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Changes in the objective measures of sleep between the initial nights of menses and the nights during the mid-follicular phase of the menstrual cycle in collegiate female athletes

(女子大学生アスリートの月経初日と卵胞中期における客観的睡眠の質の変化)

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Abstract

Sleep is an important recovery period for athletes. Women, including athletes, have reported sleep disturbances around menses. Thus, the aim of this study was to assess the changes in the objective sleep parameters in the nights during menses and in the mid-follicular phase of the menstrual cycle of young female athletes.

Female collegiate athletes with regular menstrual cycles were recruited. The participants underwent home electroencephalogram monitoring during the first and second nights after the onset of menses (M1 and M2, respectively) and during one night between the seventh and 10th night after menses onset (mid-follicular phase).

Data of 45 athletes were analyzed. The total sleep time was significantly reduced and sleep onset latency was significantly prolonged in M2 compared with those in the night during the mid-follicular phase. Sleep efficiency was significantly reduced in M1, when compared with that in the night during the mid-follicular phase. Changes in the percentage of deep sleep across menstrual cycles differed among the participants with and without menstrual symptoms or concerns for sanitary products; moreover, such participants spent a lower percentage of time in deep sleep in M1 when compared to the other nights.

Collegiate female athletes with regular menstrual cycles are likely to have trouble falling asleep, tend to sleep less, and when concerned about sanitary products, have less deep sleep during menses. Even in young female athletes with regular menstrual cycles, sleep can be disturbed during menses. Interventions to restore or improve sleep should be considered.