

**ABSTRACT****THE EFFECT OF DIAZEPAM-INDUCED SLEEP HOUR ALTERATION  
WITH THE BLOOD GLUCOSE LEVEL OF THE  
ACTIVE AND RESTING PERIODS OF MICE**

Several studies have indicated the widespread effect of sleep and sleep pattern to several endocrine functions throughout the body. Among these multiple endocrine processes, cortisol and liver activity are some of the functions that may directly alter the blood glucose level. For people with or without a sugar metabolism related disorder, an irregularity of the blood glucose level may affect their daily performance and productivity. With the rising trend of irregular sleep pattern throughout the population, more researches regarding the sleep-wake mechanism and its effects on the blood glucose regulations are required. This study used 24 mice (*M. musculus*), which were divided among 4 groups based on the starting time of their resting periods using the induction of 0.004 mg diazepam delivered orally for 14 days. All four groups, are then tested for their non-fasting blood glucose level per 4 hours for 3 x 24 hours. While the comparison, analyzed with a mean comparison, between the groups doesn't show similarity between the 4 groups active and resting period glucose level, a paired t-test of the 2<sup>nd</sup> experimental group (resting periods start time at 15.00 GMT +7) shows a significant difference ( $p = 0.00$ ) between the active and resting periods. The group shows a higher resting period blood glucose level (averaged at 170.74 mg/dL) than the active period blood glucose level (averaged at 150.14 mg/dL). Further studies are required to analyze the cause of this anomaly.

**Keywords:** Blood glucose level, sleep pattern, sleep time, activity period, sleep period