

**ESM Figure 4.** Forrest plot showing deviation from additivity effects for 72 published BMI SNPs (aligned to the BMI increasing allele under an additive model). Overall  $P$ -value = 0.016 for testing whether BMI increasing alleles are more likely to have non-additive effects with the inclusion of *FTO*. Overall  $P$ -value without *FTO* = 0.072.

