 3rd Century B.C., that athletes in the Olympic Games tried to improve their performance by eating mushrooms. Throughout history, various substances; such as, opium, hashish, laughing gas, and benzedrine, have become the drug of choice for a particular era. In the 19th Century, it was recorded that swimmers, cyclists, football players and boxers, were consuming substances; such as, cocaine, caffeine, heroin, and even strychnine.

A more dramatic increase in drug misuse in sports started in the late 1960's. That is because society, as a whole, came to believe increasingly that there were drugs available to deal with most ills, diseases and problems that faced them during that day. Inevitably, the athletes, as part of society, became caught up with the drug culture itself.

Ten or fifteen years ago, when the term "drug problem" was used with reference to athletics, one automatically assumed it meant marijuana, cocaine, amphetamines, barbiturates, or even heroin. Although social drug use among high school students and college athletes still exists today, there is another substance that is emerging rapidly. At all levels of athletic competition, including high school, the abuse of so-called "enhancement" drugs; specifically, the anabolic steroids and growth hormones. This is a very real and dangerous problem, and one that has to be addressed, and addressed forcefully.

In the Fall of 1986, the NCAA tested for drugs, over 1,000 college student athletes from different sports. The NCAA had expected to find a variety of street drugs, including the amphetamines, cocaine, and anabolic steroids. Instead, all their positive tests were for steroids. This vanity drug has even caught the attention of drug dealers who sold last year, an estimated $100 million in the black market regarding steroids. Perhaps, the most disturbing news to date, is the fact that those who are

most vulnerable to the side effects of these drugs, are using them in increasing numbers. That being, women and teenagers.

How do we attempt to stem this tide? What action might be taken to reverse this so-called "in" trend?

One of the areas that needs to be looked at, and which plays a vitally important role in an attempt to combat the misuse of substances, and steroids in particular, is education. Education has to take some action.

For education to be effective, the issue of steroids has to be approached in the classroom situation. Preferably, this topic should be addressed as part of the Substance Abuse portion of the Health Education Curriculum, and, whenever appropriate, it may be integrated into the lessons of other disciplines; such as, biology, the humanities, or any related field. The issue has to be addressed specifically, and hit upon consistently.

The abuse of this substance by a special group of people, is as serious a problem as the abuse of alcohol and other drugs. For this reason, we need to be as concerned about this topic, as we are about other topics related to the drug scene. When the issue of substance-abuse is addressed within the classroom setting, a portion of the lesson should be reserved for the topic of steroids.

There are also special programs that can address this topic, and have been used in this state recently, where steroids may be incorporated as part of a special program. The Peer Education Program has linked the topic of steroids into its program. This is a cross-age teaching program whereby, high school students conduct classes at the lower grade level, relative to the topic of substance abuse and decision making. Back in the 1970's, only a small group of 12 youngsters initiated this concept. For the last ten years, approximately 175 high school students each year, from both Cranston East and West, have participated in the program. The student teachers visit the same elementary not once or twice, but approximately nine times in a given semester, giving them the opportunity to provide not only basic and accurate information pertaining to substances, but to also devote time to the topics of decision making, and thinking for oneself.

One of the main advantages of this program, is that the students are helping with a mutual problem, and are wholeheartedly engaged in the planning, presenting, and evaluating aspects. Recognizing the fact that the misuse of steroids has continued to escalate in recent years, the high school students included this topic in their lessons at the secondary level, and make reference to it, when indicated, at the lower grade level.

Another approach that has been utilized by a number of school systems, including Cranston, involves a special substance abuse presentation for athletes, coaches, and parents. This format, which provides guidelines and recommendations for school personnel, is entitled, "Team Up for Drug Prevention", and is promoted nationally by the National High School Athletic Coaches Association. On the local level, the Governor's Committee on Youth Alcohol and Substance Abuse, the Providence Journal, the Interscholastic League of Rhode Island, and

the Todd Monzilli Fund, have encouraged school systems to initiate prevention programs specifically for the athlete.

The Peer Education Concept, "Team Up for Drug Prevention", and the School Curriculum, represent a few of the approaches, from an educational standpoint, that may help youngsters make a more intelligent decision for their own well being with regard to the use of substances.

There are many valuable players that help to mold a successful team, and education is one of them. To wage a successful campaign against the misuse of substances, and steroids in particular, there must be a firm commitment on the part of all the essential players-educators, law enforcement agents, treatment providers, parents, and, most importantly, our youth. A total community involvement is necessary from all facets of society, and then positive results can be attained.

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Steroid use and abuse. What constitutes abuse of steroids? People ask what is the prevalence of steroid abuse in America. How many people use them? We really do not know. Why are they used? Why are people so adamant about the positive effects of steroids? Where are they taken? What is abuse of steroids? Are these drugs abusable? An FDA official states that steroids are not abusable drugs. What are the pros and cons?

Let us start back when Brian Bosworth, a linebacker for the University of Oklahoma football team, was prevented from playing in the Orange Bowl, after steroids were detected in his urine. Here was a chance that one All American had, to play in an Orange Bowl game, and to star on national television. He lost this opportunity by virtue of the fact that he had used these drugs. This incident helped to bring the whole issue of steroid use and/ or abuse to the American public. In other words, are anabolic steroids drugs of abuse? Brian Bosworth states that they are not!

Athletic bodies, such as the NCAA, the International Olympic Committee, and the United States Olympic Committee, believe that steroids are abusable drugs, and are now spending literally, millions of dollars to try to uncover evidence of drug abuse by athletes. Drug testing is another area of recent concern. It is really expensive to do an accurate drug test. Recently, a company in Chicago was selling a mailorder drug test, which could determine whether children were using marijuana, PCP, or other drugs. It cost about $25 for a home drug test, but it is a lot more expensive to do valid drug testing for steroids or other controlled substances. Bosworth, in his last year in college, exposed confusion about whether steroids are drugs or not, and to review this case quickly, Bosworth said he had used the steroid Decadurabolin. It is within the scope of the sophisticated drug testing methods in use now, to be able to detect residues in the system of drugs that were used months ago. Bosworth said that he had quit using drugs in March, and, although he is opposed to recreational drug use, he told the boards last month that he should be able to use anabolic steroids because they are not abusable drugs. "Steroids are not destroying society," he said. The contrast in most people's minds between drugs and anabolic steroids was summed up by Bosworth's coach, Barry Switzer, who told reporters, " certainly rather it be steroids than cocaine or marijuana." A little difference of opinion? For most of us in the Health Department, it is believed, quite frankly, that steroids are abusable drugs, which cause problems.

There are people who feel that these are not abusable drugs, and that government does not have any business determining how steroids should be used, or by whom. It has been heard several times this morning, that 70 percent of the steroids taken in this country, are taken for anabolic strength building, and that 80 percent of these steroids are obtained through the black market. An estimate of the dollar value for the black market steroids in this country is approximately 100 million dollars a year. Those are just the drugs produced legitimately in the United States. That does not refer to drugs that come in from Mexico or Europe, which we do not have a handle on.

Many sports activities are well represented by steroid users, and we are not beginning to hear testimony about the cosmetic use of steroids. An article in the PROVIDENCE JOURNAL, 23 August 1987, states that steroid use is widespread among teenage boys, and mentions the fact that according to a survey done in some Florida high schools, 85 percent of the high school students were aware of friends who used steroids. Within this age group, use is for cosmetic purposes. They want to look good. They want to impress people. They want to attract the opposite sex. Both males and females are using steroids.

For what kinds of sports activities are they using steroids? Traditionally, weightlifters and body builders are thought to be users of steroids, the muscle sports. Many people who are into endurance sports, are starting to use these drugs also. People who are involved in swimming, jogging, and biking, are beginning to use steroids. The athletes competing in the endurance sports find that steroid use gives them an edge. If the edge is, as stated, one percent, that may be just enough for a person to win in an athletic competition.

At one time, as a shellfish law enforcement officer, we were experiencing a problem of never having boats fast enough to catch the shell fish poacher. As we were trying to devise some way of catching these "pirates", the people who were doing illegal shellfishing, we got a new motor that had the ability to go probably one half mile an hour faster than the fastest "pirate". What could we do with a one half mile an hour advantage? It finally dawned on us that one half mile an hour on the water, is as good as 50 miles an hour, and this poacher is going to be caught sooner or later, provided our motor did not run out of gas. The one-half percent advantage from steroids is what may do it for these athletes.

WHAT ARE STEROIDS?

Steroids are synthetic drugs developed to build muscle and promote the masculinizing effects of the male hormone testosterone.

WHAT ARE LEGITIMATE MEDICAL USES OF ANABOLIC (MUSCLE BUILDING)/ ANDROGENIC (MASCULINIZING) STEROIDS?

Physicians prescribe them in low doses to correct hormonal imbalances or to prevent withering of muscle in people recovering from surgery, starvation, or some other trauma.

WHY THE GREAT CONCERN RECENTLY REGARDING THE USE OF STEROID DRUGS?

The use of megadoses of anabolic steroids by amateur and professional athletes without regards to possible short and long term adverse effects, has created increased interest in what may become a major social problem of the late 1980's.

WHAT KIND OF SOCIAL PROBLEM? HOW MANY PEOPLE ARE WE TALKING ABOUT?

It is estimated that one million people in the United States have used or are current users of steroids. How many? No one really knows.

WHAT ARE "POSSIBLE SHORT AND LONG TERM ADVERSE EFFECTS"?

Side effects of anabolic steroids range from annoying acne, to deadly liver tumors.

One difference between athletes and patients who have anabolic steroids prescribed for them, is that athletes may take 10 or more times the recommended dosage of a few milligrams per day.

"There is an American notion, that if two are good, 12 are better", according to D.V. Harris, Professor of Physical Education at Penn State University.

Most of what is known about side effects of steroids, comes from studies of sick or injured patients who have been prescribed steroids legitimately.

WHAT ARE SOME SPECIFIC PHYSIOLOGICAL ADVERSE EFFECTS?

1. Baldness will occur in some men and women.
2. Acne (as previously mentioned).
3. Gynecomastia in men or breast enlargement.
4. Testicular atrophy and decreased sperm count.

WHAT IS A "CYCLE", AND HOW LONG DO THEY LAST?

A "cycle" is a specific length of time during which the athlete administers the steroid drugs while training at the same time. The average length of a "cycle" may be from 8 to 12 weeks during which the doping goes on, and the range of length of the various "cycles" may be from 4 to 22 weeks.

WHAT SUBSTANCES ARE USED?

Over 40 different chemical anabolic/androgenic steroids have been discovered. The most commonly used oral steroids are Methandienone (Dianabol), Oxandrolone (Anavar), Stanzolol (Stromba), and Methyltestosterone.

The most popular injectables are Nandralone Decanoate (ND or Decadurabolin), Metheneolone (Primobolan), and also some veterinary steroids such as Boldenone (Equipoise) and other steroids that are manufactured in other countries and are not approved by the United States Food and Drug Administration.

WHERE DO THESE SUBSTANCES COME FROM? HOW ARE THEY OBTAINED BY THE USERS?

Approximately 80 percent of the steroid market in this country is supplied by "black market" distributors. The other 20 percent comes from legitimate prescriptions.

Some steroids are smuggled in from Mexico and Europe, while others are diverted from legitimate manufacturers in this country. The United States Drug Enforcement Administration estimates that there may be 10,000 questionable United States outlets, 15 manufacturers, 15 importers, and upwards of 500 distributors handling the United States traffic.

Steroids are also obtained by the athletes from employers of pharmaceutical houses, veterinarians, pharmacists, and other athletes. Health clubs also provide a major distribution point for these drugs.

Dr. Robert Voy, Chief Medical Officer and Director of Sports Medicine for the USOC, states that today between 30 and 40 percent of performance enhancing drugs are obtained from licensed physicians.

WHY DO PEOPLE DO STEROIDS?

Obviously, "to improve performance!" This leads to more questions.

DO STEROIDS ACTUALLY IMPROVE PERFORMANCE? ARE THEY HARMFUL TO HEALTHY PEOPLE?

"Some athletes indicate that if the answer to the first question is "yes", then the answer to the second question is not important!"

DO STEROIDS IMPROVE PERFORMANCE?

There is a lot of anecdotal evidence, rumor, or testimony, from people in the locker room that say if a certain combination of drugs is taken, or stacking types of drugs, and doing particular cycles of them, that performance is improved. The scientific evidence is about evenly divided.

Dr. Bruce Catlin, a physician and a pharmacist, is in charge of the United States Olympic Committee's Drug Testing Program in California. In regard to anabolic steroids enhancing performance, he says that "Anabolic steroids enhancing performance, promoting growth in a normal male, and/or increasing strength is controversial. Experienced users often insist that anabolic steroids do enhance all three, however, our review of the 25 studies [studies they had reviewed which pertained to these issues], find enhancement to be negative, inconclusive, or, at best, indicative with small increases". To be fair to the other side, Dr. Catlin also states that even differences of one percent, can be considered important in the content of athletic records. What Dr. Catlin is saying is that the reviewers are finding it positive for the use of steroids, but state that diet is a necessary factor, and increased regimen of exercise is also a necessary factor.

Dr. William Taylor of the American College of Sports Medicine, states, "The American College of Sports Medicine revised its position on steroids. The revised position is that the concurrent use of steroids and training with a proper diet may enhance athletic performance."

WHY BAN DRUG USE IN SPORTS? WHAT CONSTITUTES ABUSE? ARE STEROIDS ABUSABLE?

The U.S.O.C., and I.O.C., and the N.C.A.A., ban drug use by their athletes on both medical and ethical grounds.

MEDICALLY - the premise is that any substance powerful enough to alter the body's systems can have harmful effects. Drugs are not intended to be used to increase athletic performance.

ETHICALLY - The premise behind banning doping agents is that artificial aids interfere with the basic nature of sports contests, where competitors are meant to test their natural abilities against one another. It is felt that athletes who avoid drugs are at a disadvantage competing against those who do use them.

DOES EVERYONE AGREE THAT DRUG USE IN SPORTS SHOULD BE BANNED?

"No", emphatic "no". Norman Fost, Director of the Program for Medical Ethics at the University of Wisconsin, says that the risks to an athlete's health from steroid use, may not be so great as participating in sports such as boxing or football, which athletes undertake willingly.

The diet and training regimens athletes put themselves through could be called unnatural. Any advantage gained by taking drugs may be no more unfair than the advantage of having the luck to be born to athletic parents, or to have eaten well in childhood.

Perhaps an athlete's decision to take performance-enhancing drugs should be his or hers alone, according to Fost, just as some people opt to take the risk of plastic surgery in hopes of a better appearance.

Does an individual's use of a drug or chemical constitute a danger to himself or to society? If the answer is "yes", than you can consider the activity as eventual drug abuse.

DOES THE REPEATED ADMINISTRATION OF STEROID DRUGS IN MEGADOSES CONSTITUTE A THREAT OF POTENTIAL HARM TO THE USER AND TO SOCIETY?

Consider these characteristics of steroid use, in addition to other adverse side effects previously mentioned, and then decide for yourself whether or not "drug abuse" enters the picture.

Continued use of extreme doses:

1. can induce aggressive and violent behavior, "Roid Rage".
2. can cause habituation and task-oriented addiction.
3. can cause withdrawal depression, and other withdrawal phenomena.
4. can have potential atherogenic properties (cardiovascular disease, fluid retention, hypertension, clotting abnormalities).
5. can cause possible permanent effects on stature when used by adolescents.
6. can and will have other unknown long term effects.
7. may become "gateway" drugs, leading to other illegal drug use.

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Robert Griffin, in his 12th year as Head Football Coach at the University of Rhode Island, has been coaching since 1963. During these past 23 years, he has spent four years as a high school coach, five years at Idaho State University, and spent four years as Assistant Coach at the University of Rhode Island. Mr. Griffin has served as National Chairman of the IAA Coaches All American Committee for the last eight years, and is presently continuing in that capacity. He was the IAA Coaches Representative in 1986, as well as serving on the Program Committee in 1979. Mr. Griffin has received many honors, including the 1975 Coach of the Year, District 8 Rocky Mountain West, the 1984 Coach of the Year Yankee Conference, and 1985 Coach of the Year by several groups.

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It is very interesting for me to sit and listen to experts from different areas, and different perspectives, in this field, and the medical, educational, and enforcement fields, and then to have the opportunity to give a nonmedical, coach's perspective as to where we have been with this problem. I do not have the answers as to where we are heading. I have had an opportunity to see this problem as it exists now, and to see it grow in different areas of the country. My thoughts are not oriented towards the medical aspect, but just as a coach working with young people and competitors.

The first time I had heard the term "steroid" or "anabolic steroid", was in the late 1960's, when the term had come to me at the University of Rhode Island, through one of our track performers who was competing for a national championship. The time period was somewhere between 1966 and 1968, and comments were made after returning from the national championship competition about it being almost impossible for an individual to continue to compete as a natural athlete. The reason for this comment was that many of the top performers in the weight events were involved in steroids.

I did not see it, at that point in time, in the 1960's, as touching intercollegiate football. After leaving the University of Rhode Island in 1969, and going into high school coaching, steroid use was not a problem. At that point in time, it was a drug-centered culture, and there were other things that concerned me as a coach. The other drugs concerned me, and I think they were prevalent with other athletes, and society in general. At Idaho State University, in another part of the country, I began to see the difference between the Big Sky and the Yankee Conference. There were awfully big and strong people out there. About a year into my stay there, I did find out that it was not only at our institution, but at other schools in the conference.

There was a physician in town who felt he was providing a service to the football players, by prescribing and procuring Dianabol. This was a relatively common place for the muscle positions. The linemen. The line-backers. We started to put

our minds together, and tried to figure out what we were dealing with, and what kind of problem it is. Here we are, in this day and age, still with conflicting opinions. I have spent a lot of time with some of the other physicians in the area, and with our trainer, and spent time talking with our athletes. An athlete taking steroids stated, "All I am doing is taking a prescribed dosage of this particular drug that is available to me". I do not think we termed it a drug at that point in time. As we kicked that problem around, we felt it was wrong, and that there were some ethical implications. I cannot tell you that my judgment was perfectly formed at that time, and that I was a crusader to stamp out steroid use. There was an awareness. There were discussions from our training staff and others. We talked to the physician who was involved, and, basically, put him out of touch, or out of this particular business. As we discovered, just closing off one particular source was not the answer, because another source could be found somehow, or somewhere. That was the my first realization of its prevalence in competitive college football. I am sure it was prevalent. It was not just where we were. When we went to the other little towns in the Big Sky, there were strong people there as well. In the mid 1970's when I came back to the University of Rhode Island, there were also people of the same inclination in Kingston, Rhode Island, that thought, "here was an opportunity". These people are goal-oriented individuals. The type who get involved with anabolic steroids, do so either for vanity or for athletic purposes. Goal-oriented individuals will work extremely hard, and will train extremely hard. Some effects are seen. We see what we perceive to be real facts. There are other young men who are not as strongly oriented towards weightlifting and strength development. I found, through the years, that they are usually not a problem. It is not all of our big linemen, per se, that are users, or inclined towards the use of anabolic steroids. It is probably those who work the hardest, who are most concerned about their bodies. These are the ones that I have found are probably most likely to fall into the trap. The competitors are the ones who work really hard to find an edge, and they are going to find it. They are going to seek it. I saw this coming in the early 1970's, when I came back to the University of Rhode Island. I think, in both situations, and indicative of our culture in general, there was more concern with the truly illegal drugs. When illegal drugs are referred to, I think about the street drugs that we deal with, because they were a problem at all institutions at that time. I perceived the greatest problem in our situation at the University of Rhode Island, was the desire of young men to have something to gain an edge as they went into a competitive situation, and their need to become involved in pills to help create that euphoria that was needed on a Saturday afternoon. It is hard to understand why the competition itself could not provide the excitement that was needed. I think that is what probably existed in the 1970's. As we got into the 1980's, I saw in our situation, and probably typical of others, was the use of steroids. I think they were rather common in big muscle positions, and now has gone beyond just the use of Dianabol. The sources were still the same. There were doctors, in most cases, that could be found by the athletes who would be able to get those drugs prescribed as they were needed. Young men, when confronted or spoken to, would say that it certainly was under a doctor's care.

What do you do with your son or daughter when they come home with drug problems. How do you treat them? Do you treat them with love and care? Do you treat them with enforcement? Do you treat them with testing? That is a problem that we all face, and will continue to face with this issue. I have seen, through the NCAA testing, and university wide testing in institutions, a marked decline over the

past few years, attributed to education to some degree, to the awareness of the coaches, and to the implied threat of testing. I do not think the threat of testing is ever going to dissuade every individual from becoming involved. What I have seen is probably an explosion off and outside the field of competitive athletics, as related to by my athletes and my own children. I have a couple of young men, 20 and 21 years old, that have just finished playing and have been involved in lifting. As mentioned so many times, the availability of these substances in and around our weightlifting gyms, and has reached down into our high schools and junior high schools. There it becomes even a greater threat than the one that exists in intercollegiate athletics.

As I see the problem now, it is a potential health hazard to the individual user. I think the medical profession, even though there are still some conflicting opinions, has documented to my satisfaction that they are certainly health hazards to the individual. There is an ethical problem in athletic competition, in that it does create an artificial aid to performance, and creates a need in others to compete with the user. Whether it is a domino effect, or whether it is a young linebacker who wants to make the high school team, or to go to the University of Rhode Island, or Brown University, or Boston College to compete, who feels he must get involved with steroids. It is not only in weightlifting that steroids are used. It is not rampant at this point in time, but that feeling exists and young men and women are swept up in the tide. Young men and women in competitive athletics are swept up because they are there, because of the substance abuse is there. I say it is an abuse. Others are drawn along into it in their desire to compete. It is an ethical problem that we all must face. There may be something said to the contrary that there seems to be certain definite advantages in strength and bulk gain. They do come. They do exist. The other problem is the method of use and distribution is clandestine. It is not under proper medical direction in most cases. I also worry, but have had no recent indications that there are physicians that are helping our athletes, or other athletes. I am not aware of any at this point. I was aware of it in Idaho , and here at the University of Rhode Island in the early 1980's. I knew there was a doctor, that there were doctors, who these young athletes could turn to. As far as the elimination or reduction in use, the NCAA Championship Testing Program has had some effect in reducing widespread use. Even with the implied threat of drug testing, there are still going to be those athletes who will use them. Institutional testing would further reduce the use, and also provide easy answers for each institution. I am not sure it is the right answer. I am not an advocate of institutional testing, but, if the problem is so great that we say that the problem must be eradicated, then institutional testing would certainly be a benefit in that regard. It would still not totally eliminate the problem, but will drastically eliminate use by competitive athletes in intercollegiate programs. That is a small part of the problem. If we wanted to center in on that group, institutional testing would be a very convenient way for a coach because he could then stand up and say his school was tested, and they do not have a problem. I am not sure that is the solution. It does provide an easy out for the institution, and for the coaches and administrators involved. I do feel we would have a problem with the invasion of athletes' rights. Their individual rights, and the freedoms that we have, in our society, that have been fought for. I personally, at this point in time, oppose outright institutional testing. I know there is conflict there in my view. I never had any problems with NCAA Championship Testing, yet, here I am, not advocating institutional testing. To me, educational awareness of potential health problems, are one of the things that help reduce steroid use. Education provides the best

method for the solution to the problem, although it will not have the impact of testing on the reduction of use.

Our free society does allow us the freedom to abuse ourselves, and to learn, sometimes painfully, through trial and error. Freedom is a precious right, and should thread upon infringements very lightly. The need to do so at times must be recognized to help combat a problem. These views are brought out at conferences such as this, and help us to look a little longer at the good and bad, the right and wrong, and then try to form opinions and policies that are going to help the greatest number of people. If our only objective in life was to have a drug free society, there are certain things we could do that would be found to be repulsive. Yet, I am not advocating the use of drugs. The limited testing program, and that is the NCAA Championships, state championships, and high school competitions, may be the answer because now you have reached a special level. Then, maybe, they would feel this is not an infringement on their total freedom, and that to compete in a championship event, we might consider the institution of drug testing to go hand in hand with our championship events. That may have an effect. A trickle down effect. Even those who are not competing in the state championship level, or at the state championship level, would understand that this is the way competition, at its highest level, is to be conducted in our state and in our area of sport. The best effort is the individual one-on-one relationship between coach and player, coupled with a constant stress on the well being of the athlete in a program. I have talked with our athletes after they finished playing, and know that many of the things we have done as coaches have been wrong. Although we say not to use steroids, we make other statements that, in a sense, have turned people towards them. We stress bench press. How much do you bench? Can you increase your benchpressing? We would like to see it made. We would like to see you back in August, and hope you will increase your bench 30 pounds. Then, the young man says to himself, "the coach really wants me to go and get involved with steroids". We are almost putting the needle or pill in their hand. That is what we are saying. Then, the next thing, always is that he weighs only 215 pounds and has to weigh 240 pounds in order to play. Here it is the month of May, and the young man says he wants to play college football more than anything in the world, and the coach says he gives it a shot. As it was mentioned in the literature of the study that was done, when Olympic athletes were talked with concerning winning a Gold Medal or winning the prize, and possibly dying in seven years, 90 percent will take a crack at it anyway. The young men we deal with are exactly the same, or similar, to the segment that was dealt with in that book. They are immortal at that point. They do not think of the risks. They think more of the rewards. We, as coaches, stress weight gain, and are creating an atmosphere that might lead to the use of anabolic steroids. Some of these things have been downplayed. What we have done, is to downplayed some of those things. We monitor the weight very closely. I have found myself, just over the past two or three years, whenever we see rapid weight gain in one of our people, is to bring in the guy and sit down and talk to him. I tell him that I cannot accuse him, and will not accuse him, but I do tell him that I see that there is something strange. That I have had him for four years, and have seen his pattern of weight growth and development, and that I am really concerned that he has put on 25 pounds in six weeks, and really question the wisdom of his getting into something that would do that to him. Something not natural through his diet and exercise. I think we have had some success with that. Sitting down face to face. I find it is a lot more successful than speaking through the team. We speak to our

team about the dangers and the abuse that has been prevalent for years. I know in fact, that this does have the desired effect. The one to one. Being conscious of the things you say, and what you ask for. In dealing with intercollegiate football, these are the things that help.

Problems exist in gyms, and outside of organized athletic programs. I think they may be greater and subject to greater abuse in these areas, due to the lack of a coach-player relationship. Again, it is the grapevine. The iron grapevine, and other things, that provide outside of the educational setting. All you have to do is just look at all the young people walking in and out of our gyms. It is not just in Rhode Island. It is in South Carolina and Florida. It is everywhere. You watch those people walking in and out of the gyms. Young kids 14, 15, and 16 years old. See where they are getting their guidance and direction. They are getting it through the grapevine, and through the trial and error method. I think that is the potential for problems of abuse right now. We have a great need for continued vigilance and improvement in dealing with our athletes inside the educational setting. This problem reaches down to the junior high schools, across all lines. Sex lines. Vanity has become a major factor in turning to these things. Sometimes these people are not competitive in any other way. Not even in body building. It is just the body beauty that drives them. Education, care, and concern for each individual is the key to our effort. To create the need of an awareness, and to help reduce the scope of the problem through conferences. This is a necessity in our educational programs.

Guest Speaker

DEREK SANDERSON

Derek "Turk" Sanderson's years as a professional hockey player began in 1967 with the Boston Bruins. His years of dedication and perseverence through the Juniors had finally paid off. After winning the coveted "Rookie of the Year" award at the close of the season, **Derek** went on to some of the Bruin's best years.

ON TOP OF THE WORLD

In both 1970 and 1972, the Boston Bruins brought home the Stanley cup. They were heroes — and love him or hate him, one of the most talked about players was Number 16, **Derek Sanderson**. Perceived as flashy, flamboyant and gregarious, he established himself as the "Joe Namath of hockey." He appeared on Johnny Carson's *Tonight, Donahue, 60 Minutes* and *Merv Griffin*. He was the host of his own television show, appeared in three Hollywood films, co-authored two books, and was voted one of America's ten sexiest men by *Cosmopolitan* magazine. **Derek Sanderson** was hot — and nothing could stop him now.

In 1973, **Derek** made history by signing a $2.65 million contract with the Philadelphia Blazers, members of the newly formed World Hockey Association. He thus became the world's highest paid athlete. But when he suffered an injury after playing only seven games with the Blazers, he started a roller coaster ride of trades, retirement and comback attempts. It was during his tenure with the New York Rangers that **Derek**'s problem with alcohol became apparent, although he would continue to deny it for another three years.

THE PRICE OF SUCCESS

The WHA contract settlement had left **Derek Sanderson** a rich man — and he spent freely on himself and others. Cocaine, alcohol and quaaludes were constant companions, and remained so until 1978. His first attempt to dry out brought him another season in hockey, but failed because he thought he would be able to drink socially. When Pittsburgh chose not to renew his contract, **Derek** once again fell into the trap of drugs and alcohol. In the two years that followed, **Derek Sanderson** fell into the depths, even to the point of sleeping in Central Park with other alcoholics.

BACK AT THE TOP, AND BETTER THAN EVER

Finally, in 1980, **Derek** made an independent assessment of his life. He made the hardest decision he ever had — and he chose to live. And as Tom Brokaw pointed out, he was the only athlete to do it all on his own, without first being arrested, investigated or getting a lot of press. Without outside assistance, **Derek**'s victory was that much sweeter. Now working with young people as a counselor, **Derek Sanderson** has a powerful message.

DEREK SANDERSON
Former Boston Bruins Hockey Player

Derek Sanderson was a leading and flamboyant hockey player of the Boston Bruins, a winner of the Stanley Cup, who went on to play with other hockey teams, including the Philadelphia Blazers. During that period of time, Mr. Sanderson ran into problems with substance abuse. Today, he does a good part of his livelihood working with youth groups, and educating young people about the dangers of alcohol and drugs.

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It is my pleasure to be here. When I speak, I speak off the cuff, and do not have anything prepared. What I say is genuinely from the heart.

There are those of you who have heard a lot about me. For those who have not, my life was pretty basic and normal up until I turned 12 years old. My dedication, my love for sport hockey, was all done clean, pure, and straight. I just worked hard. I never had that much talent, so I worked extra hard after practice. That set the credentials in place. There was dedication there. Intensity. There was something I believed in. The work ethic. I turned professional in 1967, and was fortunate enough to win Rookie of the Year. I remember the following year. I was starting to get a little attention, a little glamour, a little glory. I was not too well prepared to handle that, so, I had a few beers here and there. Looking back on my life now, two beers basically did it. I was a buck fifty drunk. I had a couple of beers, and was fine. All it did was suppress the anxiety, and numb the emotions. That worked for a while. A couple of years later, I got into the bar business and decided to stay and play. I never really blacked out. I never saw that, when alcohol was in place, it damaged me as a professional athlete. I noticed that around me everybody in professional sports drank, and drank in excess. I think there is a myth that has to be dispelled right now for our children, which is that athletics and beer go hand in hand. Celebrations with champagne and victories go hand in hand. It is something that the media is responsible for, as far as marketing it, and glamorizing alcohol. As far as myself, billboards started me on Tequila. A gorgeous girl laying on the beach. I ordered the Tequila, but no one came with it. These things take place. It is really not noticed, but it is the American way of life. Our kids right now, are in serious jeopardy of succumbing to it. So, in 1970, the steroids were started. I had colitis. I was a hypernervous kid, who ended up as a bachelor and a terrible cook, with poor eating habits. The doctors told me it was my way of life, which led me to fall prey to colitis. I remember that February. I felt very ill. The Bruins wanted me for the Stanley Cup Playoffs, and this wonder drug, Prednisone, was on the market. The FDA had not passed the test of time, and the testing up to that point was pretty well limited to the four years it had been around. They said that it would, eventually, give my strength back, that it would make me strong again, and that my immune system would be able to fight. I agreed, and remember the massive doses of the drug. Injections. Pills. Cortenemas for home. It cleared up, and we won the Stanley Cup. I look back and say they were exciting times, but there were highs I never had in my life. I thought it was the excitement of the Stanley Cup. I could

never, ever, figure out why I was so excited about the Stanley Cup, and then so depressed. Two years later, it was the same situation. Prednisone was given again for a second attack of colitis. I was hospitalized, and the emotional swings again took place. The doctors never told me that the first contraindication was a wide swing and range of emotions. I was led to believe that it was the normal way for my emotions. Think about a blackout. There are not too many people who are going to remember a blackout. That is what it is. So, I really did not have to question my behavior until I became well entrenched in alcoholism. That was something that I tried to balance my moods with. My AA counselor said not to look for excuses, that I was drunk, and to go with it. When you are sober for seven years, the chances are that there some underlying factors. The mood swings were awesome. From euphoria to despair inside one half hour. At the time, I did not know it had to do with steroids., I did not really know what was taking place in my system. I did not know the hormonal structure, or the mechanics of it. The doctors never explained it to me.

I was traded to the New York Rangers, where I was also treated when I got colitis a third time. I was asked how I was treated when with Boston, and when I told them Prednisone, they raised their eyebrows, looked around the room, and said "Oh-Oh". By this time, I was looking at 1974-1975. Five years after its original onset. While in Boston, I got a mysterious hip ailment, which caused the trade. I did not know then that, possibly, it was the beginning stages of a vascular narcosis. I did not know, and they did not tell me. They may not have known. I ended up in New York, and being treated with Prednisone. I had a pretty good year. Emotional years. Serious peaks and valleys. By this time, I was thinking that my better world was being monitored through chemical philosophy. I started to flirt with cocaine to rationalize and justify it. I was getting sick on the alcohol itself. The consumption was enormous, so I was starting to get sick. I used drugs with the hope of calming this down. The mood swings were still very prevalent. The New York Rangers saw problems coming, whether it was from alcohol, or personality conflict from the emotional moods. They decided to move me on, and traded me to St. Louis as a first round pick of the Bruins. "Let's get something from Sanderson while we can. His hips are going, let's get rid of him now."

Neil Francis was fired in New York, and hired by St. Louis. He knew I had the problem. He exited me to Vancover. Multiple personalities. Mood swings. Fights. People tell me the things I did, whether it was alcohol abuse, drugs, or the steroids themselves. I know they existed. I know they took place. They happened. I ended up sleeping under bridges in Central Park. I had no idea how I got there. I remember looking up at my apartment in 1977. I used to pay $2,400 a month for this apartment, and there I was sleeping under the bridge. I had to fight for this spot under the bridge. You have to get there early.

After many years of struggling, the mood swings stopped. Once I got sober, they stopped. I went in to see the doctor about the pain in my hip, and told him I thought it was arthritis. The doctor told me it was not arthritis, but that I had vascular narcosis, and asked if I ever took Prednisone. He told me I had a great lawsuit, although he said it a little prematurely because he did not back me up on it. What had taken place, was caused by Prednisone use. He asked if my doctors had ever told me of the contraindications of the drug. They never did. Management really was not too well informed. They only knew that it worked, that it got me heal-

thy, and I was able to play again. Too often that takes place. Coaches and team doctors, allow the athlete to take that drug for that special occasion. That drug, being put in place by a respected man of the medical professional, subconsciously becomes the coping mechanism for the next time the athlete is a little sore or a little bit injured, or a little bit light, or a little bit sick. If you cannot play because of illness, injury or size, they will take anything to enhance performance. If it is performance enhancing. I do not believe it is, and is a mistake. God meant the athlete to play straight and to play clean, and dedication becomes a part of it. Sacrifice becomes a part of it. His way of life becomes a part of how he plays. Kids today at thinking it is a better world through chemicals, and that they could do coke and play better. Now, basketball players are dying on the floor. The University of Texas at El Paso can substantiate this. The irresponsible behavior of this moron at the University of Maryland who said cocaine for performance enhancing is good on certain occasions, is something that cries out for recognition. People like that who are running programs at universities, are seriously jeopardizing the youth of tomorrow. I know from speaking for four years to kids in the schools. We repeatedly spoke about it at length, that the fiber of this country is being destroyed because of chemicals. Steroids not standing alone, and not being the number one, but they are there. Straight, clean kids say it is alright to take steroids. They do not know that they are not supposed to be bulked up that big. What happens 20 years from now to these kids who are given steroids? What happens when the child ends up 6'4", 275 pounds, and his football career is over in a year and one half. No one is going to see him as a bartender weighing 320 or 330 pounds, and sick. Nobody will care. Responsible behavior from you people in this room, is what is essential.

I know steroids caused what happened to me, and the mood swings, coupled with alcohol and drug abuse. Because of my own ignorance, that is how I coped with it. That is what has to be changed. It has to be changed here, with the educated people of this country. Those who can control it, not morons like me who will always use it. But, if they cannot get it because of responsible dispensing of the drug, then we would not know what we were missing. There are too many drugs in the schools, both licit and illicit. They are out there. A prescription to the parent. Not enough care is taken to tell the parent to keep the medication away from the children 14, 15, or 16 years old. There wasn't a person whose house that I went into for either lunch or dinner where I would not excuse myself to go to the bathroom. I would go into the medicine cabinet, and I would take half their Percodan. The pills were there. It is the American way of life. There has to be some kind of responsible notation to the dispensing of drugs. It is not for the consumer, who is just the fool taking them. We respect you people. We want you people to protect us. We do not know any better. The prescription problem in this country is a mess. You have a doctor and go to his office, and say you do not know what the problem is. He says neither does he, but take these and you will feel better. You will feel better, but it is a short time kind of cure. If you are going to make the patient feel better and come up with the right solution, that is great. But, the lazy way in and the easy way out is ruining this country. I feel deeply about it. Maybe a little hokey, but it is happening. These kids get the stuff from their parents. That is when it starts. Brown & Ferris Industries sponsors me in this alcohol and drug program in the schools that I go to. What the kids are asking me is "why are there so many drugs out there?" I am talking about 6th and 7th grades. The logic of a child is what stunned me when I first went into the 5th, 6th and 7th grades. "Why do you people make all these drugs if they are not good?" They have a point. I do not have an

answer for them. I do not know. Doctors prescribe them, but then this guy knows some doctors or pharmacists who are selling them out the back door for money or favors. They are human. It is the kids who are the ones who worry me. They get older, and it is the feelings and emotions. The biggest thing that I could not deal with was my feelings. If it was something physical, then I could fight it. I just fought it. It was my emotions that I was afraid of. The kids are the same. They are fearful of their feelings. They do not know what they are. They have all the feelings of an adult, but they just do not know what they are. When they come, and they are hyper, or are upset, or they are not sleeping, or not eating, I bet it is their feelings that are being treated with the drug. As long as the coping mechanism of the drug is in place, they will like them. I know you are not responsible for cocaine in this country. Cocaine is not the gross national product of Columbia because nobody likes it. Drugs work. Drugs make you feel better for the short term. Kids are defenseless without you. If an honest doctor got hold of me earlier, and told me what this drug would have done, I would have to be honest with you, my ego probably would have said to take the drug anyway. For the short term. There is no denying that. You have to be stronger than the athlete you are dealing with. You have to tell the athlete that it is not good for him. Short term, or long term. It is not beneficial. Impress it upon him. Not a casual response. Impress it upon.

Any questions?

DO YOU FEEL THAT YOUR SKATING ON THE ICE WAS MORE AGGRESSIVE BECAUSE OF YOUR PREDNISONE USE?

As I look back on it, I would have to say "yes". What happened was, there was a transition in my attitude that took place that I could definitely put on that time period. I would be extremely aggressive or violent, or eager to play on one night, and on another night, be full of fear because I had started this the night before, and now the repercussions are to be paid in another team's building. I asked myself, "Why did I do that? Why did I have to be so dirty? I didn't mean to be so violent. Now I'm going to have to pay the price.". That took place in the off season as well. In night clubs. In traffic. I know where people jumped out of their car, and pounded this poor guy for nothing. Just because he did not go through the amber light. I remember one time, I had a gun and carried it, and a guy cut me off from traffic to get onto the expressway. He went off. I followed him for two miles, jumped out, stuck the gun in his mouth, and said, "Now, give me the finger!" That was my normal behavior, and I was dead sober. I wasn't even drinking. It was just something that took place. The mood swings is an absolute fact.

DID YOU REALIZE THIS BEFORE? DID YOU KNOW IT WAS THE PREDNISONE?

No, I had no idea.

HOW LONG OF A PERIOD OF TIME ARE YOU TALKING ABOUT REGARDING PREDNISONE AND THEN BEING DIAGNOSED WITH VASCULAR NARCOSIS?

The time period for the first time in 1970 was probably a hospital stay of 3 1/2 weeks. Eight weeks continued at ten a day, down to eight a day, then four a day, then four every other day, until they were dispensed. Then the Cortenemas stayed for twelve weeks. That was that year. We never followed up. Once they got me off, I was fine. Then, two years later, in 1972, there was a pretty similar stay in the hospital, with a little over four weeks of bedrest. Then, that broke down the same way when I got home, and taken over the summer. So, those two years, and the stay in Lenox Hill in New York was probably five days. Not nearly as much given. There was a serious stay in St. Louis, but never resisted taken after the doctor weaned me off. Then in Los Angeles when the hip would not bear weight. I went to warm up and could not skate. The doctor of the Los Angeles Kings gave me an injection directly of cortisone into the groin. Trying to find a tender spot to give that. I do not know why he did that. That was the only injection I received after the first time. It was over a period of six years.

DO YOU HAVE ANY IDEA OF THE PREVALENCE OF STEROID USE IN THE PROFESSIONAL SPORTS?

A kind of guess, and it would be a guess, in hockey it is minimal. In football it is blatant. I am talking anabolic. We are talking bulk. Serious size. In college it is probably pretty serious. I know in some schools I have gone to, I have talked with the hockey team, and there were only one or two isolated kids who would admit to it. I said they did not have to worry about me, that I was not going to report on them. I just tried to warn them about it. They know that. It is all confidential. It is a unique position I am in. Maybe eight of the high school kids will be flirting with it. They get them from the older guys.

WE ARE TALKING ABOUT TWO DIFFERENT KINDS OF STEROIDS. TWO QUESTIONS. DO YOU HAVE ANY EXPERIENCE WITH ANABOLIC STEROIDS, THE KIND WE ARE MOSTLY TALKING ABOUT HERE FOR BODY BUILDING?

THE OTHER QUESTION IS, AND I DO NOT KNOW IF YOU CARE TO TELL ME OR NOT, WHAT TYPE OF COLITIS DID YOU HAVE? PREDNISONE IS A RECOGNIZED TREATMENT FOR CERTAIN TYPES, FOR EXAMPLE, ULCERATED.

The anabolic steroids I have never played with. My colitis was ulcerated and chronic.

I WOULD HAVE TO SAY THAT IT IS UNFORTUNATE THAT THIS HAPPENED TO YOU. THERE ARE A LOT OF PEOPLE WHO HAVE ULCERATED COLITIS WHO ARE TREATED ORDINARILY WITH PREDNISONE.

I will tell you this, it does work wonders. It worked. It cleared it up. I haven't had a colitis attack in two or three years. So, it works for colitis. I think the last time I had been sober for four years, and then took the Prednisone. I got puffy, and had the mood swings. Mood swings were not exaggerated.

WHEN DID YOU HIT BOTTOM?

I hit a few. I really hit some bottoms. Each one being a little further down than the one I thought was the original bottom. I went to thirteen detoxs. It was something I was going to go into. A detox. I would say that the combination of all that stuff was bad. No one ever told me about AA, or that there were hospitals that would teach you about medication, and not to do the combination of all those things that are toxic. "I am just going to drink beer." Then, I would go out and blow another detox. Then, I would come out, and say I will have just wine with meals. Blew another detox. Every detox it got worst. I sold a horse ranch, a $400,000 or $500,000 horse ranch, for a little over $150,000 at the airport in Chicago. The last of the money I had, which would be 1978, went very quickly. I was suicidal. I ended up at the Boston Common, and nobody knew about it. I ended up in New York, not only in Central Park under bridges, but ended up like any other addict. You steal or deal. It just got worse, and worse. It was a matter of dying, before I got straightened out. That was how bad off I was. If it wasn't for the Grace of God, I would be dead.

ARE YOU IN AA NOW?

Yes.

DO YOU THINK THAT WAS AN IMPORTANT FACTOR PROCESS IN YOUR RECOVERY?

I feel it is absolutely essential for recovery. I counsel with the Employee Assistance Program. I haven't seen anyone get it yet without being a three-fold disease. Mental, physical, and spiritual. Without the preaching concept of AA, and the higher power, I do not think I would have been able to get sober, and stay sober without it.

HOW OFTEN DO YOU GO TO MEETINGS?

I lecture all the time. I do not basically go to any specific group. I had problems with groups, and signing autographs in my sobriety. Anonymity, of course, I do not keep it. There is one group that I like, and try to get in at least once a week. It has been seven years, and I still feel I need it once a week. There is a rap session that goes on in the City of Boston on Tuesdays. So, that would give me two. But, to belong to a group, I am just close to my sponsor. He works with me. I kind of solved that problem of going to meetings all the time.

HOW DID YOU MANAGE TO MAKE SUCH A DRAMATIC CHANGE IN YOUR LIFE BY YOURSELF? WHAT INSPIRED YOU TO DO THIS? TO MAKE A BIG TURNING POINT IN YOUR LIFE.

Nobody does it alone. It was the Grace of God. I got down on my knees one day in the detox. The guy told me to get down on my knees, and ask God for help. He told me, "You're an ego maniac. You think you can control your life, and you can't. You obviously made a mess of it." He told me to ask Christ for help and see what comes of it. I humbled myself for the first time in my life, and it worked. It didn't work very long because I got down and said, "Okay God, I'll take it from here.

I've got it now. Whenever I am in trouble, I'll pray. I've got it now. Whew!" So, another detox. That is what got me. With the Grace of God, it puts people in the right place at the right time. A lot of help. In 1982, there was a family in Revere who took me in, and I lived there in the family concept all over again. They had children all the way up. A big, Italian family. I had to start with the basics. I had to go back, at 34 or 35 years of age, and deal with emotions I never dealt with when I was twelve or fourteen. I used to just bluff everything, brag, and never let my parents know that I was that shy or insecure, and I wanted them to think I was cool. I figured fear made you a wimp. I projected to my father that I was afraid of nothing. I was afraid of no physical fear. I was afraid of emotional fear. Fear of rejection or embarrassment. Things like that scare me to death. When I got on my knees and asked God for help, I said, "What do I do?" I talked to light bulbs at first, and ceilings. I didn't know what I was doing. It just comes. You start to believe there is something stronger than yourself. That you can go out, and you can speak. That God woke me up, and that God gave me my life back. I am not embarrassed to say that. A lot of people are. We are a Christian-Judelist society that is embarrassed to say we are. God can help you. God can help anybody if they would just ask. That is the biggest thing I see with the kids. They really have no concept of what God is. What faith is. It can move mountains. You just need a little bit of it.

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Four or five months ago, I received a letter from Charlie Hachadorian, requesting donations for a conference that he wanted to do pertaining to anabolic steroids. I thought this was fantastic. It strikes a personal note because I was a competition powerlifter back in Haskell College, and had a lot of familiarity with anabolic steroids. I have close friends who took them on a regular basis, and have a very close friend who is no longer allowed because of the tremendous abuse of the drug.

One of the things it got me to think about the whole issue, was whether or not steroid abuse should be treated in the same sense as alcohol and drug addiction. I know there are some agency executive directors, and I know there are pharmacists and physicians out there who feel this way. I do know it is not a very common question asked when a client walks in the door, "Are you on anabolic steroids?" It might cross your mind when somebody comes in weighing 240 pounds, who is 17 years old, and had a weight gain of 60 pounds over the past year. I pose that question to the pharmacists and treatment people who are here. I think it is something that needs to be looked at, talked about, and then work on developing it into our repertoire of treatment in our agencies across the country.

I can recall in 1963 and 1964, anabolic steroids were clearly being used, and not used by ordinary body builders or weightlifters. They were used by the premiere weightlifters. The group of people I knew and lifted with in competition, had a combined list of 1300, 1400, 1500 and 1600 pounds in the benchpress and deadlift. I am talking about people who were benchpressing 350 to 425 pounds, which is something that the normal development of your body sometimes will allow you to do. A great many of these great lifts and feats were caused by anabolic steroids. I had a great number of close personal friends, whose body weight was 170 pounds, and a year and one-half later, after taking anabolic steroids, their body weight was 230 pounds. Their lifts in competition, of course, in those days there was no testing, was phenomenal in terms of increase. One of the things that we do if on the street today, in dealing with our kids, is the truth and honesty, and the belief in whether or not drugs of this type can be addictive. They are not physically addicted, in terms of having to meet withdrawal, but clearly there is a psycho-social dependence. The mood swings mentioned have been seen, and those individuals who have stopped taking them, very bizarre behavior has been seen. Panics. Suicidal gestures of premiere weightlifters. This conference has renewed my interest, and dedication to the different kind of addiction. A different kind of abuse.

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I am speaking to you as an endocrinologist. For example, someone who diagnoses and treats patients with hormonal disorders. Before directly discussing the effects of anabolic steroids, I shall first define what is meant by the term "steroid", and how the "anabolic" variety differs from other forms of these chemical substances.

There are six different types of natural steroids that normally occur in the body (Table 1). They are all synthesized from cholesterol. First, there are androgens of which the most important is testosterone (the major male sex hormone), produced in the body of both males and females - though women have much smaller quantities. It was in order to try and separate the sexual effects of testosterone from its muscle building or anabolic action, that various chemical modifications of testosterone were synthesized, called "anabolic steroids". Other types of steroids are estrogens and progesterone, the female sex hormones which are produced by the normal ovary, and adrenal steroids called cortisol and aldosterone. Cortisol is often used clinically for its anti-inflammatory effects. It causes loss of muscle tissue, an action which is termed catabolic. In this effect, it is the counterpoise of testosterone and the anabolic steroids in general. Finally, Vitamin D, which is synthesized in the skin, and is important in calcium metabolism, is also a steroid.

Accordingly, it is important to be very specific when talking about what type of steroid is being abused. As far as this particular conference is concerned, the focus is on anabolic steroids. The chemical structure of the natural steroid, testosterone, and that of two examples of synthetic anabolic steroids are shown in Figure 1. They are all very similar to one another. Thus, it is not too difficult to modify the testosterone molecule, and such chemical engineering gives rise to the anabolic steroids. The rationale for producing these substances was to obtain a material with an enhanced anabolic and diminishing androgenic action. The expectation (and unfortunately the belief of many who take such substances) is that the steroid will build up muscle without altering sexual function - a situation that cannot be achieved by testosterone. However, no such anabolic steroid exists, and all have a variable effect on sexual function.

There are two different types of anabolic steroids. Oral and parenteral, which needs to be given by intramuscular or subcutaneous injection. In order to be effective orally, a change needs to be made in the chemical structure of testosterone or its analogues (17 alpha alkyl substitution - Figure 1), in order to allow these steroids to be absorbed from the gastrointestinal tract. It is this chemical modification which causes the problems in liver function. The oral anabolic steroid absorbed from the gut passes through the liver and may give rise to adverse effects, which include cholestatic jaundice, peliosis hepatitis, and, rarely, liver cancer. The parenteral steroids do not normally give rise to any liver disturbance.

Currently, there are five medical indications for the administration of androgens or anabolic steroids (Table 2). The first occurs when a male is not producing the normal quantities of testosterone from the testis (a condition called hypogonadism). Testosterone is normally given in these circumstances. In some instances, if there is a late onset of puberty with growth delay, anabolic steroids might be given initially. Occasionally, if there is anemia from bone marrow failure, anabolic steroids are said to be sometimes effective. A rare condition called Hereditary Angioneurotic Edema, which has nothing to do with neurosis, but is some form of allergy, can be reversed by oral types of anabolic steroids. Occasionally, anabolic steroids are effective for breast cancer in women and possibly also for osteoporosis. These are the only conditions currently for which there is a medical indication for anabolic steroids.

When originally introduced, it was thought that anabolic steroids would be effective in situations such as starvation or after severe trauma where there was a loss of weight, or in cancer to help maintain weight. The evidence, almost overwhelmingly, suggests that any benefit is usually transient, that they do not work in these circumstances, and are not really helpful as an anabolic agent for people with normal gonad function.

Let us deal with the major controversy surrounding anabolic steroids. Do they work (Table 3)? It is clear that androgens, or anabolic steroids, increase muscle mass in hypogonadal subjects. If a male is not producing his own testosterone and androgens or anabolic steroids are given, muscle mass around the pectoral girdle increases. There is no dispute about this in the case of males who have an intrinsic absence of their own testosterone. The unresolved question is whether they also increase muscle mass in normal men or highly trained athletes. The bulk of evidence suggests that they are ineffective in normal men. There is a transient increase in weight in normal subjects, but most of that is thought to be due to salt and water retention. The highly trained athletes may be another issue. There is some controversy regarding its capacity to increase muscle mass, but the evidence suggests that it may be beneficial in high powered, international level athletes who are also taking high protein intakes and are subject to very extensive training. In that context, however, it is very difficult to dissociate the effect of the anabolic steroids from other associated factors in these subjects. In some of these individuals, anabolic steroids do appear to increase muscle strength and/or performance. However, there are a number of components that influence athletic performance. For example, there is evidence that anabolic steroids increase aggression, and this may be a factor in improving performance in certain athletic events. There is also evidence that fatigability, or the perception of fatigue, is diminished in people who are taking anabolic steroids. In terms of muscle power, that issue remains con-

troversial with the evidence leaning towards an enhancement in some highly trained athletes.

What about the risks of taking anabolic steroids (Table 4)? Androgen administration may lead to short statute in adolescents. If testosterone or anabolic steroids are given to junior high school or high school students, their height will be stunted due to their stimulating rapid bone maturation and closure of the epiphyses (growing ends of the bones). There is little controversy about that issue, since all anabolic steroids have androgenic effects, and to a greater or lesser extent they will all tend to mature the bone. Without doubt, if anabolic steroids are taken for a prolonged period of time, they will diminish the ultimate stature that the boy would have achieved. The administration of anabolic steroids to junior high school or high school students should be absolutely prescribed and not be used under any circumstances for the purposes of improving athletic performance. Liver disease as a complication applies by and large to the oral agents. As already mentioned, anabolic steroids given orally, may cause hepatitis, jaundice, and possibly give rise to liver cancer. If doses of anabolic steroids are taken ten to twenty times higher than what might be normally prescribed clinically, they can produce atrophy of the testes and also infertility. Is that effect permanent? The answer is not known for sure. Certainly that is a potential risk being taken from the administration of anabolic steroids. There is also evidence that there may be a risk of developing heart disease some time in the future. The circulating level of HDL cholesterol, the so-called "good" cholesterol, tends to go down in people taking anabolic steroids. Might that be a risk factor for heart disease? What will happen to someone in their 20's with four or five years of reduced HDL cholesterol? It really is not known whether these individuals will have an increased prevalence of coronary artery disease in their 50's. There is no hard information that can resolve such an issue at the present time. However, on the basis of our current knowledge, such an effect on the cholesterol must be viewed very seriously. Further, steroids have been reported to give rise to a diabetes-like condition (Table 5) in some individuals which also may be a risk factor for coronary artery disease.

Other effects include pustular acne from increased sebaceous gland activity, and a spontaneous rupture of tendons. Additionally, behavioral changes take place, so-called "Body Builders" Psychosis" or "Roid Rage". Finally, it should be remembered that if these materials are administered by injection with shared needles, there is a risk of hepatitis. There has been, in fact, one case of AIDS that has been traced to the sharing of needles in someone who was getting anabolic steroids by injection. All of these factors (Tables 4 and 5) need to be reviewed by any athlete contemplating taking anabolic steroids.

What about effects in women (Table 6)? It is probable that the administration of anabolic steroids to women will increase their muscle mass. If there is a woman who is a power athlete and wants to win an Olympic Gold Medal, anabolic steroids may enable her to do that. However, there is a price she will have to pay, as indeed there is a price to be paid in terms of side effects from taking any drug in excess. While anabolic steroids may enhance the increase in muscle mass from training, this may be associated with masculinization, facial hair, menstrual irregularities, and infertility. Some of these side effects may be permanent. It is not known how much or in whom, but there is an appreciable risk involved. A woman in the early stage of pregnancy who begins to use steroids could damage her fetus.

It should be emphasized that the individual who resorts to anabolic steroids will not easily escape notice. Drug detection is now very sophisticated (Table 7). Radioimmunoassay, gas chromatography, liquid chromatography, and combined gas chromatography/mass spectroscopy are used to detect anabolic steroids in body fluids. They can pick up very minute amounts of material. Indeed, anabolic steroids may be detectable in the urine for several months after the last dose.

There are three major reasons why athletes should not take anabolic steroids. First, anabolic steroids are prohibited from national and international competition, and if taken, will lead to disqualification. Thus, as far as the rules of competition are concerned, anabolic steroids are illegal. Second, there is the ethical issue. The use of anabolic steroids subverts the whole purpose of what sport is all about - that it should be a healthful endeavor. Finally, there are the medical aspects. Drugs should normally be taken only for the purpose of treating or preventing a medical problem. An athlete who is taking anabolic steroids to increase muscle mass and enhance performance, is potentially adversely undermining his health. These drugs should have no place in sports, even if they were totally free of side effects, which they are not. These are potentially serious side effects from their administration, and some may be permanent.

In conclusion, the evidence in favor of a benefit to muscle strength from anabolic steroids is borderline, while the side effects are potentially serious. Further, their use subverts the underlying purpose of what sport is and should be all about for young people. Both from an individual and societal standpoint, anabolic steroids are unwelcome intrusions into the world of sport.

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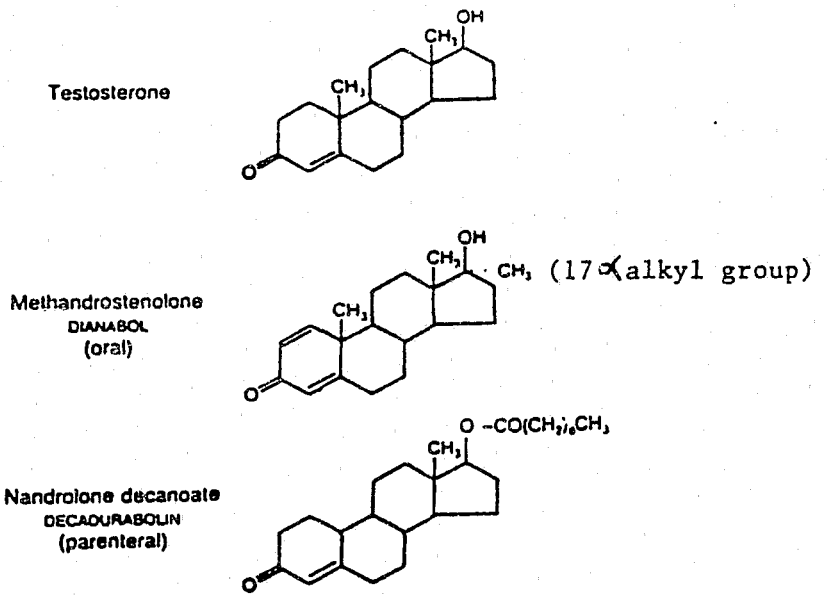

Figure 1. Synthetic anabolic-androgenic steroids are related in structure to testosterone. (*From* Strauss, R. H. (ed.): Sports Medicine. Philadelphia, W. B. Saunders, 1984.)

TABLE 1

NATURAL STEROIDS

GONADAL (Sex Steroids):

1. ANDROGENS (Testosterone) - ANABOLIC
2. ESTROGEN
3. PROGESTERONE

ADRENAL

4. CORTISOL - Catabolic
5. ALDOSTERONE

SKIN

6. VITAMIN D

ALL ARE DERIVED FROM CHOLESTEROL

TABLE 2

CLINICAL INDICATIONS FOR ANDROGENS OR ANABOLIC STEROIDS

1. MALE HYPOGONADISM
2. ANEMIA FROM BONE MARROW FAILURE
3. HEREDITARY ANGIONEUROTIC EDEMA
   (oral 17 alkyl androgens)
4. BREAST CANCER (androgen as anti-estrogen)
5. OSTEOPOROSIS

TABLE 3

CONTROVERSY

ANDROGENS/ANABOLIC STEROIDS INCREASE MUSCLE MASS IN HYPOGONADAL SUBJECTS.

DO THEY ALSO INCREASE MUSCLE MASS IN NORMAL MEN AND/OR HIGHLY TRAINED ATHLETES?

TABLE 4

SIDE EFFECTS OF ANABOLIC STEROIDS

1. SHORT STATURE IN ADOLESCENTS
2. LIVER DISEASE (oral agents)
   - Cholestasis
   - Jaundice
   - Peliosis hepatitis
   - Cancer
3. ATROPHIC TESTES AND INFERTILITY
4. RISK OF HEART DISEASE
   - Reduced HDL cholesterol
5. INCREASED SEBACEOUS GLAND SECRETION
   - Pustular acne

TABLE 5

OTHER PROBLEMS

1. IMPAIRED GLUCOSE TOLERANCE
   - Diabetogenic
2. SPONTANEOUS RUPTURE OF TENDONS
3. "BODY BUILDER'S PSYCHOSIS"
4. DISEASE TRANSMISSION BY SHARED NEEDLES
   - Hepatitis
   - AIDS

TABLE 6

EFFECTS OF ANABOLIC STEROIDS IN WOMEN

1. INCREASE MUSCLE MASS

2. MASCULINIZATION

   Acne

   Facial Hair

   Deep Voice

   Menstrual Irregularities

   Infertility

3. MASCULINIZATION OF FETUS

   If used in early pregnancy

TABLE 7

DRUG DETECTION

1. RADIOIMMUNOASSAY
2. GAS CHROMATOGRAPHY (GC)
3. LIQUID CHROMATOGRAPHY (LC)
4. COMBINED GC-MASS SPECTROSCOPY

ANABOLIC STEROIDS MAY BE DETECTABLE IN URINE FOR SEVERAL MONTHS AFTER THE LAST DOSE IS TAKEN

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Several years ago, when a police officer addressed a group of individuals in the medical profession, automatically a number of those individuals may have felt antagonized. Fortunately, this is no longer true. There are certain aspects concerning law enforcement and anabolic steroid use, which must be discussed. Most law enforcement cases involve drugs other than steroids, but, recently, cases involving steroid use have increased.

In an attempt to develop a steroid case involving a practitioner, undercover agents would be utilized to make the initial contact with the physician. This method was effective for a limited period, but it was found that many practitioners would converse routinely, and pass on information concerning law enforcement procedures. To cite an example, the division had received information concerning several physicians in Rhode Island who were prescribing steroids for use by athletes and weightlifters. In an attempt to develop a case, an undercover agent would approach the physician and specifically ask for steroids. As I mentioned, this was effective for a period of time, but the method of operation used by some physicians changed because they became aware of the increased law enforcement interest and methods used in investigations. What we recently have found is that physicians will offer to inject the steroids at his office, and not prescribe the drugs. When this occurs, it is almost impossible to develop a criminal case. The same problem was encountered several years ago while making undercover heroin purchases. Initially, an agent would infiltrate a certain area in an undercover capacity, and was successful in making a purchase and then leaving. Many drug dealers became aware of

what was taking place, and they insisted that the officer use the drug at the time of the purchase. The only purpose for this reasoning, was to ensure that the purchaser was not a police officer. If this occurred, and an excuse was not accepted by the drug dealer, then the possibility arose that the investigation must be terminated. The only alternative left for the undercover operative, was to visit a hospital and ask a doctor to make several needle marks on his arm, in an attempt to convince the drug dealer that he was using heroin. When a physician indicates that he is willing to administer steroids several times a week, most steroid users will accept the offer. When this happens to an undercover officer, the investigation must be redirected.

For years, intelligence information had been received from law enforcement agencies in Connecticut and Rhode Island, indicating that Zack's Gym in Hartford was a major distribution area for steroids. After several arrests by Connecticut authorities, this establishment was closed, and the problem in Rhode Island appeared to decline. At this point, some Rhode Island physicians became involved in the prescribing and administering of steroids.

Once again, intelligence indicates much of the material is originating in New York and Connecticut. Intelligence also indicates that there are only several individuals who control the steroid sales in Rhode Island. Some of them are not necessarily athletes, but they are associated with, or operate, gyms. It is very difficult to obtain information concerning these individuals, because of the tightly knit group surrounding them.

One Division of Drug Control case involved a professional wrestler. The investigation concerned Cocaine use and sale. His involvement with steroids was not known at the time. Several undercover purchases of Cocaine were made by undercover officers, and a search warrant was obtained for his residence. A large quantity of Cocaine was seized, along with boxes of steroids and hypodermic needles and syringes. We have found that many of the individuals who are involved with steroids, are also involved with other drugs; they are multi-drug users. In most cases, the secondary drug is Cocaine, but marijuana and other hallucinogenic drugs may be used. Several weightlifters have been arrested by the division, and, in all cases, Cocaine and steroids were seized. As you well know, multi-drug use can be very dangerous to the individual, and there should be concern by the medical profession as to what physical danger this presents to the individual.

Two years ago, Football Coach Robert Griffin of the University of Rhode Island, contacted me and asked if it would be possible to conduct a drug awareness program for his team. Coach Griffin and I never discussed steroids. He requested that I present an overview of what drugs were available on the street, how not to become involved, and what signs to look for if a fellow athlete was involved with any drug. The meeting was scheduled in August during the preseason practice session. At the time, the players were working out twice a day, and had team meetings from 7:30-9:00 p.m., at which time they concentrated on playbooks and films. Coach Griffin made the program mandatory for all players, but excluded the coaching staff. Before entering the meeting, I was advised by several assistant coaches that the players knew that I was a police officer, and not to expect a productive meeting. After the athletes realized that I was not going to handcuff and arrest them, the program proceeded at an interesting pace. The point which gathered their attention, was that I never told them not to use drugs. I explained what ramifications,

both legal and physical, might occur with prolonged drug use. The program was scheduled for one hour. It lasted two and one-half hours. We discussed various aspects of drug use, and steroids were mentioned a short time during the program, and dominated the rest of the evening. There was much discussion among team members concerning the pros and cons of steroid use, and their effects on other team members who did not use steroids.

Most athletes have the same goal. They work hard, they want to win, and they expect to win. The question is, "How are these goals achieved?" It is important to understand that not all athletes use steroids or other drugs. While speaking with the players, many made a valid point; to win a position, they must beat the guy across the line from them. How are they going to do that if the other guy is using steroids? They cannot compete with him physically, so they must resort to the same activity.

Surprisingly, many of the athletes never understood that there was an "afterlife" after athletics. They were concerned with immediate results. The regimen was building their bodies, and being able to compete in a superior manner. They were not concerned with what could happen to them physically several years in the future. The primary concern was being able to compete now, and adjust to whatever happens to them in the future. Some of the athletes admittedly never realized that after graduation, the only athletic activities they would be involved with would be through a recreational league. The primary concern would be to work and support a family.

The attitude of some athletes was, "We don't care about the long-range effect." The immediate benefit was of importance to them. One athlete put it bluntly. He said, " I look good, I feel good, and I don't see any physical problems." The reasoning being, you cannot see what is wrong, or what is happening inside the body, so you do not worry about it. As one athlete commented, "If there was a cast on my arm or leg, I could see the problem." Some team members expressed the opinion that drug use by a team member effected the rest of the team, because he could not function and carry out his assignments properly.

One of the Division's cases involved a 17 year old, who was a freshman in college. He was lifting weights and using steroids to prepare himself for body-building competition. When he was arrested for both steroid and Cocaine possession, his parents were notified since he was a juvenile. His father informed me that he knew his son was using oral steroids, but he did not know about the injectables. He further stated that his family doctor had warned his son the previous year about continuing steroid use, but, as long as it was oral use, he felt that it did not present as much danger. I do not fully understand the medical ramifications of using steroids, but, from what I have read, it is of little consequence whether they are used orally or are injected.

In addition to developing criminal cases, the Division will assist an individual who needs, and wants, help. What this means is that we have an obligation to the people of Rhode Island, and to the people of this country, to rid ourselves of the drug problem, whether it be steroids, Cocaine, or other dangerous drugs. We have to identify the problem, and work towards correcting it. In the Division of Drug Control, we have attempted to do this. We may not have all the means or answers, so,

therefore, we must cooperate with all professions, including medical and educational.

The fact that Coach Griffin realized that there may have been a potential problem, and sought to educate and prepare his athletes, much as he would prepare them for a game, is a credit to him and his coaching staff. Law enforcement is not going to correct the problem alone, nor is any other profession. The Coach Griffin example, is what can be accomplished when several professions work together toward a common goal. We must begin educating high school athletes about steroid and drug use, because we have seen these drugs at that level. There are athletes in high school who increase in weight and size during a short period of time. Many feel that they are encouraged to use steroids because they are told by coaches to "get stronger, or put on more weight during the off season", and the only way to accomplish this is by using steroids.

When you observe a person who has used steroids, the immediate reaction is that steroids do work. A physician with whom I have spoken with, informed me that, in most cases when steroids are prescribed for a patient, they do not work because of the small dosage prescribed. The massive doses and different steroids used by athletes, sometimes several at the same time, is what gives the athlete bulk and strength. Cosmetically, steroids work, but within the body, the steroids are doing damage which will not surface until later years.

Any information concerning illicit steroids, or any other drug activity, should be directed to a law enforcement agency. I would ask everyone to please assist us in trying to rid society of this problem before more younger persons get involved.

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Track and field is one of the sports that has received a great deal of notoriety as it relates to steroid use. We have all heard about the Eastern Block countries, and their steroid abuse among both the male and female athletes. The recent Pan Am Games also produced a lot of publicity, as athletes were charged with steroid use. Bill Greene, the U.S. hammer thrower, was stripped of his medals for alleged steroid use. I would assume that all this negative publicity for track and field, is one of the reasons why I was asked to sit on this panel.

This panel discussion is entitled, "Detection, Testing and Prevention". I firmly believe that our priorities should be on prevention before we look at testing or detection. The prevention of steroid abuse is far more valuable to our young athletes, than the detection of such use when the damage may have already been done.

Prevention might be equated with education. If we are able to educate our youth about the dangers of steroid abuse then, perhaps, we can short circuit the problem in its infancy. We have already heard about Peer Groups and other educational programs that have been set up in some school systems. These programs try to reach the same students repeatedly. As all the parents in this room would agree, in order to get your word across to kids, you must repeat the message time and time again. While the message that steroid abuse is harmful should not change, our youth must hear the same message from a variety of sources, including peers, parents, teachers, coaches, and celebrities.

Several years ago at the University of Rhode Island, we began discussion on how to approach the problem of steroid use by athletes. Testing programs were suggested. However, to implement a basic, marginal testing program would have cost an estimated $300,000 before we tested one athlete. Even though that kind of money was not available at that time, it was felt that such an expenditure was not cost effective. Our athletes represent a very small portion of our entire student body. The number of athletes using steroids is a very small portion of the total athlete population. Spending $300,000 to identify those few abusers would not have been a reasonable use of funds. Additionally, it was felt that a testing program would encounter a lot of debate on legal grounds. Indeed, since then, several court cases against drug testing by colleges have resulted in decisions reversing the testing programs.

The end result of all the discussions, was that the University would set up educational and informational programs about steroid use. The Vice President of Student Life, has implemented a drug education course that will be aimed at athletes, as well as the total student population. This is a one-credit course that will be offered for the first time in the Spring of 1988. While not yet mandatory for athletes, there is a lot of discussion about requiring athletes to attend the course. In addition to

the drug education course, the Athletic Department has offered at least three drug seminars for athletes during the Fall semester. Several coaches require mandatory attendance at these seminars.

As for the track team, I feel that the educational approach is the most effective way to attack the steroid problem. I strongly believe that communication is the foundation of any educational program. This is especially true with such a sensitive issue as drug abuse. I want the athletes to feel comfortable talking to me about any topic. I try to establish an open line of communication from the first day a high school recruit visits our campus. I am very open about my feelings towards steroids, and tell the high school recruit and his parents, that steroid use is prohibited on our team. One of the conditions to join our team is that each athlete signs a form that outlines his responsibilities to the team. One of those conditions is that the athlete will be steroid and drug-free. I am not naive enough to believe that this condition sheet will keep all our athletes drug free, but, I do believe it makes a firm statement of how I feel about the issue. If the athlete identifies with the team or with me, perhaps he will consider the negative consequences of steroid use, and decide not to begin using such drugs. Communication is the key to making this system work. I want to be involved with the athletes' discussions about drugs, whether it be marijuana, crack or steroids. Once a line of communication is established, there can be a "give and take" exchange that will hopefully lead to the athlete making intelligent decisions about drug use. I try to avoid the old "preaching" approach, or the "hard-line" approach, because those approaches simply do not work.

As I listened to the statistics about steroids earlier in the conference, I was shocked. It was stated that 70 percent of all the steroids produced, are being used for anabolic purposes in gyms. I had to ask myself, "How many of my athletes are involved with that statistic? Am I blind to the truth?" I started going through each name on my roster. In that entire roster of 50 athletes, I do not believe there are any athletes using steroids. There might be two athletes that I would strongly suspect, but, even those men probably are not using. I was encouraged when our Football Coach, Bob Griffin, stated that he has seen a decline in steroid use on his team. Bob has been at URI much longer than I have, and I feel he is in touch with the trends on our campus. If neither Coach Griffin nor I feel we have a serious problem with our squads, that means we might have a very serious problem in our non-collegiate athletic society. In the past, we have focused our attention on the collegiate and high school athletes. Perhaps, we now need to look at the local gyms. Earlier, we talked about how peer groups could exert a positive influence to prevent steroid abuse. The peer group can also work in the opposite direction to get kids involved in steroids. In the local gyms, there can be a lot of peer pressure to condone experimentation with drugs. There is no coach for the athlete to talk to about his dilemma. Consequently, the prevention of another statistic cannot be avoided, because we were unable to educate the athlete as to the options that are available to him.

We must understand that athletes are very competitive by nature, and that they are looking for every advantage that will help them reach their goals. They are prime targets for experimentation or taking chances to achieve their goals. Only through education and open discussion, is it possible to show this young person how to reach his goals without following the temptation of steroid use. This is where communication and the coach come in.

Communication and education are the ways to combat this steroid problem, as it relates to sports. Our total society has a problem with drugs that is beyond the scope of athletics. This much larger problem, must also be combated if we are to be successful in this battle against steroids in athletics. I do not believe that testing will deter the hard-core user. We must do a better job educating everyone about the dangers of steroid use.

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The Institute for International Sports is located at the University of Rhode Island, and exists for a number of reasons. One reason is to assist with the problem of drug abuse in sports. There are three components to this program, one of which, is a Masters Program whereby students come to the campus for a year, and are then sent overseas in a program called Sports Corps. These students go into impoverished communities overseas, where they work with handicapped athletes. Part of their Sports Corps training involves training and working with young people in those communities in the areas of drug and alcohol abuse. Another component of the Institute, and a very important component, is a seminar program. It is through this program that an attempt is made to address the problem of drug abuse in sports. The focal point, being an institute for sports, is strictly in sport area. Seminars are run on a variety of topics, one of which is drug abuse.

Last June, a seminar was held at the University of Rhode Island, and at which speakers from throughout the United States were in attendance. The seminar was entitled, "Drug Abuse in Sports - A Domestic and International Perspective". It drew quite a bit of national attention. Lefty Driesell was one of the speakers. In fairness, Lefty was misquoted. His quotes were picked up by most of the major news services throughout the country. We spent the week after the seminar defending Lefty, rather than planning the next seminar. The seminar, in a general sense, was quite successful. Successful to the extent that our next seminar on drug abuse will be held November 14th at the University of Rhode Island. An invitation to attend is extended to everyone here. The entire day is free of charge. The morning session involves drug abuse in sports. There will be six different speakers, three of whom will address young people, and three of whom will address adults. In the afternoon, for those who are football fans, includes free tickets to the UCON/URI game. The next step for the Institute for International Sports in regard to drug abuse, is to provide free counseling services to coaches and athletes throughout the East. This is a program that will be worked in conjunction with the Department of Physical Education and Recreation on campus, and there will be four to six people on our staff at the Department of Physical Education who, on a regular basis, and for no fee, will be available to any coach or any athlete who is in need of any type of counseling. Lastly, the Sports Corps Program does not only involve domestic students going overseas for a year. Some of you in this room will be familiar with names such as Pat Lynch from Brown University, and Karen Fararo, who is the Star Athlete of the Year. These are just two of our kids in the Sports Corps. Patrick is now in Belfast, Northern Ireland. The Sports Corps will also involve youngsters from other countries coming to the University of Rhode Island in this two-year Masters Program. Their Sports Corps year will be spent in this state. One of the areas they will work on as volunteers in the State of Rhode Island, is in the area of working with coaches and athletes. The Institute, among other various projects, tries to get

involved in areas in sports that need attention. Drug abuse at the forefront of that. It is our intent, and we hope it is our charge, to make an impact. Any of the programs that we run, are sponsored, and there is never a charge on our seminars.

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All so-called "anabolic" steroids are androgens, and most are similar in chemical structure to the endogenous (natural) androgenic hormone, testosterone (1,2). If testosterone is given orally, it is metabolized extensively by the liver (first pass effect). If it is injected, it is short-acting. Thus, the anabolic steroids are modified chemically to counteract these disadvantages: 17-a-alkylation, which retards hepatic metabolism and increases oral effectiveness; and 17 B esterification, which prolongs the duration of action. Unfortunately, the former modification also increases liver toxicity. Attempts to dissociate the androgenic from the anabolic effects, through structural modification, have not been successful. The "anabolic steroids" are, therefore, better termed "oral androgens".

Like testosterone, anabolic steroids act inside the cell on target organs (3). Either testosterone or its 5-a-reduced form (dihydrotestosterone) binds to a cytosolic receptor, forming a complex. The complex undergoes a "transformation" reaction that allows attachment to DNA. This interaction results in increased RNA and protein synthesis in the target cell. The actions of testosterone, and of the anabolic steroids, can be summarized as follows:

1. Regulation of gonadotropin secretion by the pituitary.

2. Sexual differentiation and maturation at puberty and spermatogenesis.

3. "Anabolic" effects: increased net protein synthesis, especially of skeletal muscle, resulting in reduced nitrogen excretion.

The "androgenic" and "anabolic" effects are the result of the same hormone acting on the same receptor in different tissues. Testosterone is metabolized in part to estradiol.

The therapeutic uses of anabolic steroids are somewhat limited and controversial (1-3). The clear indications are male hypogonadism (replacement therapy for a deficit of testosterone), aplastic anemia (androgens stimulate erythropoeitin production), and hereditary angioneurotic edema (androgens increase the synthesis of a deficient complement inhibitor). Other conditions for which oral androgens have been tried with limited success, include trauma or post-surgery recovery (to improve nitrogen balance), carcinoma of the breast (the "anti-estrogen" action is exploited here), and nonpituitary growth retardation (the oral androgens are only effective if given prior to epiphyseal closure).

The oral androgens are widely abused drugs (4). There is an alarming increase in their use by adult athletes as a growth or strength promoting agent. Androgens do not increase speed or endurance of athletes. They do, however, exert minor strength and mass-increasing effects in male body builders (5-7), and probably of female body builders as well. The effect of the steroids is probably no more than 10 percent over steroid-free controls undergoing similar training over the same time period, but the results of studies designed to test these changes are variable and inconclusive. In addition, use of the oral androgens is gaining prominence among adult female body builders. The oral androgens are also used increasingly by prepubescent female athletes, particularly gymnasts, as a growth-retarding agent; this is the so-called "braking" effect. The abuse of androgens is very dangerous for a variety of reasons (1,4,8).

1. Hepatotoxicity and liver cancer. - Both peliosis hepatitis (blood-filled cysts) and hepatic carcinoma (liver cancer) are more likely to occur with long-term use.

2. Virilization in women. - This is a serious and inevitable problem. It consists of lowered voice, increased facial and body hair, enlarged clitoris and pattern baldness (all of which are irreversible), and dysmenorrhea or amenorrhea, reduced breast size, increased libido and aggressiveness, acne, and reduced body fat (all of which are reversible with early discontinuation). A recent survey (9) suggested that a surprising number of women body builders were willing to accept many of these masculinizing effects, actually finding some of them to be desirable. The long-term risks of steroid use among women, other than those which are related to virilization, are less well characterized than they are for men.

3. Growth arrest in children. - The androgens can promote early epiphyseal closure.

4. Fluid retention and edema. - This may be a risk factor in hypertension, and accounts for much of the weight gain observed in athletes.

5. Feminization in men. - Prolonged use of high doses of oral androgens (more than 2 months) will reduce gonadotropin secretion and inhibit testicular steroidogenesis and spermatogenesis, perhaps leading to irreversible infertility. Gynecomastia (development of female-like breasts) can occur, especially in younger men. Part of these effects may be due to estrogenic metabolites of the oral androgens.

6. Production of adverse serum lipid profiles (10,11). Use of oral androgens for more than 2 months can reduce HDL cholesterol and increase LDL cholesterol, possibly increasing the risk of atherosclerosis and heart attack.

The danger of oral androgen misuse is particularly severe among athletes, who often take large doses in combination with a variety of other substances. The long-term effects of this practice are largely unknown.

In summary, the "anabolic steroids", or oral androgens, can increase strength in highly trained athletes to a moderate extent. This constitutes a misuse of these substances, which, even disregarding legal or ethical considerations, is not justified medically because of the minor benefits do not outweigh the significant risks of severe, irreversible, and even life-threatening adverse effects of these drugs (12).

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Just a few things I want to point out, in terms of toxicology, what we are seeing from a clinical point of view, why there is some confusion about why steroids still exist, and why scientists are not making a large-scale approach to quickly carry out the studies that really define the risk. A great problem that exists for us in clinical pharmacology, clinical toxicology and in drugs, is that the medical use, where all the data really comes from, the medical uses in standard medical toxicology, has little relevance to what goes on in the sports scene, and about the misuse of the anabolic steroid.

What I am really talking about is the matter of use and the dosage. Even though we would like to look at the data, and talk about the data, most of the data, except for a few studies done in Finland and other areas, rarely are related to what we have seen in the medical use. The use of anabolic steroids is 10-20 times the normal dose. As a pharmacologist, or if you are on any university, or on any review boards for human experimentation, there is no way on Earth that most universities or any other type of study, can justify giving a drug that we already know has certain adverse effects for long periods of time, say for a month or six weeks. Looking at that, at 20 times the standard dose, we have already ruled that could be a toxic type of situation. When you talk about changes, edema, heart failure, or whatever. With stacking you take multiple drugs, two or three different types of anabolic steroids, all taken together. I am not sure they accomplish a great deal with that. Nonetheless, using three different steroids, some oral, some injectable, they may go for a period of six weeks, or until the meat is coming up. What goes on in the sports scene is practically different than what goes on in medicine. What we have talked about is low dose adverse effects. Reality is that they are very high dose adverse effects. They are using steroids at a very early age, 10 or 11. They take testosterone injected. It is very hard to deal with that type of problem. It is something that people should become aware of. They certainly do not go and tell their parents. They may be handing out $30 every few weeks for the injection, but they surely do not tell their parents where that money is going.

The chances of having adverse effects is greater than what we are seeing in medicine, and you are not going to get an answer to that because of the data from initial experimentation or medical data. There is no way to ethically okay that type of experimentation. You are only going to get it by chance. That really is a hazard. All different kinds of problems will develop. Liver, hepatitis, peliosis, blood-filled cyst. I talk in terms of carcinoma of the liver. It is about 38 cases that I know of from the literature. It is not a big percentage, and if it is like anything else, if it is not 100 percent then you do not care about the rest of the numbers. The greatest problem is hepatitis, peliosis, or this blood-filled cyst. It replaced normal liver tissue. These disappear when the drug is started. In the meantime, there is a certain danger. There have been cases of hemorrhages that result because of the effects of this. We are not really getting across about masculinization in the females.

It is not desirable under those conditions. It is not reversible, and we are not getting that fact out. Taking estrogens will not prevent that from happening. We are not getting that out either. The same is true with testosterone in trying to reverse the gonad changes seen in the male. We do not get out that type of information. I have been trying to explain that for a long time. The bigger the muscles, the smaller the testicles. We are not really selling that, and that is what people are really interested in. The greatest concern to me down the line, and what we are seeing more and more of, is with cocaine. Cardiac arrest type of situations. How does cocaine fair on steroids. There is a reduction in the high density lipoproteins, and as far as we can tell, some real elevation with steroids, which is interfering in the action of the low density liquid proteins. Those changes really set you up for a heart attack. If it was five years ago, we would not have been thinking cocaine, but we would have talked steroids. You get into the steroid scene, and get into sports, and build your muscles, and depositing all these low density liquid proteins, and the you kind of set up for your MI. Then, get out there and do a little cocaine to add to that, and shut down the coronary set up you are in. The athlete that has been on steroids, unfortunately, gets into cocaine. He is more apt to have a sudden cardiac arrhythmia or a coronary at the age of 28, This has become more prevalent. The steroids in and of themselves, down the line, or maybe before the sports career is over, depending on what is being done, with the lipid deposits is a major issue, and probably, is rapidly increasing the problem. The only way I can really anticipate this change is across the board. It is a massive problem. Much of it is diversion. Very honestly, I guess some of the pharmacies are delivering as much of it as some of the clandestine coming in from other countries. With no serious penalty or classification.

What do you get for steroids? Six weeks in jail. There is no way you are going to get one year. There is no way you are going to have a severe penalty. If you are a competitor, or are in sports, much impression comes from the peer. Some parents live their lives watching their children in getting ahead, being muscular, weightlifting. They look the other way. Many of them have been in sports themselves, and have used steroids. They are not going to give them up until they are pretty much assured that the individual they are competing against, is not using steroids. That is only going to come about through increased education.

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I want to speak about my own philosophy on the experience as a practicing orthopedic surgeon, who has been in the same field for 11 years, and who has been a team physician at the University of Rhode Island. Based on my experience, and what I have read in the literature, the college athletes I have seen, high school and other athletes, adjoined with individuals with so called "sports injuries", and who had microscopic surgery, I have come to some conclusions.

First, steroids work. Absolutely, with no question, the people who take steroids look different, are stronger, and perform better in some strength activities. They may not be faster, and they may not be a better tailback, but, absolutely, they are better if they take steroids. Secondly, the steroids definitely have side effects. We do not know how bad they are, but they may be very bad. They may have very severe, long range, side effects. Thirdly, they are extremely widely used, in spite of everything that we have been doing. The fourth thing is that they should be stopped. I have my own ideas on how we can do that. People are using them because other people are using them. The competition. If we could get everybody to stop, then many people would be willing to stop if their competitors are not taking them.

Steroids work. In my experience, I have seen kids bulk up. There is no doubt about it that kids gain 30 or 40 pounds. How it works may be pharmacological, or from the androgenic effect. They may also work because of the aggressive behavior, and all incentives for people to exercise vigorously. They will not work for you and me because we do not exercise enough. Certain league athletes in any college, who are willing to put in the time, can definitely have an advantage over the guy who does not take steroids. We know about the cholesterol and the coronary artery disease, water retention, and liver abnormalities. First of all they are addicting because of the euphoric effect, the increase in muscle mass, the aggressive behavior. People like to take them. They feel good about the way they are. If they stop taking them, they get depressed, they lose some muscle mass, they lose their strength. There is a tremendous reason for them to keep taking them, so they are habituating. Sort of addictive. They really have an actual withdrawal, and they also have the change in moods, as mentioned by Derek Sanderson. Steroids should be considered a controlled substance, because they are addictive. Another thing, there is a direct correlation in the use of steroids and aggressive be-

havior. Fights in the fraternities. Severe outbursts. Psychotic behavior. Steroids push them right over the edge. Those violent episodes, those violent acts of rage, are related to the use of steroids. The use of steroids, whether you want to believe it or not, does lead to other drugs. Little drugs lead to big drugs. People who use anabolic steroids, have, in their mind, that their way of thinking, and their behavior, has changed because they have that mentality. They try some cocaine, and marijuana. They may try it because they have that mentality. They may try it because it eases some of their fears. Some of the side effects are lessened by the use of tranquilizers, pep pills, and other drugs.

Steroids are widely used. I do not know how widely used they are, but most body builders and weight lifters, who are any good, are using anabolic steroids. At the level of football that is played here, I have no idea who is using at the University of Rhode Island. We suspect most of the linemen have used them at least last summer and last spring. I have asked the guys what do they think. They told me about one third of the people at this level of college competition, within the past year, have used anabolic steroids for body building and performance enhancement. I am also led to believe that in the national level of the NFL, in most strength positions, almost everybody is using steroids. I think we should tell our kids not to speed every day. Maybe they will not speed. Maybe we should tell our athletes not to use steroids, and let others speak to them. You have to bring it out that there are side effects, and that they can have sudden deaths, and liver disease. No matter what we tell them, they are not going to stop using steroids, unless the other guy stops. In my own limited experience, the guys I have talked to who will go on to the pros, they think the 240 pound guy has to be 270 pounds, or he will not get a job. Many of these guys told me that they would not take them, except that they want to play pro ball. You have to take them, or they would not even look at you. There has to be more than education. Something has to be done to stop this. Steroids have to be stopped. They have to be banned. Why? Because it is exactly the opposite of what we are trying to do with athletics. It is unethical. It is an unfair advantage. You might as well give two boxers clubs, and let them beat themselves to death. It is an unfair advantage to the guys who are using them over the guys who are not using them. How are we going to stop the use? We certainly have to educate people. I think this is a great conference. I learned a few things, and reinforced some of the ideas that I had. You have to educate the kids. You certainly have to stop them from using steroids because they stop their growth. We have to help our college kids. You cannot just ban them because they are going to get steroids anyway. You have to try and educate. You have to try and get people to realize that they really are not as good as you think they are. They do bulk you up. They do help the linemen. They do not help speed, and they do not help the basketball players. I think you have to put some sort of ban on the use of drugs. I think they should be made a controlled substance. There are a couple of states who have regulated steroids. Texas has actually made anabolic steroids a controlled substance. A special prescription is needed to write it, and this is a way of tracking those who are writing the prescriptions. Most people are getting them from other sources. The only way you can stop the use of steroids, and I really think it will be a help, is from the top down. You cannot spend money at the high school and college levels. Even if we do, they are not going to listen. They are going to do whatever they can to get around it. If you start at the top down, you can start at the Olympics, like the NCAA is doing. If the people who make the playoffs are going to be used, and they are going to be found out, and not be able to compete in their

own colleges or schools. Somehow punished because of this. If they are going to be good, and are going to get to that level, and get tested there, at least that is a start. That is a deterrence. It all starts with the NFL. The guys who come out of college, and go to the NFL, take steroids in order to get on the team. If the National Football League, which does not have much credibility right now, will ban the use of steroids, it will trickle down to the colleges and high schools. It would be beneficial to every player in the NFL, if the guy on the other side of the line did not take steroids. I think that most guys, when they get to be 25 or 26 years of age, would prefer not to take what the other guy was taking, and if the people in college know that once they got to the pros, they would not be able to use them, then they would not use steroids in college. Think it can be done, but only at the professional level.

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Seemingly, everything that needed to be said today certainly has been said already, but, as an educator, I do not believe there is any such thing as redundancy. We call it meaningful overlap, or positive reinforcement.

The area that I have been asked to look at, is, basically, legislative relief, or administrative relief, for some of the very serious problems relative to the abuse of steroids in our society. To some extent this pre-supposes that I can look down the line into the future, and give some benefit of my experience as to where we should be going. I am not very good at predicting, prognosticators are in a very risky business. I think it was Enrico Fermi who said that "predictions are very difficult, especially about the future." I think that is where I am today. I would rather jump over and follow Shakespeare who said, "What is past is prologue." To help us deal with some of those issues, at least a possible route to follow, I have chosen to briefly review some of the past history, some of which, I am sure, will overlap with what Jack Crowley is going to be saying. I think what we should look at is where, as a country and as a society, we have been in the area of controlling drugs, and why.

Basically, we have been responsive. If I have had any criticism of our system at all, it is that we are rarely, perhaps never, proactive in the area of drug legislation. We usually, are reacting to a problem that exists, and we try to solve it through the back door. Since 1906, with the first Pure Food and Drug Act, we were responding to some problems that were carried over from our European markets with so-called "patent" drugs, and over-the-counter preparations that were dangerous. A decade later, the Harrison Narcotic Act was passed, really as an Internal Revenue type of legislation. The control of narcotic drugs was placed in the United States Treasury Department Bureau of Narcotics, Bureau of Narcotics, hence, the expression "narcs". The philosophy of the 1916 Congress was to use taxation as a means of controlling drug distribution. The classes A, B, M, X are no longer used, but by putting the same kind of seal that is on alcoholic spirits by a branch of the same Treasury Department Bureau of Narcotics, worked for a while. In 1938, the Food, Drug and Cosmetic Act was again expanded, in response to problems with sulfanilamide elixir. It was not until the 1960's that, somehow as a nation, we recognized something called a "drug problem".

In 1965, the Congress of the United States again responded by passing the Drug Abuse Control amendments. "DACA" was an amendment to the Food, Drug and Cosmetic Act, and it created a bureau within the Food and Drug Administration that was called "BDAC", the Bureau of Drug Abuse Control. At that time, Congress was looking at the abuse of central nervous system stimulants and depressants which were put into a new category. The new "BDAC" agents, counterparts of the Treasury Department Bureau of Narcotics, were gun-toting cops. Their activities were law enforcement oriented, and I think this showed a change in the philosophy of this country in trying to respond to so-called "drug problems". In 1968, President Johnson, by Executive Order, put the Bureau of Drug Abuse Control and the Treasury Department Bureau of Narcotics together, under what he deemed, and subsequently deemed by Congress, to be the right person, the right cabinet officer, the United States Attorney General, as the top cop of the land. We then had a Bureau of Narcotics and Dangerous Drugs, or "BNDD". Basically, that organization continued until passage of the 1970 Comprehensive Drug Abuse Prevention and Control Act. Contrary to what a lot of people think, this act contained a great deal of rehabilitation and import statutory controls, but also "controlled substances", "CSA", Title 2, Controlled Substances Act, within that statute, and which created what we now have as our control mechanism. Subsequently, some other organizations were formed. By 1973, the old "BNDD" was changed, and some other organizations were created by Executive Orders, subsequent to the federal statute, and were put together, to form which is now the Drug Enforcement Administration. It is this administration that has the broadest control and responsibility of the federal level.

We have gone from a taxation mechanism, to an enforcement, policing, mechanism. The 1970 act repealed the "DACA" amendments. It repealed the Harrison Narcotic Act, and it created some new process by which drugs were controlled called "scheduling". I am going to read some of the language in respect to scheduling, so that you will understand why I am going to make a recommendation of scheduling anabolic steroids. Several speakers have eluded to the psychological effect of steroids. In Schedule I, we are talking about substances with a high potential for abuse, and which have no accepted medical use in treatment in the United States or lacks accepted safety. In schedule II, the drug or substance has a high potential for abuse, and in terms of abuse, they are talking about psychological and physical dependence. The drug or substance does have an accepted medical use in treatment, and the abuse of the drug or substance may lead to severe psychic or physical dependence. Then, in Schedule III, the drug or substance has a potential for abuse less than the substances in schedules I and II. They do have an accepted medical use in treatment, and the abuse of the drug or substance, may lead to moderate or low physical dependence or high psychological dependence. In Schedule IV, the drug or substance has a low potential for abuse relative to the substances in Schedule III. The drug or substance has an accepted medical use in treatment, and the abuse of the substances may lead to limited physical dependence or psychological dependence relative to the controlled substances in Schedule III. In Schedule V, the drug or substance has a low potential for abuse relative to the substances in Schedule IV. They do have an accepted medical use in treatment, and the drug or substance has limited physical dependence or psychological dependence liability relative to the substances listed in Schedule IV. For those of you who are out of state, in Rhode Island our Schedule V, with only two exceptions, all are on prescriptions. For all intent and purposes, we have all of the categories

on prescription in the State of Rhode Island, except for one for which there is none. The obvious question that needs to be asked, is how the existence of this type of organizational scheme, impact on our current problem of steroids. My answer is that it does not. Anabolic steroids are legend drugs, according to the Federal Food, Drug and Cosmetic Act. That means they require a prescription, as well as comparable state statutes. Criminal and sanctions, intended for their misuse and distribution, pale as compared with those imposed on persons violating the provisions of the Controlled Substances Act and the federal law. There is relatively little in terms of punishment for those people, and, as Dr. O'Brien stated, people do not even end up in jail in the State of Connecticut. While no per se within the four corners of potential harm to the individuals described in Schedules I-V, there has been ample evidence today that the physical and psychological destruction of humans that has been described by prior speakers, is adequate testimony, in my opinion, to justify the United States Attorney and the Rhode Island Director of Health, and comparable officials authorized to schedule drugs in all jurisdictions, to recognize the extent of the danger to the public's health, safety and welfare, because of the indiscriminate use of anabolic steroids, and to proceed to add them to Schedule IV in all states. There is one potential group area that I would like to mention. I read an editorial in the June 1, 1987, edition of the JOURNAL OF THE AMERICAN VETERINARY ASSOCIATION. Several speakers eluded to the diversion of steroids that are used in the veterinary market. I want to read a portion of this editorial. This is written by veterinarians to veterinarians. "For a moment let us consider the hypothesis that one stringent regulation of veterinarians would protect the public from potentially dangerous residues." They are talking primarily about those in food animals. "A soon to be released study of veterinarians and livestock owners, with permission from the American Veterinary Association, shows that in 1985, over 90 percent of the animal drugs used in the United States were used without any veterinary involvement whatsoever." Over 90 percent of the animal drugs used in the United States were used without any veterinary involvement. That is an area that needs to be looked at. I do not have an answer about how to deal with that. It certainly is a continuing problem. Looking back at the scheduling, such a bold and necessary stop, would do two things. It would send a loud, clear, unequivocal message to enforcement personnel, as well as, to help professionals, that anabolic steroids do constitute a major problem, requiring a effort by all. That is, all constituencies represented here today, as well as those who are not, to at least mitigate, and eventually eliminate the problem. With no disrespect intended to anyone or any group, I want to point out something that I try to teach my students, and my pharmacists when I talk to them in continuing education. That is, that their role, in part, is to protect patients from physicians, and other health professionals, as well as from themselves. With respect to anabolic steroids use, there is a serious problem that we all need to work together to expand those services to protecting the patient from himself or herself, and from people outside of the health care community who are involved. Licensing boards in medicine, dentistry, pharmacy, nursing and others, should promulgate independent, as well as combined, positions relative to the use of anabolic steroids. For those of you who sit on those boards, I would raise the question about your being negligently malfeasant as board members, for taking the position of allowing some of these situations to continue, without taking action. State legislators should follow the lead of those jurisdictions which have scheduled anabolic steroids, as well as some who have taken other innovative measures.

We have already heard of a couple of states. Let me read from the Colorado statute and from Mexico. Colorado has amended its labeling law, and has modified its definition of unprofessional conduct. The definition of unprofessional conduct in the Medical Practices Act, has been amended to include, "dispensing, injecting, or prescribing an anabolic steroid for the purpose of hormonal regulation that is intended to increase muscle mass, strength or weight without a medical necessity to do so, or for the intended purpose of improving performance in any form of exercise, sport, or game, and dispensing or injecting an anabolic steroid unless such anabolic steroid is dispensed from a pharmacy pursuant to a written prescription, or is dispensed by any practitioner in the course of his professional practice." That is a very bold statement in Colorado. Mexico has passed a law providing that, "Except as authorized by the Mexico Drug and Cosmetic Act, it is unlawful for any person to intentionally possess or distribute anabolic steroids." The law requires that a copy of the statutory prohibition against possession or distribution of anabolic steroids be distributed to each licensed athletic trainer, and be prominently displayed in the athletic locker rooms of all state, post secondary, and public schools. That ties in with several of the recommendations that we heard today.

By no means am I wedded exclusively to the enforcement approach. Certainly, every educational program, including signs directed to potential users and users of anabolic steroids, as well as health care practitioners, should be continued and intensified. In fact, prosecutions and administrative dispositions of cases against violators, will have an educational effect as well. Stemming the rising of dangerous practices taken by so many Americans, especially young Americans, is essential. It requires multi-faceted efforts by individual practitioners, professional associations, teachers, coaches, regulators, legislators, professional sports management, the media, and the parents of young student athletes. The responsibility rests here as Povo observed when he said that "we have met our enemy, it is us." This is not the time for incrimination or finger pointing. Rather, it is the time to come together, to look back at the reforms that have worked, and look ahead to adapting to the steroid abuse. To paraphrase the Little Engine that could, "I know we can, I know we can, we shall!"

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One of the things Derek Sanderson mentioned was that the cocaine problem in Columbia was something we cannot control. Well over 50 percent of the chemicals used to process cocaine, come from the United States. We are trying to take steps in that regard. This is what the Controlled Substances Act is all about. The Controlled Substances Act of 1970, is a controlling type of situation. Substances are controlled in terms of manufacturing, purchasing and distributing, and so forth. There are four fundamental paris of the federal law, insofar as it governs control and enforcement. First, the mechanisms for reducing the availability of controlled substances. Second, the procedures for bringing a substance under control. Third, the criteria for determining control requirements. Fourth, the obligations incurred by international treaty arrangements. The question is, "Should we control anabolic steroids?" Testimony has been heard suggesting that, maybe, anabolic steroids should be controlled. There will be arguments on both sides. There are 16 anabolic steroids which are presently marketed in this country. There are 29 pharmaceutical manufacturers. There are 183 distributors, which are those companies who label and further distribute the steroids. What do we want to do with a situation like this? For instance, you have a pharmacy in Pennsylvania which buys 1,000 bottles of a certain steroid product from a distributor in Connecticut. Do we want to do anything about that? That, really, is what the question is.

The Controlled Substances Act replaced more than 50 pieces of legislation, from 1914-1970, and is really based on interstate commerce, which comes under the Justice Department. There are five federal schedules , but those were designed for the central nervous system drugs. Those drugs which are abused primarily for their psychoactive effects. There is a formal controlling/ scheduling procedure. Any person can petition to make a specific substance controlled under the Controlled Substances Act. It does not have to be the Drug Enforcement Administration. It does not have to be the Food and Drug Administration. It does not have to be a state organization. It could be one individual. A medical society. A pharmaceutical association. It could be a coaches association. There was quite a bit of discussion about sports, but athletes are not the only ones who use steroids. In the course of this scheduling procedure, there is a study period. Right now, there is a study

being conducted under the direction of the United States Attorney General, concerning whether or not anabolic steroids should be controlled. A lot of the input is coming from the Drug Enforcement Administration. We do know this is a complex problem, and that it is a real problem. It is a problem dealing with law enforcement, but, particularly, health issues. The public health type of issue. The problem is that the criteria for administratively controlling substances is poorly suited to the steroid drugs. Normally, what we are talking about are narcotics, barbiturates, stimulants, depressants, tranquilizers, and hallucinogenic substances. How would we put the steroids in here? Do we want to? Why would we want to control steroids? From what has been heard today, we would at least have control under such things as importation, manufacturing, distribution, and dispensing. At least, the people in those companies dealing with anabolic steroids, would have to maintain records open for inspection. There would be some type of audit trail. Some of the people in the Drug Enforcement Administration feel that Congress did not intend to encompass the steroids in the Controlled Substances Act. This problem is looked upon as being very complex, and currently under study. Four courses of action are seen.

First, we could look to the Food and Drug Administration, and the Food, Drug and Cosmetic Act. The FDA is really the appropriate agency to deal with anabolic steroids. There are a few problems here. My understanding is that its laws would have to be amended to clarify its authority and responsibility little deficient in that regard.

Secondly an alternative approach would be to enact specific criminal offenses for importation, manufacture and distribution of steroids for other than approved purposes. Such a statute, in Federal Criminal Law, would presumably be enforced by the FBI. The disadvantages are several, not the least of which is that such legislation would not provide any of the regulatory tools which seem to be needed.

Thirdly, is the option to amend the Controlled Substances Act, to provide for both criminal and regulatory controls. There is some feeling that such a course of action would significantly alter the mandate and purpose of the Drug Enforcement Administration, and, so, it does not appear that such a measure would be undertaken without a specific mandate from Congress.

The fourth and final option is for the state authority to draft, and vigorously support, the enactment of a model state act designed to deal with the problem of anabolic steroids, and, if I know Mr. Charles Hachadorian, that is exactly what he has in mind.

Time is very short, so in conclusion, this is recognized as a complex problem. There is a federal study currently underway at the direction of the Attorney General. In the meantime, it is up to all of us, individually and as organizations, to deal with the problem to the best of our ability.

ANABOLIC STEROIDS
USE AND ABUSE

Tuesday, 29 September 1987
Marriott Hotel
Providence, Rhode Island 02903

Number Registered	133
No Shows	-12
Number in Attendance	121

Pharmacists	57
Health Education/Coaches	38
Physicians	17
Law Enforcement	4
Counselors	3
Nurses	1
Recreational Personnel	1
	121

LECTURE DESCRIPTION AND RATING

70 SHEETS SUBMITTED

ENFORCEMENT OVERVIEW - State and Federal Perspectives

2.0 1
3.0 11
3.25 2
3.5 2
3.75 1
4.0 29
4.25 1
4.5 10
5.0 .....13 .....Average: 4.04

USE AND ABUSE OF DRUGS

1.0 1
2.0 2
2.5 1
3.0 4
3.5 7
4.0 22
4.25 3
4.5 9
5.0 .....20 .....Average: 4.13

DETECTION, PREVENTION, AND TESTING

2.0 3
2.5 1
3.0 12
3.5 4
4.0 25
4.2 51
4.5 9
5.0 .....13 .....Average: 3.94

HEALTH CONSIDERATIONS - Impact on Sports

2.0 1

2.5 2

3.0 8

3.5 5

4.0 23

4.5 9

5.0 . . . . . 14 . . . . . Average: 4.05

LEGAL ASPECTS OF STEROID USE - Developing Legislation

2.0 2

2.5 3

3.0 6

3.5 1

4.0 19

4.5 4

5.0 . . . . . 11 . . . . . Average: 3.96

Overall Average: 4.05