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# The Effects of Anabolic Steroids on Mare Behavior



**V**eterinarians have utilized anabolic steroids for many years in the treatment of debilitated horses, as these drugs speed tissue repair after trauma or surgery. Anabolic steroids, compounds related to testosterone, have an androgenic effect when taken over a period of time. Two anabolic compounds, stanozolol and boldenone undecylenate, recently were studied by Drs. Marolo C. Garcia, Sue McDonnell, and Terry L. Blanchard at the Georgia and Philip Hofmann Research Center for Animal Reproduction at the University of Penn-

sylvania during the medication period, and for an additional eight weeks afterward. The researchers studied the interactions within each group, among the groups and with humans. Also studied was the reaction of mares from each group to a pony stallion. "We found that the mares on stanozolol and the placebo medication exhibited normal behavior when interacting among themselves, with a stallion, and with humans," said Dr. McDonnell. "The mares on boldenone undecylenate, though, exhibited behavior characteristic of stallions." According to Dr. McDonnell, these mares became quite aggressive, would fight among themselves, and were hard to

herd, including aggressive responses, control of feed resources, mutual grooming activities, and dominance patterns were studied in relation to the development of male type behavior in the mares."

The researchers discovered that boldenone-treated mares did not show any signs of estrus even though their ovarian cycling was normal. They reacted aggressively to the teaser stallion and would not stand for breeding. Mares on stanozolol and on the placebo showed signs of estrus and behaved normally with the teaser stallion.

"Trainers frequently use anabolic steroids to perk up a horse which has become stale at the track or in the ring," said Dr. McDonnell. "They believe that these drugs will increase the animal's stamina and strength and lead to better performance; however, studies so far have not shown that anabolic steroids directly lead to greater strength and better performance." She also pointed out that the Center routinely encounters breeding difficulties in horses retired from competition. Mares are frequently quite uncooperative and stallions appear to have low sperm counts. "It could be due to certain anabolic steroids given over a period of time," she said. "Studies have shown that androgenic drugs, administered over a period of time, lead to reduction in the size of the testes in stallions and suppression of ovarian function in mares. The adverse effects on testes is especially pronounced in young stallions."

She mentioned that stanozolol and boldenone undecylenate are approved by the FDA for use in non-pregnant mares and geldings. "Trainers should be cautious in the use of drugs with high androgenic potential, because the behavior associated with boldenone undecylenate does not abate even when the hormone level has returned to normal. We don't know whether this anabolic steroid causes permanent changes. More studies are needed."

Dr. McDonnell and her colleagues have expanded the behavior clinic. The equine behavior clinic at Hofmann Center of New Bolton is perhaps the only one in the world that is integrated with the activities of a large animal teaching hospital, as well as with the full support of semen and endocrine laboratories and theriogenology clinicians. They not only treat behavior problems related to reproduction but also see cases which encompass maternal rejection, stable vices, and frenzied stallion syndrome.

The anabolic steroid study was funded by Sterling Animal Health Products, Division of Sterling Drug, Inc.

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handle by humans. "They developed marking behavior, seen normally in stallions, mounted other mares, and tried to form harem groups. They fought the teaser stallion." This behavior persisted not only during the medication period but also had not stopped when the study ended 12 weeks after the medication interval.

"Part of the impetus for this project was the need to gather critical information on development of male sexual behavior in order to better evaluate stallions and mares presented for treatment of abnormal sexual behavior to our reproduction clinic," said Dr. McDonnell. "Sociosexual interactions within the

sylvania School of Veterinary Medicine. Both compounds are approved for veterinary use.

"We wanted to determine whether either of these two drugs affected the sociosexual behavior of mares," explained Dr. McDonnell, a researcher at the Hofmann Center, with a special interest in behavior problems of horses. "Thirty ponies, divided into three groups of ten, were used in this study." One group received stanozolol, one boldenone undecylenate, and the third group received placebo medication. The drugs were administered for a period of 12 weeks at close to the manufacturers' recommended dosages.

The mares were kept in an open pasture and allowed to mingle freely. They were observed daily

