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# **Timing of the Major Sleep Period as a Fatigue Countermeasure in U.S. Navy Recruits**

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United States Navy recruits are trained at the Recruit Training Command (RTC) in Great Lakes, Illinois. Basic training, or Boot Camp, lasts approximately 63 days and encompasses many areas of military training. The schedules of the recruits are closely managed, and this includes the time allocated for their sleep. The objective of this study was to study the sleep patterns of these recruits. This research involved analysis of sleep patterns and activity levels collected by wrist activity monitors. The data collection occurred from April to June 2002, comprising one complete cycle of recruit initial training. The actigraph data were analyzed in order to highlight nighttime sleep patterns and any daytime sleep episodes, or naps.

As recently as 2001, recruits were allowed to sleep for only 6 hours per night (from 2200 to 0400.) This sleep regimen changed in May, 2002 to 8 hours, for a sleep schedule of 2100 to 0500. Currently, U.S. Navy recruits are allowed to sleep for 8 hours from 2200 to 0600. We assessed the quantity and quality of sleep received by a sample of recruits in these two 8 hour conditions: 2100 to 0500 and 2200 to 0600. The data represents a cohort of recruits who shifted bedtimes from 2100 to 2200 during Boot Camp during our study.

The majority of recruits received more sleep when following the 2200 to 0600 sleep regimen than when following the 2100 to 0500 sleep regimen. On average, the 2200 bedtime resulted in 22 more minutes of sleep per night per recruit. This coincides with the predictable shift (favoring later bedtime and later awakening) seen in the circadian rhythms of adolescents and young adults. We conclude that the specific timing of the major sleep period may be a crucial factor to consider when scheduling work rest cycles.