

NEW PROGRAM HELPS STUDENT ATHLETES AVOID STEROIDS USE

From National Institutes of Health

■(WASHINGTON) A new drug prevention and education program called ATLAS (Adolescents Training and Learning to Avoid Steroids) is extremely effective in preventing use of anabolic steroids among high school athletes, according to a study published in the Nov. 20, 1996 issue of the *Journal of the American Medical Association*. The study demonstrated that students in the ATLAS program had enhanced healthy behaviors, reduced factors that encourage steroid use, and lower intent to use steroids. The ATLAS program, created by scientists at the Oregon Health Sciences University and led by Dr. Linn Goldberg, was funded by a research grant from the National Institute on Drug Abuse (NIDA), National Institutes of Health.

"This is the first prevention study that has focused on the abuse of anabolic steroids," said Dr. Alan I. Leshner, Director of NIDA. "The results are promising, with the potential to have a long-term impact of health of young people and on their use of drugs such as steroids."

The ATLAS program includes seven 50-minute classes led by coaches and student team leaders. These sessions focus on the effects of steroids, sports nutrition, and strength training alternatives to steroids use. Students also participate in drug refusal role playing and learn about anti-steroids media messages. In addition to the classes there are seven weight room sessions taught by Oregon Health Sciences University research staff. Information is also distributed to parents, and they were invited to a discussion session.

"ATLAS is a very unique approach to dealing with the problem of steroid use among athletes. It involves a team-approach that empowers student athletes to make the right choices through education. And we now know it works," comments Dr. Goldberg.

The randomized, prospective study involved 1,506 football players/students from 31 different high schools. This year-long study was the first study to use coaches as members of the drug prevention team. Students filled out confidential questionnaires immediately before and after participating in the ATLAS program and then again approximately 12 months later to measure the effectiveness of the program.

Compared to student athletes who were not exposed to the ATLAS program, ATLAS participants had increased understanding of

the effects of steroids, greater belief in personal vulnerability to the consequences of steroid use, improved drug refusal skills, less belief in steroid-promoting media messages, increased belief in the team as an information source, improved perception of athletic abilities and strength training self-efficacy, improved nutrition and exercise behaviors and reduced intentions to use steroids.

In the 1995 Monitoring the Future Study, conducted under NIDA funding by the University of Michigan, about 2% of students in the 8th, 10th, and 12th grades had used anabolic steroids at least once in their lives.

GROUP B STREP VACCINE SHOWS PROMISE IN CLINICAL STUDIES

From National Institutes of Health

■(WASHINGTON) A major step toward developing a vaccine to prevent infections with Group B streptococci bacteria, an important cause of infant disease and death, has been reported by researchers supported by the National Institute of Allergy and Infectious Diseases (NIAID). The study results appear in the Nov. 15, 1996, issue of *The Journal of Clinical Investigation*.

An experimental vaccine against one type of Group B strep stimulated strong immune responses in human volunteers. Later, in laboratory experiments, antibodies isolated from the volunteers neutralized the same type of Group B strep bacteria and prevented infection in newborn mice that were exposed to it.

"We are very excited about this important clinical finding," says Pamela McInnes, D.D.S., project officer for NIAID's Group B Streptococcal Initiative, a program begun in 1992 to develop a Group B strep vaccine. "This work provides the most promising evidence to date that we're getting closer to finding an effective vaccine."

Ten to 30 percent of all women are asymptomatic carriers of Group B strep, harboring the bacteria in their genital tracts. During childbirth, the bacteria is transmitted to approximately half of all infants born to these women. Nearly two of every 1,000 infants in the United States develop invasive infections, which can cause pneumonia, meningitis and other serious illnesses, usually within the first three months of life. Half of all infants who develop Group B strep meningitis experience long-term neurologic problems, including seizure disorders and mental retardation. About 10 percent of infected infants die.

Anabolic steroids are synthetic derivatives of the male hormone testosterone. Their use, by athletes and others, increases lean muscle mass, strength, and the ability to train longer and harder. However, anabolic steroids use can produce severe physical and emotional side effects. For adolescents, a serious side effect can be premature skeletal maturation, or stunted growth. Other risks include severe acne, trembling, high blood pressure, jaundice, and liver tumors. In addition, clinical depression often occurs when use of anabolic steroids is stopped, a factor which may lead to dependence.

"Studies have shown that babies who get Group B strep disease are born to women who lack antibodies to the bacteria," explains Dennis L. Kasper, M.D., lead author of the current study. "The good news, however, is that women who have antibodies to Group B strep pass those antibodies to their infants during pregnancy. Those antibodies protect the infants from infection after they are born."

For more than a decade, Dr. Kasper and his colleagues at Brigham and Women's Hospital in Boston have tried to develop a vaccine that would protect infants from Group B strep by stimulating the production of antibodies in pregnant women. Theoretically, the maternal immunity generated by such a vaccine would cross the placental membranes and protect the newborn for the first few months of its life, when most Group B strep disease occurs.

The Group B strep bacterium is enveloped in a complex sugar molecule called a polysaccharide capsule. Because it is known to play a key role in stimulating the production of antibodies to Group B strep, the capsule is a logical vaccine candidate. However, previous studies supported by NIAID found that immunization with the purified capsule molecule produced insufficient amounts of antibody in human volunteers. Those studies led Dr. Kasper and his colleagues to try to boost the vaccine's performance by chemically linking, or conjugating, the capsule to tetanus toxoid, a protein that has been used to increase the immune-stimulating properties of several other vaccines.

In the current study the researchers compared this so-called conjugate vaccine with its predecessor. Under the direction of Carol J. Baker, M.D., an NIAID-funded investi-

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