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A modern approach towards anabolic androgenic screening in athletes

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Urinalysis has been the mainstay technique used to screen athletes for the anabolic steroid use before athletic events. Although urinalysis provides sufficient evidence of anabolic steroid use there are still major disadvantages that have caused controversy in the past. One of the main setbacks is that urinalysis can only detect steroid use in the short term period before athletic events which makes it difficult to predict whether or not athletes have used steroids in during training and discontinued in the short period before their screening. Another problem is that sometimes urinalysis could result in a false positive due to an accidental isolated event consumption. This has led to the exploration of other techniques to screening with hair analysis being at the forefront of primary research. Hair analysis has been shown to provide more consistent and long term results for anabolic steroid consumption. Hair samples from 180 participants were taken and analyzed using ELISA and LC-MS/MS for confirmation. The technique screened 19 of the participants as a positive for steroid use (16 for Nandrolone and 3 for Stanozolol) and the control was an athlete who had admitted to steroid use. The results confirmed that hair analysis provides a wider detection window and is more specific allowing for only small amounts of hair specimens. This technique is also less invasive and more efficient than urinalysis.

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