

## E12 Anabolic Androgenic Steroids (AASs) Use/Abuse: The First Italian Report

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**Learning Overview:** After attending this presentation, attendees will be familiar with the first Italian report about the dimension of AASs use/abuse. Notably, for the first time, this study was conducted on the data obtained through anonymous questionnaires to evaluate the voluptuary practices with a particular focus on AAS or smart drug use in Italy.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by providing the first data about the scope of AASs use/abuse in Italy, where it is illegal to sell AASs. Moreover, considering that the questionnaires map the voluptuary habits of the interviewees and their habits and perception about the use of “smart drugs” and “energy drinks,” a better comprehension highlights the way of AAS auto-administration, with or without other substances.

Even if AAS abuse is associated with a wide number of collateral effects, adolescents and athletes frequently use a large group of synthetic derivatives of testosterone, both for aesthetic uses and for improving performance. The market for performance-enhancing drugs is now huge and continuously increasing. The phenomenon of doping no longer affects only professional athletes but also subjects practicing sports activities at the amateur level. The adverse events for long-term usage among adolescents are very similar to those of adults, even if doses and duration are significantly less. On the other hand, acceleration of pubertal development and early epiphyseal closure, resulting in reduced adult height, are typical adolescent adverse effects; while masculinization of females and acne appears to be more severe in the adolescent.

This experimental study aims to realize the first map of the Italian phenomenon through anonymous questionnaires to evaluate the voluptuary practices linked to AAS or smart drug use in southern Italy. To achieve this goal, two questionnaires were administered: Survey 1 was the Multidimensional Body-Self Relations Questionnaire (MBSRQ); Survey 2 was composed of 48 questions regarding the voluptuary habits of the interviewees about the use of smart drugs, energy drinks, and AAS, and the interactions with physicians regarding performance-enhancing drugs. Both questionnaires were administered to a group of university students. Both surveys were performed between October 2018 and March 2019.

Two hundred forty-seven subjects correctly filled out the questionnaires; 48.2 % were male, 51.4% were female (age  $M=36.04 \pm 13.72$  years). All subjects enrolled were Italian and residents in southern Italy. The main results of the questionnaire demonstrated that eight people admitted the use of AASs (about 3.23%). Moreover, three people revealed they used them for more than 24 months. The motivations to use AASs are the same as described in the literature: they used them to improve their physical aspect and performance. Moreover, about 10% of the interview subjects admitted to the use of substances containing Tetrahydrocannabinol (THC). Interesting results are revealed about energy drink ingestion: about 50% usually used it to improve their mental activity. Furthermore, all subjects who admitted to the use of AASs have also consumed energy drinks and, in one case, THC. Comparison between these results and the results of the Section 1 test revealed that all AASs users had experienced previous body acceptance problems at some point in their personal history, which has now been resolved.

In conclusion, the questionnaire data demonstrated that the use of AASs in the young Italian population is about 4%; considering that in Italy, AAS sales are not allowed, online markets, the black market, gym friends, or physicians seem to be the first distributors of these substances. This aspect linked to the provenience of the AASs has to be recognized as very important both by the police and by the forensic examiner. Indeed, other unknown substances could be added to the anabolic agent, generating not only the adverse effects linked to the AASs use/abuse but also the organ damages linked to these unknown addicted substances. The last consideration is related to the combined use between AASs and energy drinks or THC: it is clear that the AASs adverse effects can be increased by their combined use.

### Anabolic Androgenic Steroids (AASs), AASs Italian Report, Energy Drink