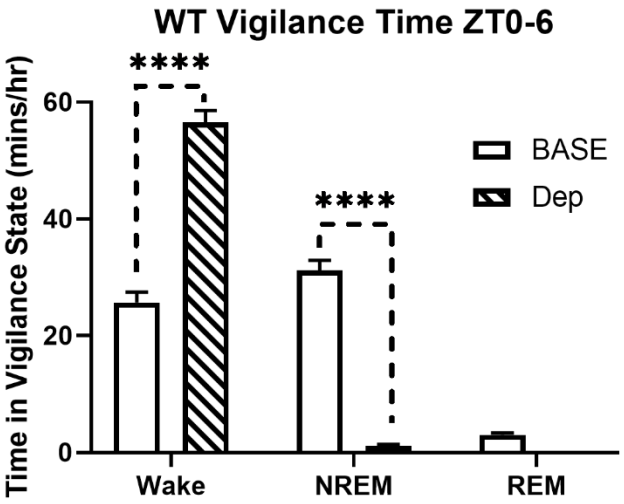
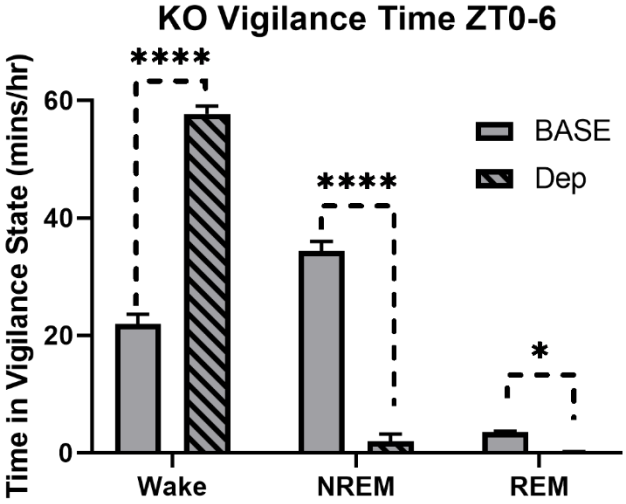
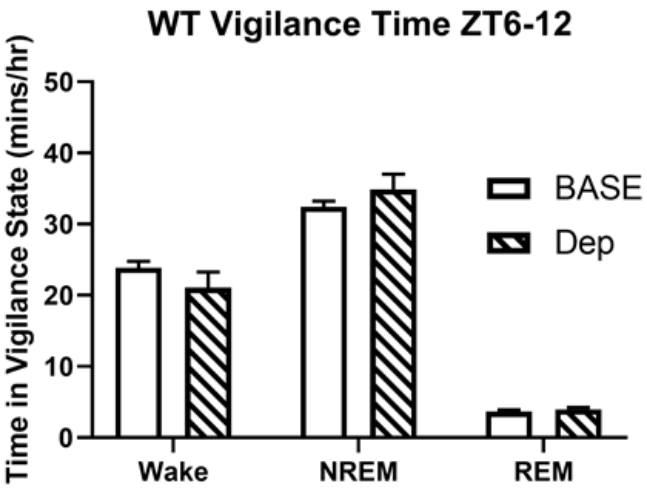
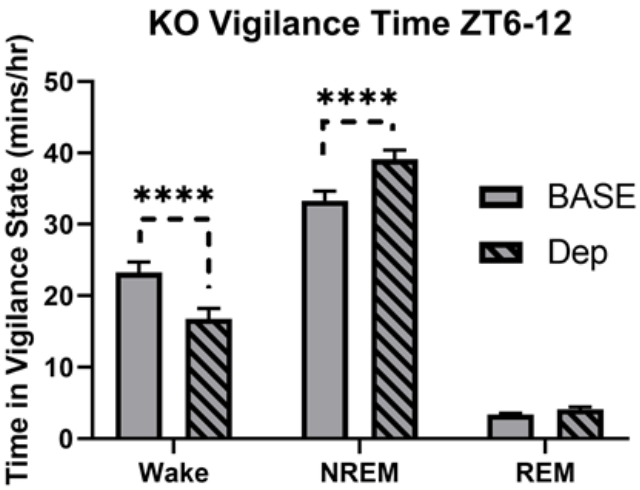
Active Sleep Deprivation

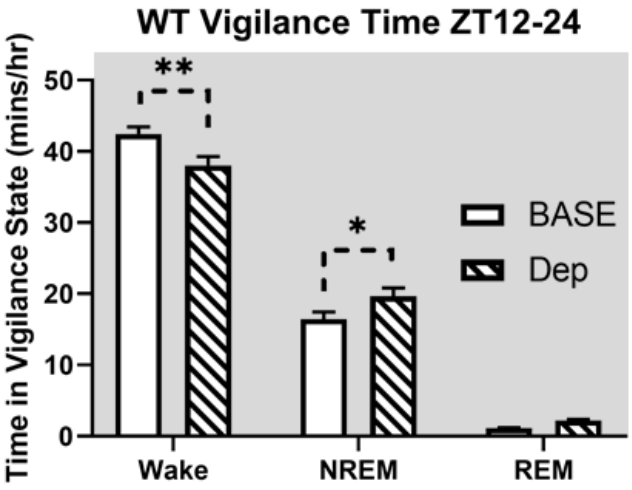


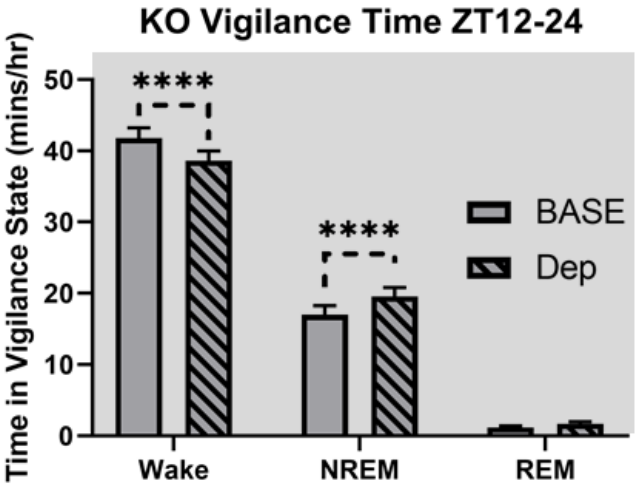


Recovery Sleep following Sleep Deprivation









Supplementary Figure S1. WT (n=8) and KO (n=10) animals have decreased time in wake and enhanced time in NREM sleep during the recovery period following sleep deprivation. Two-way RM ANOVAs (between = vigilance state, within = baseline vs sleep dep) were run comparing the average minutes per hour in each vigilance state to determine if the automated 6hr sleep deprivation (ZT0-6) enhanced time in recovery sleep. The upper graphs represent the time during active sleep deprivation (ZT0-6), the middle graphs represent the 6hrs of recovery sleep immediately following sleep deprivation (ZT6-12), and the lower graphs represent the remaining hours of recovery sleep (ZT12-24) which occur during the dark period. The active sleep deprivation period enhanced wake and reduced NREM sleep in all animals. In WT animals, the rebound sleep response occurs during ZT12-24, while in KO mice it occurs during both ZT6-12 and ZT12-24. This baseline recording was taken 24hrs before the automated sleep deprivation. Stars represent a significant Holm-Sidak post hoc test following a significant interaction. The F statistics for significant interactions were as follows: WT ZT0-6, $F(2, 21) = 305.7$, $p<0.0001$; KO ZT0-6, $F(2, 27) = 703.0$, $p<0.0001$; WT ZT6-12, not significant; KO ZT6-12, $F(2, 27) = 97.57$, $p<0.0001$; WT ZT12-24, $F(2, 21) = 14.56$, $p=0.0001$; KO ZT12-24, $F(2, 27) = 32.48$, $p<0.0001$.