**S14 Table.** P-values from burden testing of rare (MAF < 0.01%) loss-of-function and missense variants in genes previously reported to harbour variants causal for disruptive sleep duration or timing on accelerometer estimates of sleep duration in UK Biobank.There were no remaining loss-of-function carriers for *GRM1*, *ADRB1* and *CRY2* within the subset of individuals from UK Biobank who wore an accelerometer.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Gene** | **Canonical** **Transcript** | **Reported****Trait** | **Variant Class** | **Sleep** **Duratione** | **Sleep** **Durationf** | **Sleep Duration** **4 to 6 hours** | **Sleep Duration** **1 to 6 hours** | **Sleep Duration** **1 to 5 hours** | **Sleep Duration** **1 to 4 hours** |
| *GRM1* | ENST00000361719 | FNSSa | LoFd | NA | NA | NA | NA | NA | NA |
| Missense | 0.862 | 0.750 | 0.196 | 0.159 | 0.409 | 0.470 |
| *NPSR1* | ENST00000359791 | FNSSa | LoFd | 0.044 | 0.030 | 0.055 | 0.108 | 0.768 | 0.896 |
| Missense | 0.950 | 0.767 | 0.710 | 0.770 | 0.266 | 0.522 |
| *ADRB1* | ENST00000369295 | FNSSa | LoFd | NA | NA | NA | NA | NA | NA |
| Missense | 0.729 | 0.849 | 0.053 | 0.041 | 0.439 | 0.565 |
| *DEC2/ BHLHE41* | ENST00000242728 | FNSSa | LoFd | 0.052 | 0.053 | 0.482 | 0.478 | 0.780 | 0.926 |
| Missense | 0.865 | 0.722 | 0.330 | 0.311 | 0.171 | 0.559 |
| *CRY1* | ENST00000008527 | DSPDb | LoFd | 0.880 | 0.925 | 0.263 | 0.254 | 0.740 | 0.884 |
| Missense | 0.914 | 0.920 | 0.973 | 0.912 | 0.681 | 0.660 |
| *PER3* | ENST00000361923 | FASPc | LoFd | 0.622 | 0.590 | 0.943 | 0.883 | 0.447 | 0.625 |
| Missense | 0.481 | 0.517 | 0.220 | 0.192 | 0.222 | 0.235 |
| *PER2* | ENST00000254657 | FASPc | LoFd | 0.178 | 0.192 | 0.321 | 0.318 | 0.037 | 0.847 |
| Missense | 0.878 | 0.724 | 0.753 | 0.977 | 0.332 | 0.337 |
| *CRY2* | ENST00000443527 | FASPc | LoFd | NA | NA | NA | NA | NA | NA |
| Missense | 0.575 | 0.687 | 0.954 | 0.811 | 0.506 | 0.514 |
| *TIMELESS* | ENST00000553532 | FASPc | LoFd | 0.001 | 8.4E-04 | 0.438 | 0.341 | 0.376 | 0.752 |
| Missense | 0.974 | 0.779 | 0.355 | 0.198 | 0.266 | 0.512 |
| *CSNK1D* | ENST00000314028 | FASPc | LoFd | 0.946 | 0.931 | 0.729 | 0.709 | 0.868 | 0.918 |
| Missense | 0.364 | 0.368 | 0.309 | 0.286 | 0.456 | 0.646 |

aFNSS=familial natural short sleep; bDSP=delayed sleep phase disorder; cFASP=familial advanced sleep phase; dLoF=loss-of-function; eSleep duration analysed on original unit scale; fSleep duration inverse-normalised prior to analysis.