

夕方に行う10km走が午後の昼寝によって悪化した夜間睡眠に及ぼす影響
**Effects of an Early Evening 10-km Run on Nocturnal Sleep
Homeostatically Degraded by an Afternoon Nap**

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Abstract

We examined the effect of acute exercise performed after an afternoon nap intended to homeostatically degrade the following night's sleep quality. Nine healthy young people unaccustomed to regular exercise ran for 10-km after an afternoon nap. Polysomnographic (PSG) measurements were carried out during night sleep and during naps in three different conditions: Baseline night (Nt0), Nap (Np1) + night after no run (Nt1), and Nap (Np2) + night after 10 km run (Nt2). Standard visual sleep stage scoring and Fast Fourier Transformation (FFT) analysis of the electroencephalogram (EEG) were performed on 30 sec epochs. For the seven subjects who met sleep parameter inclusion criteria, sleep efficiency (SE), total sleep time (TST), and duration of stage REM for Nt1 condition within sleep variables were significantly less than those of the Nt0 condition by $7.54 \pm 6.57\%$, 36.21 ± 31.54 min, and 23.07 ± 21.63 min, respectively. There were no significant differences between Nt1 and Nt2 in duration of each sleep stage except the point that the total delta power of Nt2 was significantly higher than that of Nt1. In conclusion, the total delta power of Nt2 condition was higher than that of Nt1, suggesting that 10 km run improved following night sleep. The necessity of computerized quantitative analysis in such fine changes were also confirmed.

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