

Steroids From Mexico: Educating the Strength and Conditioning Community

CHRIS STREET¹ AND JOSE ANTONIO²

¹Talent Sports International Inc., Dallas, Texas 75205; ²University of Nebraska, Department of Health, Physical Education, Recreation, and Leisure Studies, Human Performance Laboratory, Kearney, Nebraska 68849.

ABSTRACT

The purpose of this investigation was to study the kinds of Mexican androgens being brought into the U.S. and to determine the prevalence of androgen self-administration among adult male and female private gymnasium users living in a U.S. city near the border with Mexico. The goal of this research brief is to educate strength and conditioning professionals and athlete-related health-care personnel to the Mexican steroids most likely used by athletes in the United States.

Key Words: anabolic steroids, drug abuse, strength training

Reference Data: Street, C., and J. Antonio. Steroids from Mexico: Educating the strength and conditioning community. *J. Strength Cond. Res.* 14(3):289–294. 2000.

Introduction

Self-administration of androgens for performance enhancement has been a common practice in strength athletes for decades. Despite this widespread practice, there is only a small amount of information in the scientific literature describing the procurement of these drugs. Contributing to this lack of information is the secrecy surrounding the purchase of androgens and the fact that patterns of administration and availability change from year to year depending on the androgens accessible on the black market. These factors make the subject difficult to study. From anecdotal reports and underground steroid reference books, it can be surmised that athletes in the United States are obtaining androgens from Mexico (5). According to Mexican law, these drugs are to be dispensed only to individuals with a prescription from a licensed medical practitioner. But from personal investigation, the authors have learned Mexican pharmacists sell drugs without a prescription, thus making steroids easily obtainable as over-the-counter purchases. Androgens are inexpensive and widely available south of the border. Steroid-using athletes and drug dealers can purchase

large quantities of androgens and easily transport the contraband across the border and into the United States. This investigation examined the practice.

This study describes androgen use among adult male and female health club participants in the border city of El Paso, TX; determines the extent of procurement of steroids from Mexico; assesses the commonly used steroid preparations, the duration of steroid use, and side effects experienced by steroid users; and reveals opinions about the medical community and lay press, and about the effectiveness of law enforcement and drug-education efforts on steroid use. Furthermore, this study serves to educate strength and conditioning professionals, who have frequent interaction with athletes who self-administer steroids. Strength and conditioning professionals may be able to educate and inform each athlete of the inherent risks associated with these drugs and hopefully, in the long term, dissuade experimentation or persuade androgen-using athletes to cease drug administration.

Methods

Design and Subjects

This investigation (approved by the University of Texas at El Paso Human Review Board) used a descriptive, survey design that provided information for a general description of androgen use by gym members in 3 El Paso, TX, health clubs.

Individuals who participated in the study came from the population of adult (>18 years of age) male and female private gymnasium users in the El Paso, TX, area. An 18-item questionnaire was used to gather data from 516 subjects. The instrument was designed to have simple questions (in English) using basic vocabulary. Pilot surveys were conducted and established that the instrument could be used with the intended population.

Setting

Gyms were selected on the basis of location and mean property values of the surrounding community (City of El Paso, Department of Planning, personal com-

munication). Gymnasium 1 is located on the west side of El Paso, which is classified as an upper-middle class to upper-class area. Gymnasium 2 is located on the east side of El Paso, and is considered to be in a primarily middle-class area. The third facility is located in the northeast section of the city and is patronized primarily by individuals from lower socioeconomic levels. The population of El Paso, TX, is 604,523 (Texas Department of Commerce), and consists of the following demographics: Hispanic, 69.02%; White, non-Hispanic 26.39%; African American 3.16%; Asian, 1.04%; Native American, non-Hispanic 0.27%; and other, 0.12% (United States census data 1990).

Data Collection

The instrument (questionnaire) was handed out to individuals upon entering each facility. Included with each questionnaire was a disclaimer, that explained informed consent, confidentiality, and anonymity for subjects. Each individual was instructed by the investigators to fill out the questionnaire in a private location, seal it in the envelope provided, and drop it in a tamper-proof container. The container was placed at the service desk of each gym and was easily accessible to the subjects. The survey contained 18 questions on legal-size paper, front to back. Data collection took place from 5:00 AM to 10:00 PM at each gymnasium (opening until closing). This time span was selected to ensure the study included a cross-section of the population using the gym, and also enabled the investigators to survey gym members during all times of the day. One investigator was on site at all times during the data collection procedures. The collection lasted 7 days at each facility.

Results

Five hundred sixteen surveys were distributed and completed by respondents (response rate = 100%). The subjects ranged in age from 18–87 years old. The mean age ($\pm SD$) for the group of steroid users was 30 ± 6.8 years while the non-steroid users averaged 34 years ± 10.8 . Seventy-one percent of the respondents were men ($N = 366$), and 29 percent were women ($N = 150$).

Incidence and Pattern of Steroid Use

Steroid use was present in approximately 11% of the population surveyed. The most popular drug used was Deca Durabolin (nandrolone decanoate). Testosterone esters were also prevalent among users, including the following drugs: Sostanon 250 (testosterone ester blend), Primoteston (testosterone enanthate), and Sten (testosterone ester blend). The most popular oral preparations were Primobolan (methenolone acetate) tablets and Stennox (fluoxymesterone) tablets. In addition to the pharmaceutical androgen preparations, similar veterinary compounds were also popular

among steroid users, including the drugs Laurabolin (nandrolone laurate) and Equipoise (boldenone undecylenate). Subjects reported using multiple drug combinations.

Most of the androgen users had only recently started using these drugs with a small minority having used androgens for several years. The length of the androgen user's drug cycle did not exceed 16 weeks with the majority of individuals completing 4–8 week cycles.

Opinion Questions

Steroid users were asked the following 3 opinion questions:

1. If you could legally obtain steroids from a doctor and have him/her monitor your response to the drugs would you still get drugs from Mexico and/or the black market?
2. Do you feel as though the medical community and the media have overplayed the dangers of anabolic steroid use?
3. In your opinion, have the strict laws on anabolic steroid use stopped you or other individuals from using these drugs?

In response to question number 1 regarding legally obtaining steroids from a doctor, 81% stated that they would not continue to get steroids from Mexico and/or the black market if they could obtain steroids legally from a medical practitioner. Nineteen percent said they would still obtain steroids from Mexico, and/or the black market even if they could get them from a doctor. In response to question number 2 concerning health warnings on steroid use, 79% of the steroid users reported the medical community and media have overplayed the dangers of androgen use. Only 21% of the respondents felt that the dangers of steroid use are accurately depicted. The third question involved the effectiveness of law enforcement on preventing steroid use. Seventy-six percent of the steroid users believed that the current laws on androgen use have not dissuaded them or other individuals from using these drugs.

Discussion

The most prevalent source of androgens for steroid users was pharmacies in Juarez, Mexico. This was expected because the drugs are easily obtained without a prescription in most Mexican pharmacies. This finding is in contrast to Frankle et al. (4) and Windsor and Dumitru (12) who found the majority of the users surveyed obtained steroids from the black market. Subjects in these studies (4, 12) were surveyed in large metropolitan cities with no direct access to Mexico. A possible reason for this discrepancy is the proximity of El Paso, TX, to Juarez, Mexico. It appears to be more

convenient for users in El Paso to obtain steroids from Juarez, rather than to deal with the uncertainty of the black market.

Steroid users also obtained drugs from veterinarians in Juarez, Mexico. The steroids available at veterinarian offices are inexpensive and available in bulk quantities. In addition, it is common for Mexican veterinarians to stock these drugs, whereas pharmacies often have limited quantities or do not sell androgens. Although Mexico is in close proximity to El Paso, TX, approximately one-third of the users obtained steroids from the American black market. A possible reason for this is the belief that American steroids are superior to the brands available in Mexico. Also, many androgen users believe using a variety of steroids will increase the degree of muscular gains achieved during a cycle; therefore, both Mexican and American steroids are used in designing a steroid cycle. Individuals using multiple steroids at one time (stacking) have been reported in other studies (2, 4, 7, 8). Twenty percent of the steroid users reported they obtained the drugs from other sources, namely Europe and mail order.

Korkia and Stimson (6) found that 9% of men and 2.3% of women had taken androgens at some time while Perry et al. (7) reported a higher incidence of androgen use (~38.8%). In the current study, 10.8% of the respondent admitted steroid use. Though the investigation had a high response rate, it appeared that individuals were still reluctant to admit drug use. The underreporting of steroid use by subjects participating in a survey study has been suggested by other investigators (1, 8).

The most commonly used drug was Deca Durabolin (nandrolone decanoate). Nandrolone decanoate is very popular with male and female bodybuilders and strength athletes because it is reported to be one of the milder androgens that can still yield good gains in lean body mass and strength (5). For the steroid users in El Paso, this drug has another advantage. Nandrolone decanoate, one of the longest-lasting steroids available today, is injected only every 14–21 days and the metabolites of this drug can remain active in the body for up to 1 year (11). By using nandrolone, American steroid users can cross the border into Mexico and administer their injections while in the pharmacy where the drug was purchased. Injecting steroids in Mexico eliminates the risk of being apprehended while transporting the drug(s) across the border. The popularity of Deca Durabolin with steroid users in El Paso, TX, differs from the popularity of those drugs reported in other studies (4, 8, 12). Frankle and colleagues (4) reported the most popular drug with weightlifters in Chicago was Winstrol (stanozolol), while Pope et al. (8) reported that Dianabol (methandrostenolone) was the most commonly used steroid among the population of college-aged men surveyed. Windsor and Dumitru (12) reported testosterone es-

ters were most commonly used among San Antonio, TX, high-school steroid users. The pattern of androgen self-administration varies among different parts of the country, depending on the drugs that are popular and available in a given area, as demonstrated by the aforementioned studies.

The second most popular group of drugs included the testosterone esters (i.e., Primoteston, Sostanon, and Sten). These drugs are easy to carry across the border because most of the testosterone products come in small glass ampules that are easily hidden on one's person. The oil-based testosterone esters are also long acting and must only be injected every 7–10 days, which would enable the user to return to Mexico for injections.

The oral steroid preparations maintain popularity with steroid users. It is possible that individuals are using oral preparations to avoid injections and because these preparations are known to produce immediate results, whereas injectable steroids often take several weeks to achieve an effect. The veterinary drugs Laurabolin, Norandren, Equipoise, Testosterona, and Deposterona were commonly used among the group of users surveyed. The veterinary compounds are less expensive than the pharmaceutical preparations and come in large multidose vials. The inexpensive price and large quantities available makes veterinarian drugs attractive to steroid users. Perry et al. (7) reported on the use of 1 veterinary steroid, Equipoise, which 16.1% of the steroid users surveyed admitted injecting the drug.

Steroid use ranged from 6 months or less to greater than 5 years. The majority of respondents reported using androgens for 6 months or less. This finding is in agreement with Frankle et al. (4), who reported 40% of the users interviewed started using steroids within 1 year of the survey. Also, Frankle et al. (4) reported that 24% of the users surveyed had administered androgens for a period of more than 5 years. As reported by other investigators, the use of androgens for several years is not uncommon (4, 6).

The most common side effects reported by subjects were hypersexuality, edema, abnormally aggressive behavior, and acne. Other studies have noted similar untoward effects (3, 6, 9, 10), as well as some uncommon effects (e.g., knee joint sepsis and radial nerve palsy) (3) and underrecognized effects (e.g., body dysmorphic disorder) (Harrison Pope, personal communication). It appears that the effect of androgens on the sex drive is highly variable, as observed in this study and the literature (10).

Interestingly, steroid users who cycled drugs for longer time periods did not report more side effects. It might have been more appropriate to compare weekly milligram doses with side effects, or duration of drug use (number of years) with side effects; how-

THE UNIVERSITY OF TEXAS AT EL PASO
UTEP

QUESTIONNAIRE

1. Please complete the form, seal it in the envelope provided, and deposit it in the container. **DO NOT SIGN YOUR NAME.**

2. Sex: Male Female 3. Age:

4. Ethnicity: Hispanic
 African American
 Caucasian Non-Hispanic
 Native American
 Pacific Islander
 Asian
 Other (Please Specify) _____

5. Why do you lift weights? General Fitness
 Powerlifting
 Bodybuilding
 Other (Please Specify)

6. Are you now using anabolic steroids? Yes No

7. Have you ever used anabolic steroids? Yes No

If you answered "No" to question 7 you are finished. Thank you for your participation. If you answered "Yes" to either question 6 or 7 please complete the survey.

8. Why do you use anabolic steroids? Please explain in the space provided:

9. The steroids you used for your cycle were obtained from:

Pharmacy in Juarez
 Veterinarian in Juarez
 Blackmarket in US
 Veterinarian in US
 Other (Please Specify) _____

10. Type of steroids you have used for previous cycles or in current cycle, please check all that apply:

Injectables available in Juarez

Orals available in Juarez

Primoteston
 Sostanon 250
 Sten
 Testoprim-D
 Deca Durabolin
 Primobolan Depot
 Laurabolin-50
 Norandren
 Testosterona
 Deposterona
 Equipoise
 HCG
 Growth Hormone

Stennox Tabs
 Primobolan Tabs
 Proviron
 Nolvadex (Anti-Estrogen)
 Other _____

Figure 1. Part 1.

11. Approximately how long have you used anabolic steroids?
 6 months or less ___ 6 months to 1 year ___ 2 years ___ 3 years ___
 4 years ___ 5 years ___ Greater than 5 years ___
12. Generally how long are your cycles?
 4 to 6 weeks ___ 8 weeks ___ 10 weeks ___ 12 weeks ___ 16 weeks ___
 Greater than 16 weeks ___
 Other (Please Specify) _____
13. Have you ever experienced side effects from your steroid use?
 Yes ___ No ___
14. If you answered yes to question #13 please check all that apply:
 Bitch Tits
 Water Retention
 Decreased Sex Drive
 Increased Sex Drive
 Premature Hair Loss
 Unusual Aggressive Behavior
 Increased Facial and/or Body Hair
 Menstrual Cycle Irregularities
 Clitoral Enlargement
 Acne
 Impotence
 Testicular Atrophy
15. Do you currently receive regular blood screens from a physician or health center to detect possible side effects? Yes ___ No ___
16. If you could legally obtain steroids from a doctor and have him or her monitor your response to the drugs would you still get drugs from Mexico and/or the black market? Yes ___ No ___
17. Do you feel as though the medical community and the media has overplayed the dangers of anabolic steroid use? Yes ___ No ___
18. In your opinion, has the strict laws on anabolic steroid use stopped you or other athletes from using these drugs? Yes ___ No ___

THANK YOU FOR YOUR PARTICIPATION!!!

Figure 1. Part 2.

ever, this information was not obtained from the study participants.

The responses from steroid users to the survey opinion questions provided insight into the thought processes of androgen users. Eighty-one percent of the respondents said they would cease obtaining androgens from Mexico and/or the black market if steroids were available legally. Over three-fourths of the steroid users surveyed said that the medical community and the media have exaggerated the dangers of androgen use. Nevertheless, educating the steroid user of the possible harmful effects might dissuade drug use. Furthermore, it is not clear that the prohibition of these substances has proven effective in preventing androgen use, as the current study suggests.

Practical Applications

This study represents the first survey of androgen use in an adult population located in a border city of the

United States and Mexico. It is the authors' opinion that Mexico represents a main source for androgens for individuals living in the United States. As reported by underground sources, Mexican drugs are widely available all over our country, not just in states with close proximity to foreign soil.

Strength and conditioning professionals, more so than any other group (i.e., physicians, nurses, physical therapists, scientists, and others), are likely to have regular contact with individuals who self-administer these drugs. From the authors' experience in the field, it is apparent that athletes in large numbers are using Mexican steroids. It is also apparent that strength and conditioning professionals and members of the medical community who treat athletes must be educated about the preparations that are commonly used. To date, there are no peer-reviewed, athletically relevant sources of information detailing the use of these drugs. This lack of information could present a problem for physicians with patients who use androgens. Most

professionals in the field must rely on underground reference guides containing often dangerous, scientifically incorrect information written by individuals with no academic training. Undoubtedly, most strength coaches will, at some time in their career, be presented with questions about these substances. It is in our athletes' best interest to have current and accurate information about these compounds.

References

1. BUCKLEY, W.E., C.E. YESALIS, K.E. FRIEDL, W.A. ANDERSON, A.L. STREIT, AND J.E. WRIGHT. Estimated prevalence of anabolic steroid use among male high school seniors. *JAMA*. 1260:3441-3445. 1988.
2. EVANS, N.A. Gym and tonic: A profile of 100 male steroid users. *Br. J. Sports Med.* 31:54-58. 1997.
3. EVANS, N.A. Local complications of self administered anabolic steroid injections. *Br. J. Sports Med.* 31:349-350. 1997.
4. FRANKLE, M.A., G.J. CICERO, AND J. PAYNE. Use of androgenic anabolic steroids by athletes. *JAMA*. 252:482. 1984.
5. GRUNDING, P., AND M. BACHMANN. *World Anabolic Review* (1st ed.). Houston: M.B. Muscle Books, 1996.
6. KORKIA, P., AND G.V. STIMSON. Indications of prevalence, practice and effects of anabolic steroid use in Great Britain. *Int. J. Sports Med.* 18:557-562. 1997.
7. PERRY, H.M., D. WRIGHT, AND B. LITTLEPAGE. Dying to be big: A review of anabolic steroid use. *Br. J. Sports Med.* 26:259-261. 1992.
8. POPE, H.G., D.L. KATZ, AND R. CHAMPOUX. Anabolic-androgenic steroid use among 1,010 college men. *Phys. Sports Med.* 16: 75-82. 1988.
9. STRAUSS, R.H., J.E. WRIGHT, AND G.A.M. FINERMAN. Side effects of anabolic steroids in weight-trained men. *Phys. Sportsmed.* 11: 87-95. 1983.
10. STREET, C., J. ANTONIO, AND D. CUDLIPP. Androgen use by athletes: A reevaluation of the health risks. *Can. J. Appl. Physiol.* 21: 421-440. 1996.
11. VAN DER VIES, J. Implications of basic pharmacology in the therapy with esters of nandrolone. *Acta Endocrinol.* 271(Suppl.): 38-44. 1985.
12. WINDSOR, R., AND D. DUMITRU. Prevalence of anabolic steroid use by male and female adolescents. *Med. Sci. Sports Exerc.* 21: 494-497. 1989.