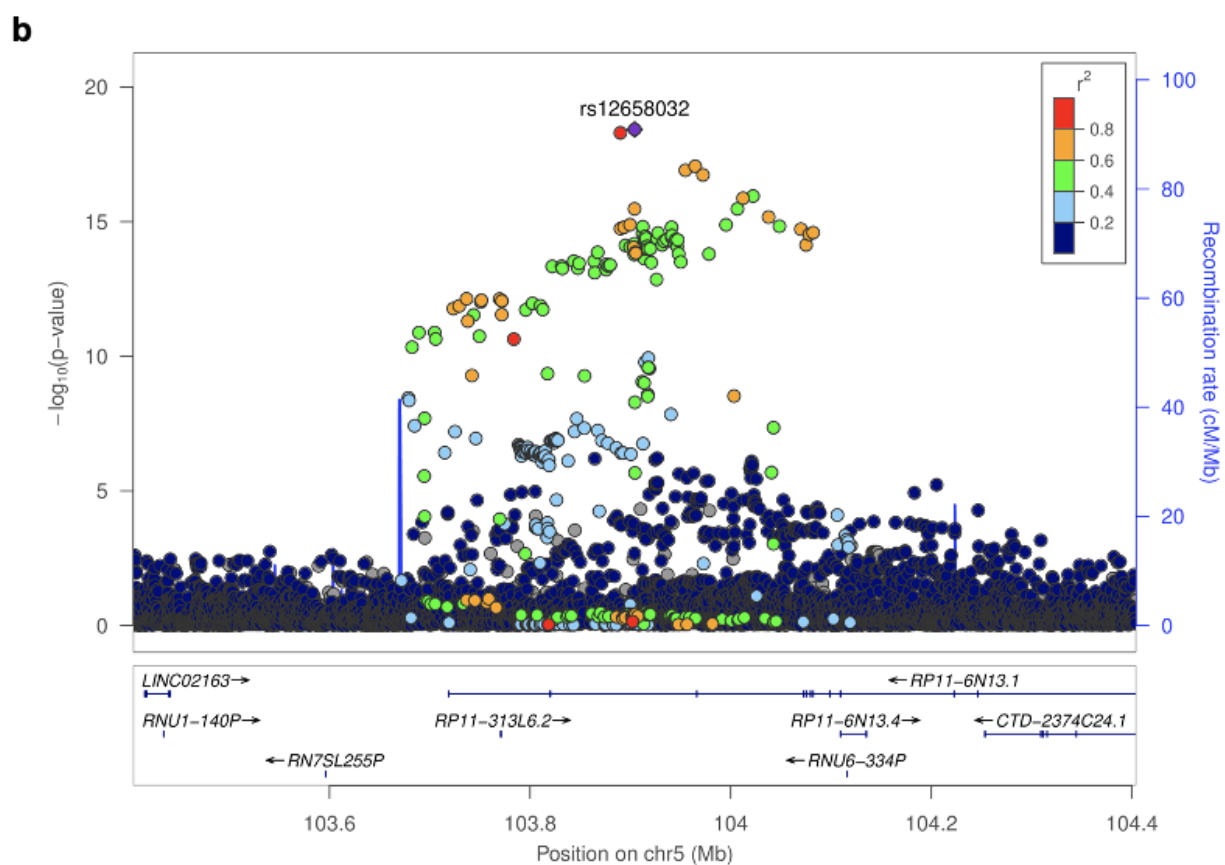
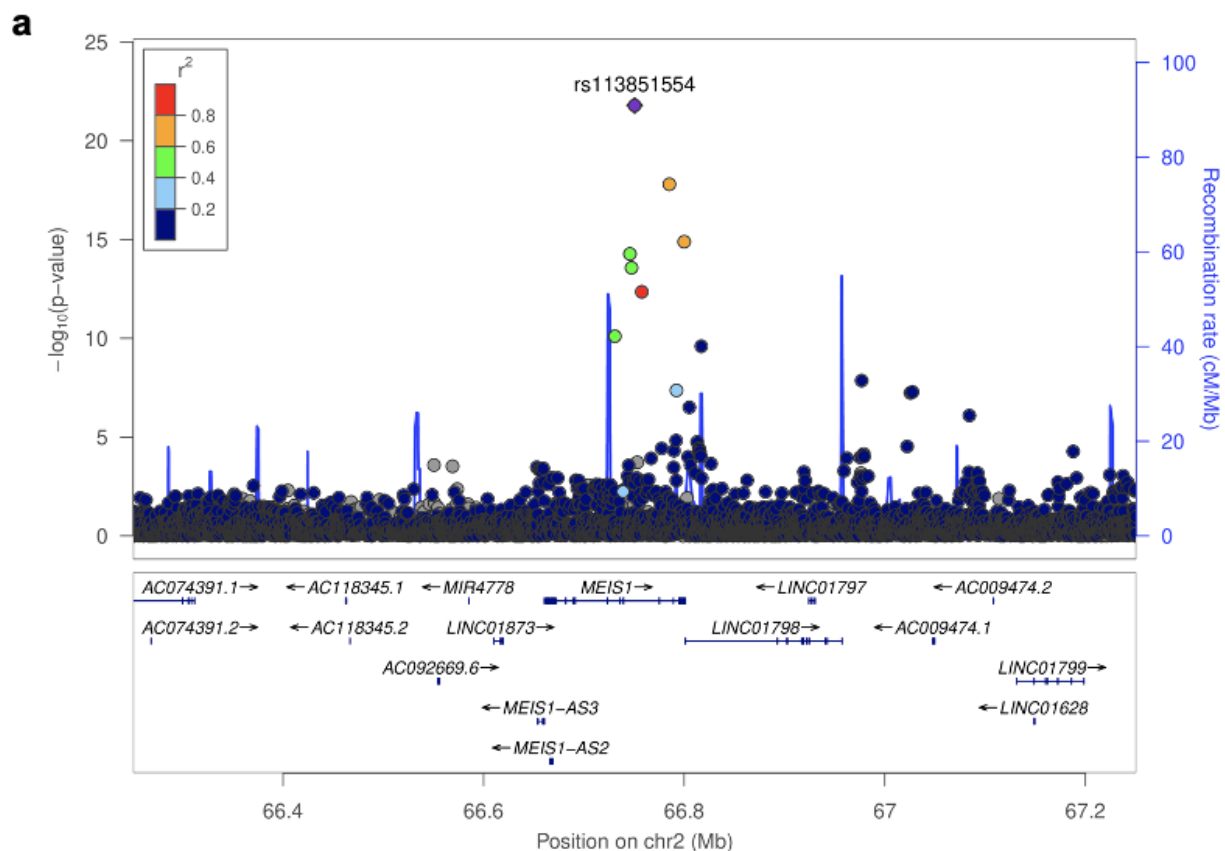
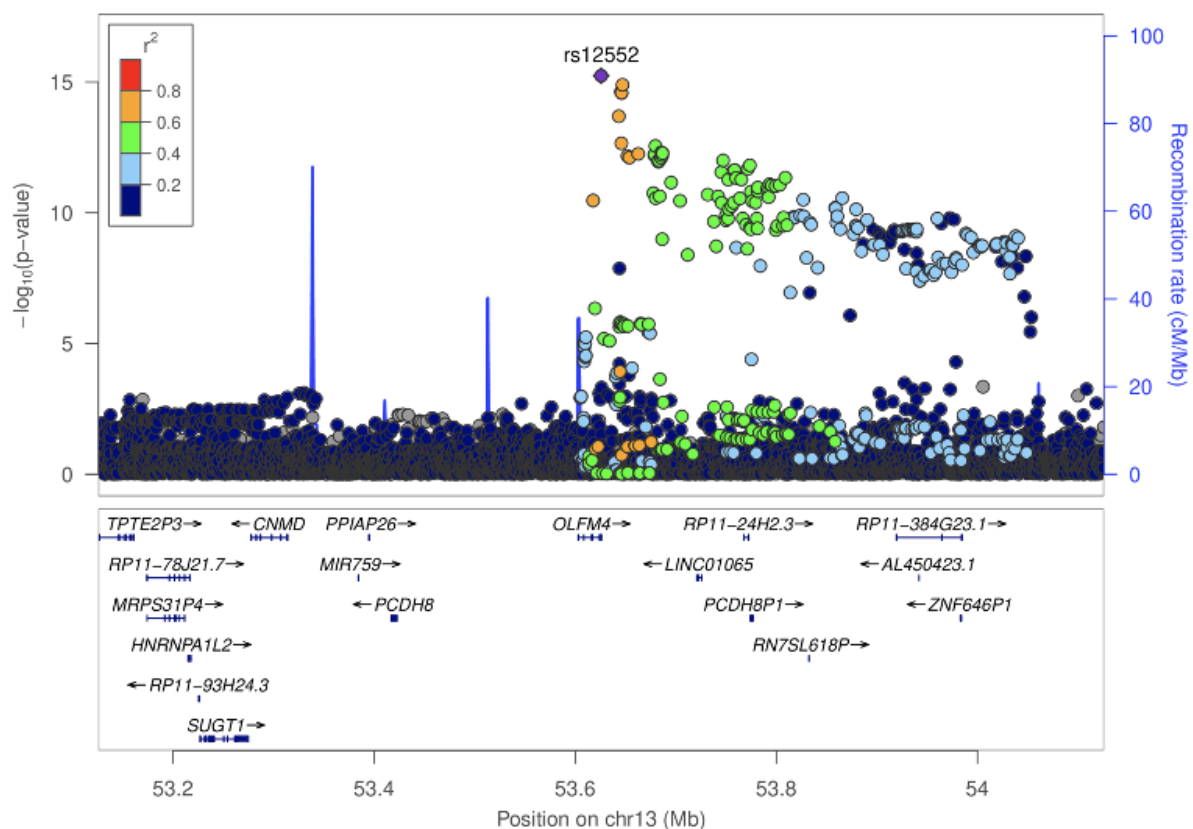
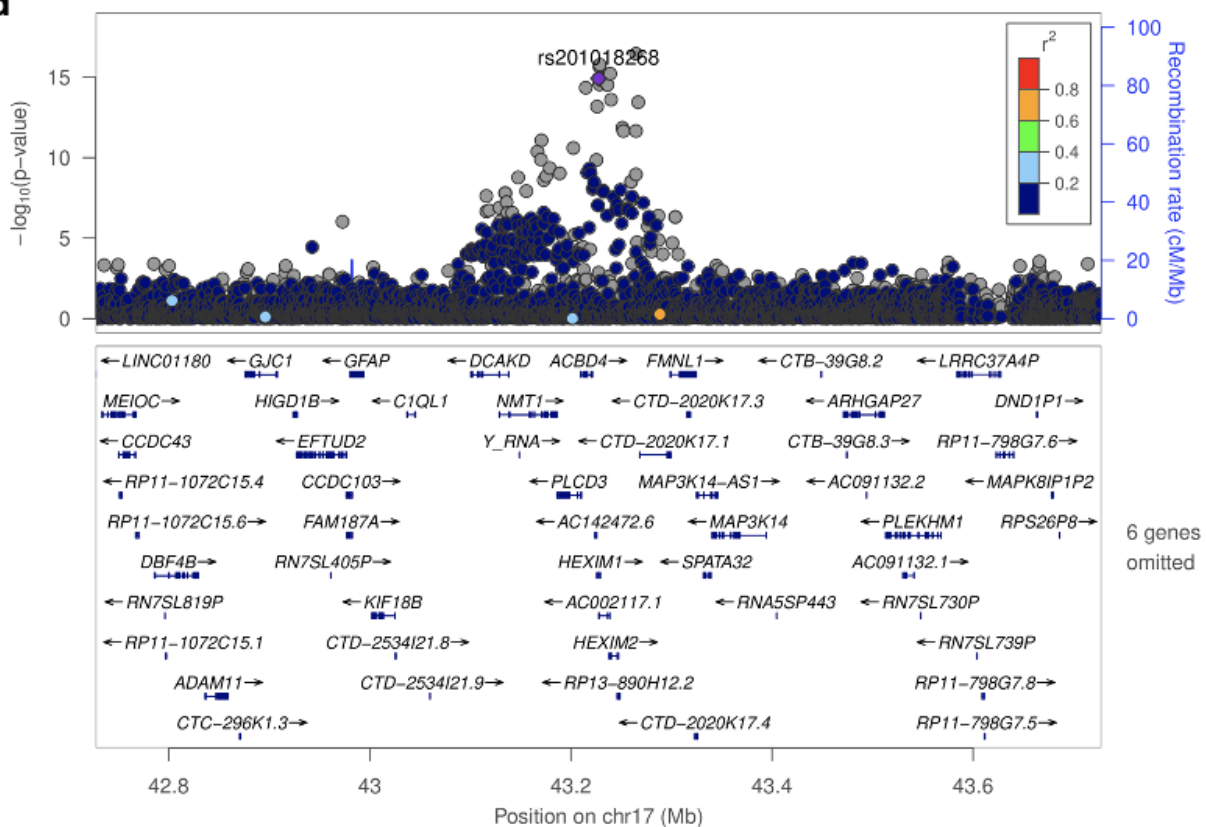
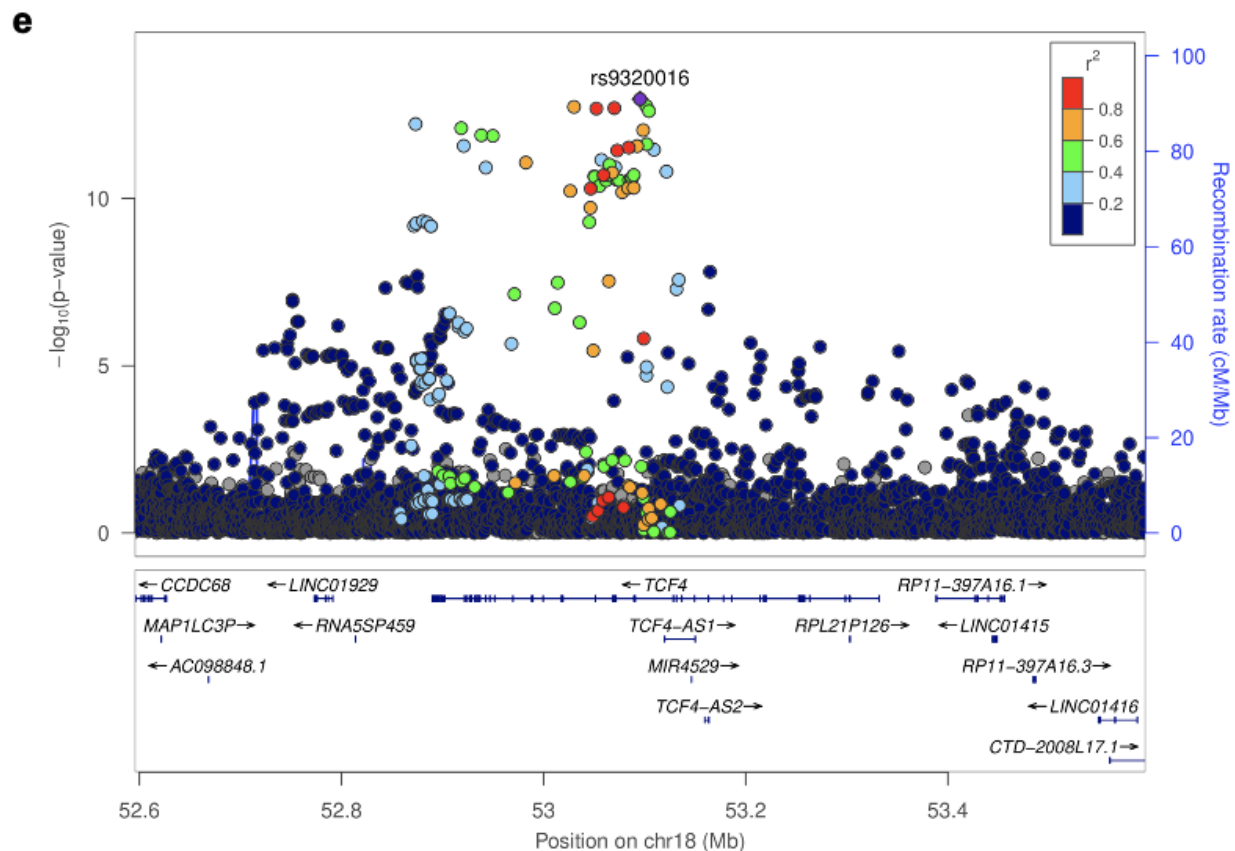


**Fig. S1. Manhattan plot and Q-Q plot of MDD and insomnia.**

Manhattan plot shows the associated SNPs of **a.** MDD and **b.** insomnia from the GWAS summary statistics from Wray et al. and Lane et al., respectively. The red dashed line indicates the genome-wide significance threshold at  $P = 5e-8$ . **c.** Q-Q plot of the meta-analysis of MDD and insomnia. Q-Q plot of MDD is shown in **d**, and that of insomnia is shown in **e**.

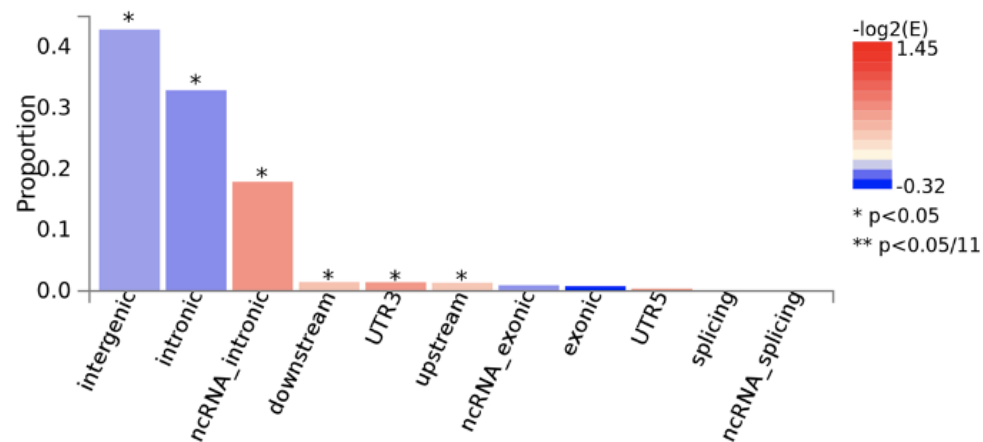


**c****d**



**Fig. S2. Regional association plots of the top 5 variants.** Regional association of **a.** rs113851554, **b.** rs12658032, **c.** rs12552, **d.** rs201018268 and **e.** rs9320016 are shown.





**Fig. S4. Functional consequences of SNPs on genes in positional mapping.** The horizontal axis indicates different functional consequences. The vertical axis shows the proportion. Colors code enrichment level and direction. Stars represent significance at  $P < 0.05$ .