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On-field methodological approach to monitor the menstrual cycle and hormonal phases in elite female athletes

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## INTRODUCTION:

Currently, there are no guidelines for implementing the follow-up of menstrual status including the natural menstrual cycle (NC) or oral contraception (OC) in a sports setting. We aimed to provide a feasible, on-field methodological approach for monitoring NC and OC in female athletes.

## METHODS:

We developed a smartphone app with daily questionnaires to monitor both NC and OC phases in 19 elite female soccer players ( $23.7 \pm 4.4$  years) over 7 months. Adherence and compliance were evaluated. The NC and OC phases were based on calendar data in order to establish an individual menstrual profile for each athlete.

## RESULTS:

Initial questionnaire revealed that vast majority of female players (4 out of 5) presented a large interest in monitoring their menstrual status. The online monitoring yielded high athlete adherence ( $87.0 \pm 14.2\%$ ) with a slight decrease over the winter break and at the end of the championship, which necessitated adaptations to promote compliance. Monitoring identified the specific menstrual pattern of each athlete and highlighted large inter-individual variability.

## CONCLUSION:

This study assesses for the first time the interest of female player's in monitoring their menstrual status. It provides a new methodological approach as well as guidelines for optimizing on-field monitoring. It also anticipates some obstacles sport staffs may encounter when trying to implement such follow-up. It is essential to better understand the menstrual profile of athletes and determine its potential impacts on wellbeing and performance.

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