

## ***“Athlete Biological Passport and Longitudinal Steroid Profiles: New Metabolites, Confounding Factors and Sports Specific Variations”***

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### **Project Overview**

The aim of this study is to gain more knowledge about the longitudinal variation in the concentrations and ratios of “new” steroid markers not yet included in the steroid module of the Athlete Biological Passport (ABP). This will include variations of sulphate metabolites, as well as other testosterone metabolites from the glucuronide fraction which are not included in the ABP today. In addition, we will investigate non-analytical factors that may influence the new markers, as well as markers of the established steroid module. When combining these factors, we expect to improve the understanding of the observed biological variation in the steroidal passport, and with this increase the sensitivity of the ABP.

We will conduct a longitudinal study of steroid profiles from 30 individual athletes, over a time period of one year. The confounding factors included in routine doping analysis will be analysed and evaluated. Samples will be collected in and out of season, and from different sports. In addition, participants will be asked to provide information on stress level; both physical and psychological at the time of sampling (by self-reporting). Information about these factors is normally not given during routine doping controls. Knowledge of the possible influence of these factors on the steroid markers is important in the evaluation of the passports.

The samples will be analysed using routine methods in doping analysis, using gas and liquid chromatography coupled to mass spectrometry. Both present and possibly new markers for the ABP will be evaluated