

## **The Effect of prior endurance training on nap sleep patterns**

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The use of daytime napping as a recovery tool following exercise is virtually unexplored. This study therefore, was designed to appraise the timing and quality of daytime nap sleep following endurance training in an athletic population. Six physically trained male subjects ( $22.5 \pm 2.4$  years) performed a standardised 90 minute endurance training session followed by a 90 minute daytime nap either 1 or 2 hours post training, commencing at either 10:30h or 11:30h. During the nap, sleep was monitored using polysomnography (PSG). The primary outcome measures were slow wave sleep (SWS) and sleep onset latency (SOL). Secondary measures included rapid eye movement (REM) sleep, total sleep time (TST), total wake time (TWT) sleep efficiency (SE), and arousal index. Subjective measurements were recorded using a visual analogue scale (VAS) 15 minutes post-nap and included subjective sleep quality, subjective alertness and preparedness for training. The duration of SWS was significantly greater during the 11:30h naps compared to the 10:30h naps, possibly due to a longer duration of prior wakefulness. The time interval between training and the nap showed no significant effect on the duration of SWS during the nap. SOL, REM sleep, TST, TWT, SE and arousal index did not differ according to the circadian timing of the nap or the time interval between the training and the nap. According to subjective data, the subjects' were more prepared for a subsequent acute bout of endurance training following a 2 hour interval between training and nap sleep compared to a 1 hour interval. The results on the circadian timing of the nap suggest that there is potential for the use of a daytime nap as a valid recovery tool following endurance training, particularly if commenced later in the morning rather earlier, due to the presence of a substantial amount of SWS. Sleep quality and duration showed an improved trend with habituation to nap sleep.