

**LENGTH OF DAY CORRELATES WITH FREQUENCY OF MALADAPTIVE BEHAVIORS AND SLEEP EFFICIENCY IN THE DEVELOPMENTALLY DISABLED**  
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**Objective:**

Maladaptive behaviors are problematic in individuals with developmental disabilities (DD) resulting in permanent tissue damage, harm to others and damage to property. Previous findings suggest that frequency of self-injurious behaviors is strongly related to the dysregulation of ACTH and beta-endorphin production in the hypothalamic-pituitary-adrenal axis as a response to stress. The imbalance in hormonal production could be related to disturbed circadian patterns, which normally modulate endogenous diurnal hormones (e.g. cortisol) based on variations of length of daylight.

**Study Design:**

This study examined the variations in daylight hours throughout the year and its relation to sleep efficiency and frequency of maladaptive behaviors in individuals with DD. Twenty-six participants were observed daily for an 18-month period. Frequency of maladaptive behavior were recorded and the minutes of sleep per night was logged in 15 minute intervals between 10:45 PM – 6:15 AM. A sleep efficiency index (SEI), which is a ratio of sleep and awake intervals over the total number of observed intervals of time observed, was also calculated.

**Results:**

Preliminary analyses indicate that maladaptive behaviors decreased as hours of day increased for a majority of the patients. Additionally as the length of days increased, sleep efficiency increased for a majority of participants.

**Conclusion:**

Findings may indicate a relation between length of day and internal physiological mechanisms involved in sleep efficiency and maladaptive behaviors.

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