

# Are Primary Care Providers Identifying and Addressing the Use of Performance Supplements in Adolescent Athletes?

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## **Introduction**

Performance enhancing supplements are dietary additives used for the purpose of enhancing athletic success through increased strength, endurance, lowering of body fat or by increasing body mass. Many of these supplements are made available over the counter and are currently without government regulation to ensure their safety. It is largely due to the increase in media attention that the public has become more aware of the popularity of sports supplement use among athletes. It is the popularity of supplements in addition to the accessibility and unknown safety that makes supplement use, especially by adolescent athletes, of such concern.

Health care providers should be aware of the side effects of those commonly used supplements and should inquire about use in their adolescent patients. The objective of this project is to raise awareness to the potentially harmful side effects of performance enhancing supplements and to determine if healthcare providers are taking the appropriate measures in educating and screening adolescent athletes for supplement use.

## **Methods, Results, and Discussion**

A review of literature revealed the diverse use of performance supplements by adolescent athletes. Some report young athletes using supplements as early as junior high [1]. Adolescent athletes have reportedly used anabolic steroids, human growth hormone, androstenedione, stimulants, and creatine. Adolescents will often use supplements in hopes of enhancing athletic performance and give themselves a more competitive edge [1]. Side effects of such supplements range from gynecomastia, or male breast development and increased heart size to the potential for kidney failure and cardiac arrest.

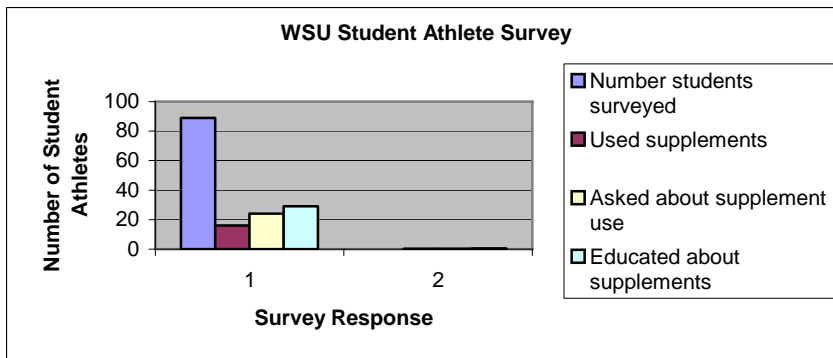
Anabolic steroids are associated with such side effects as hypertension, prolonged gynecomastia, aggressive behavior, testicular atrophy, delayed healing after an injury and cause premature closure of the growth plate, and sudden cardiac death. Androstenedione and dehydroepiandrosterone, both precursors to testosterone, have gynecomastia, premature epiphyseal plate closure, and cardiovascular side effects similar to that of anabolic steroids. Supplementation with human growth hormone puts its users at risk of acromegaly, characterized by the over growth of the skull bones, thickening of the fingers, muscular myopathy, carpal tunnel syndrome as well as insulin resistance which can lead to diabetes. Cardiovascular effects including hypertension, arrhythmias, hemorrhagic strokes and myocardial infarctions can be associated with stimulant supplementation. Seizures, headache, insomnia, irritability and tremors are noted potential side effects of stimulant use. Creatine, a favorite among adolescent athletes, can cause dehydration, gastrointestinal cramping and diarrhea, muscle strains and the potential for renal or liver failure.

In the Guidelines for Adolescent Preventive Services, GAPS, Recommendation 10 suggest, "All adolescents should receive health guidance annually to promote avoidance of tobacco, alcohol and other abusable substances, and

anabolic steroids [2].” Inquiring about the use of supplements, the frequency and duration of their use, as well as a careful assessment of potential risks exemplifies quality health care.

The objective of this study is to determine if healthcare providers are educating and screening their adolescent patients for supplement use. A questionnaire was distributed to 89 Wichita State University athletes assessing (1) supplement use as an adolescent athlete and (2) if health care providers asked and advised these adolescent athletes about supplement use.

The questionnaire was distributed and completed by 89 Wichita State University student athletes. 56 respondents were male and 33 were female student athletes, all of which participated in high school athletics. 18% reported using some form of supplement while participating in high school athletics. This percentage was significantly greater among male athletes where 94% of those who admitted to using supplements were male. 15% of those surveyed participated in high school football, the sport most associated with performance supplement use among adolescent athletes. Participants were also asked if they received an annual sports physical prior to their participation in high school athletics, and 10% reported not seeing their healthcare provider for that annual exam. 27% reported having been asked by a health care provider about supplement use at their annual physical, and 33% reported having had some form of education regarding the use of supplements.



## Conclusions

This study indicates that nearly three quarters of the athletes surveyed were not asked about supplement use at the time of their annual physical by healthcare providers. Performance substances are being used by adolescent athletes and have potential for adverse side effects. Guidelines regarding patient education of supplement use and other addicting substances already exist. Health care providers need to screen their adolescent patients about supplement use and offer patient education.

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## References

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