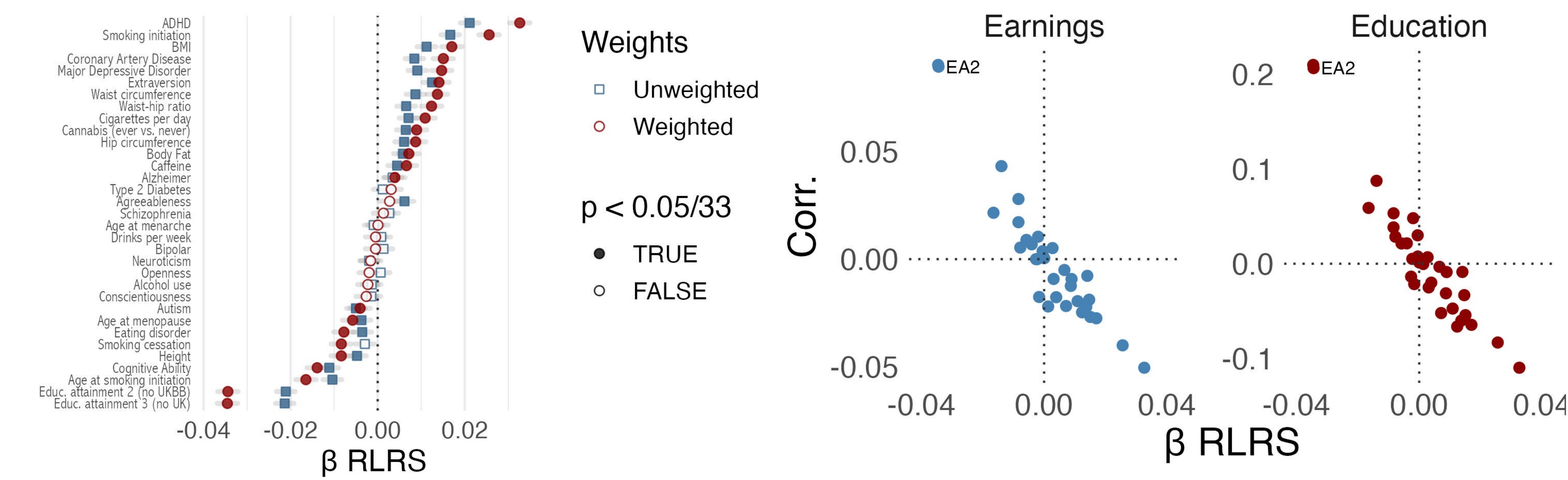


# Human capital mediates natural selection in contemporary humans

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## Polygenic scores predicting lower earnings and education are being selected for



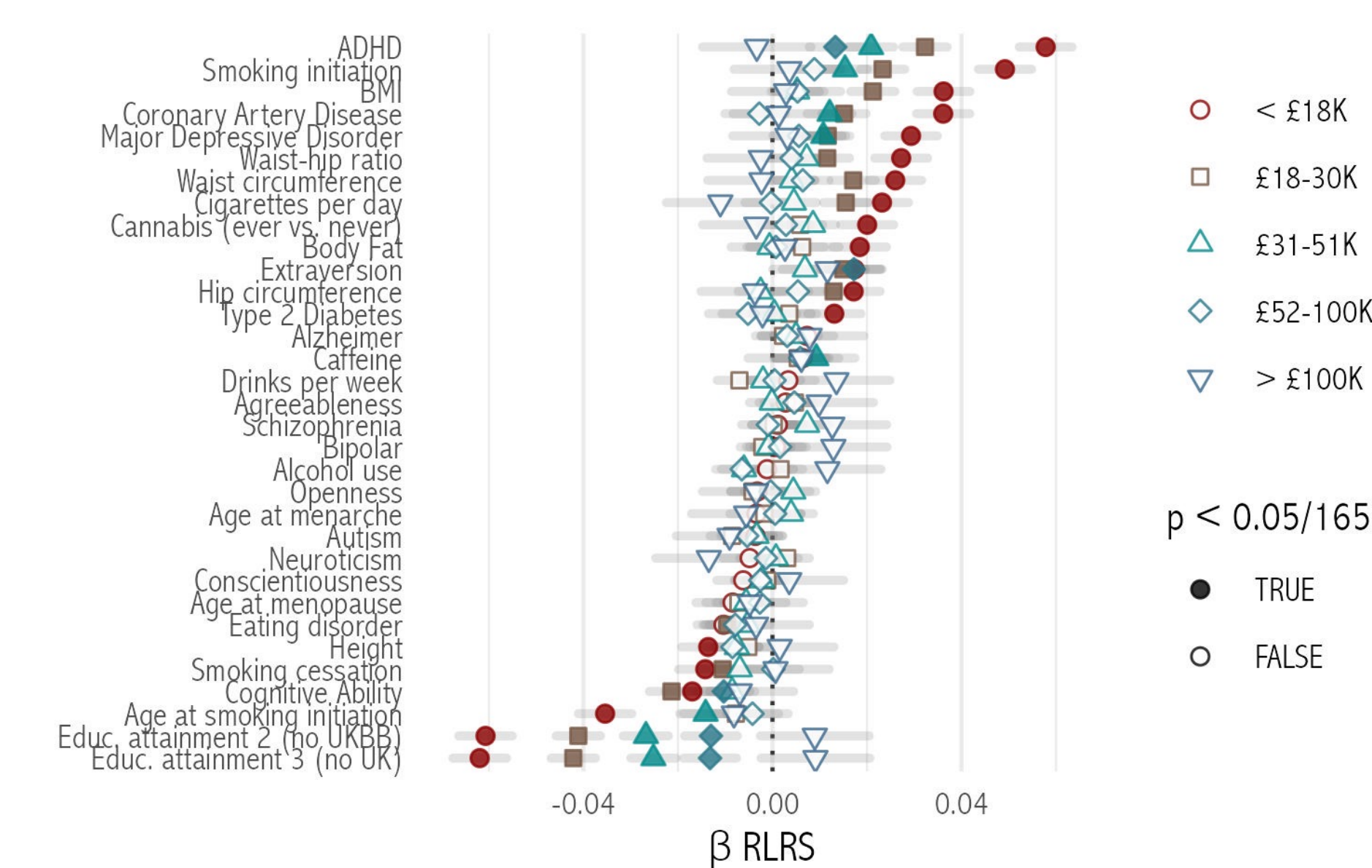
Among UK Biobank respondents with completed fertility, we correlate 33 polygenic scores with relative lifetime reproductive success (RLRS).

Effect sizes are highly correlated across two generations, using number of siblings to calculate parents' RLRS.

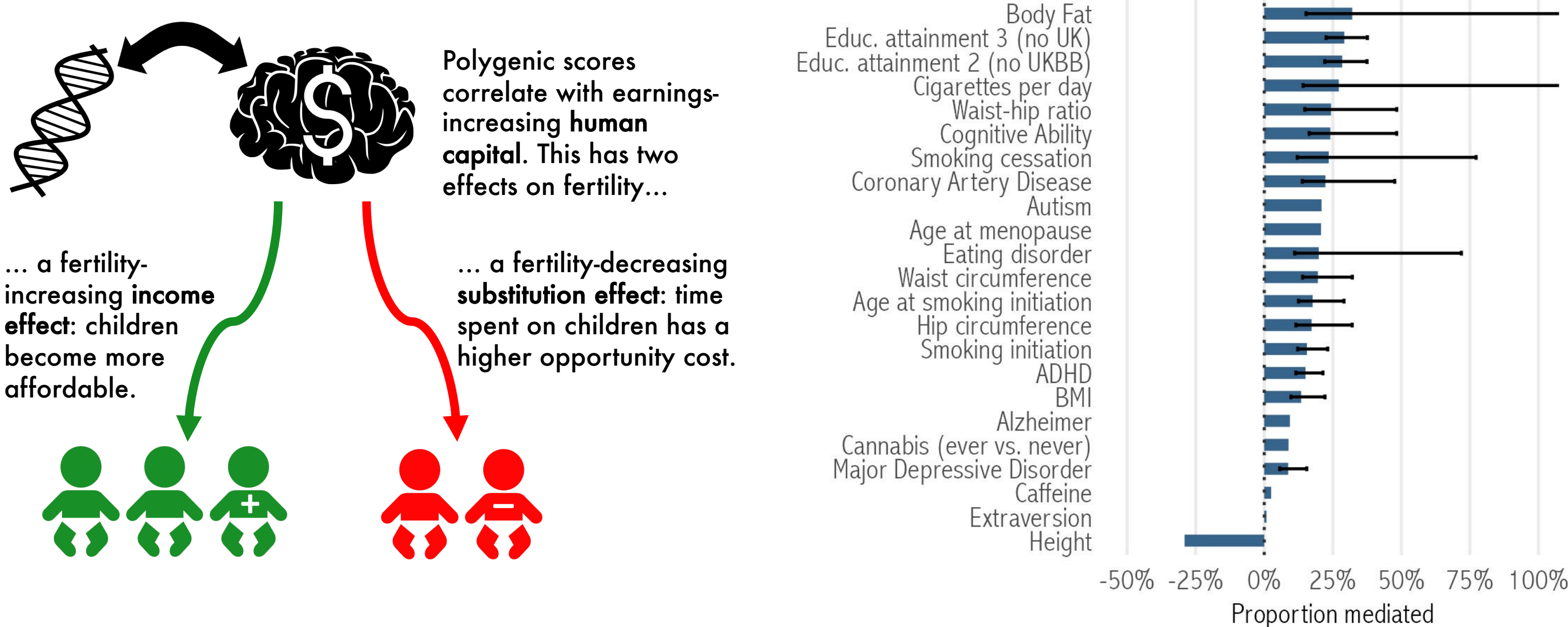
Population weighting (Van Alten et al. 2022) increases effect sizes.

## Effects vary by...

Income *also education*

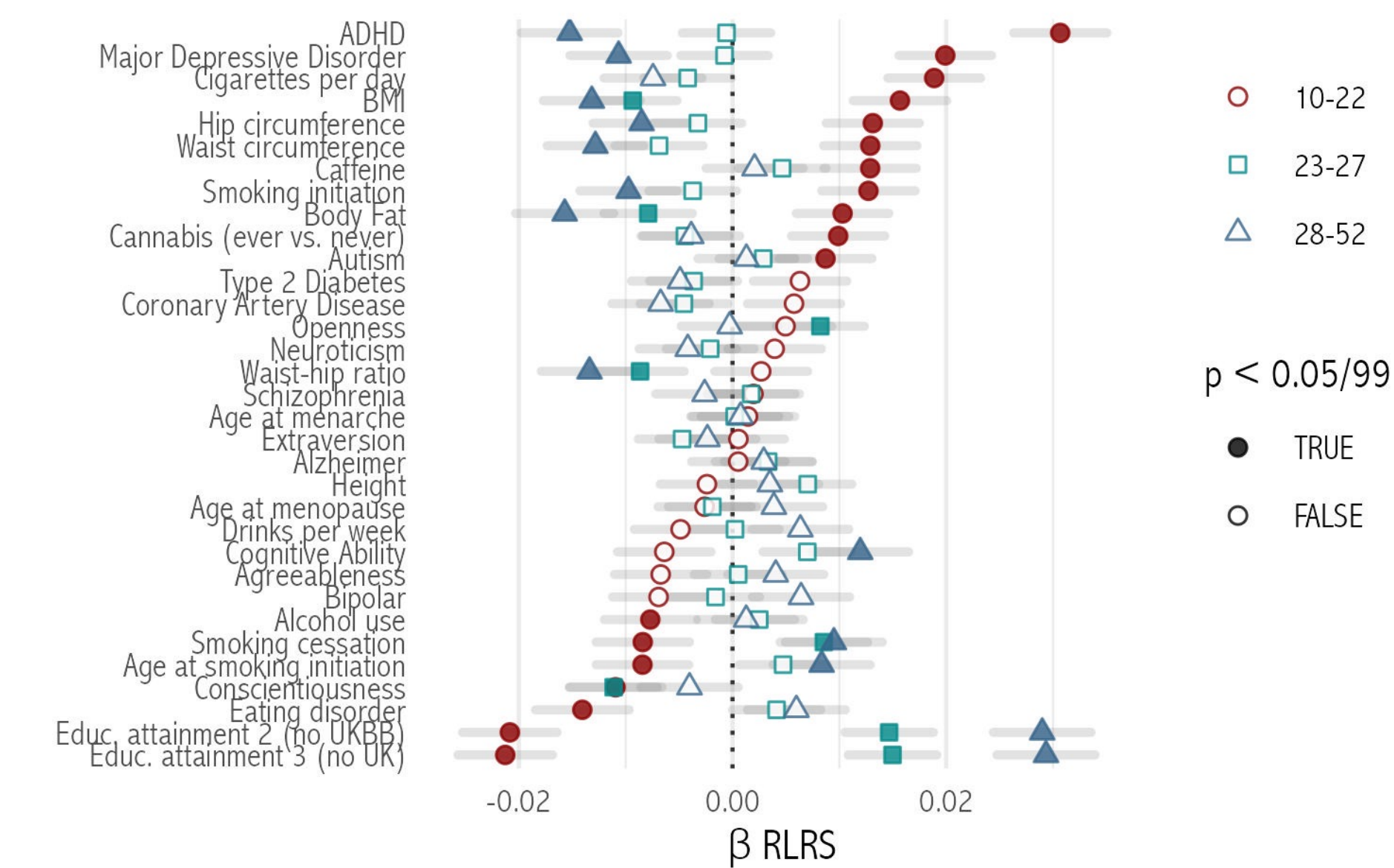


## Economic theory of fertility can explain these results



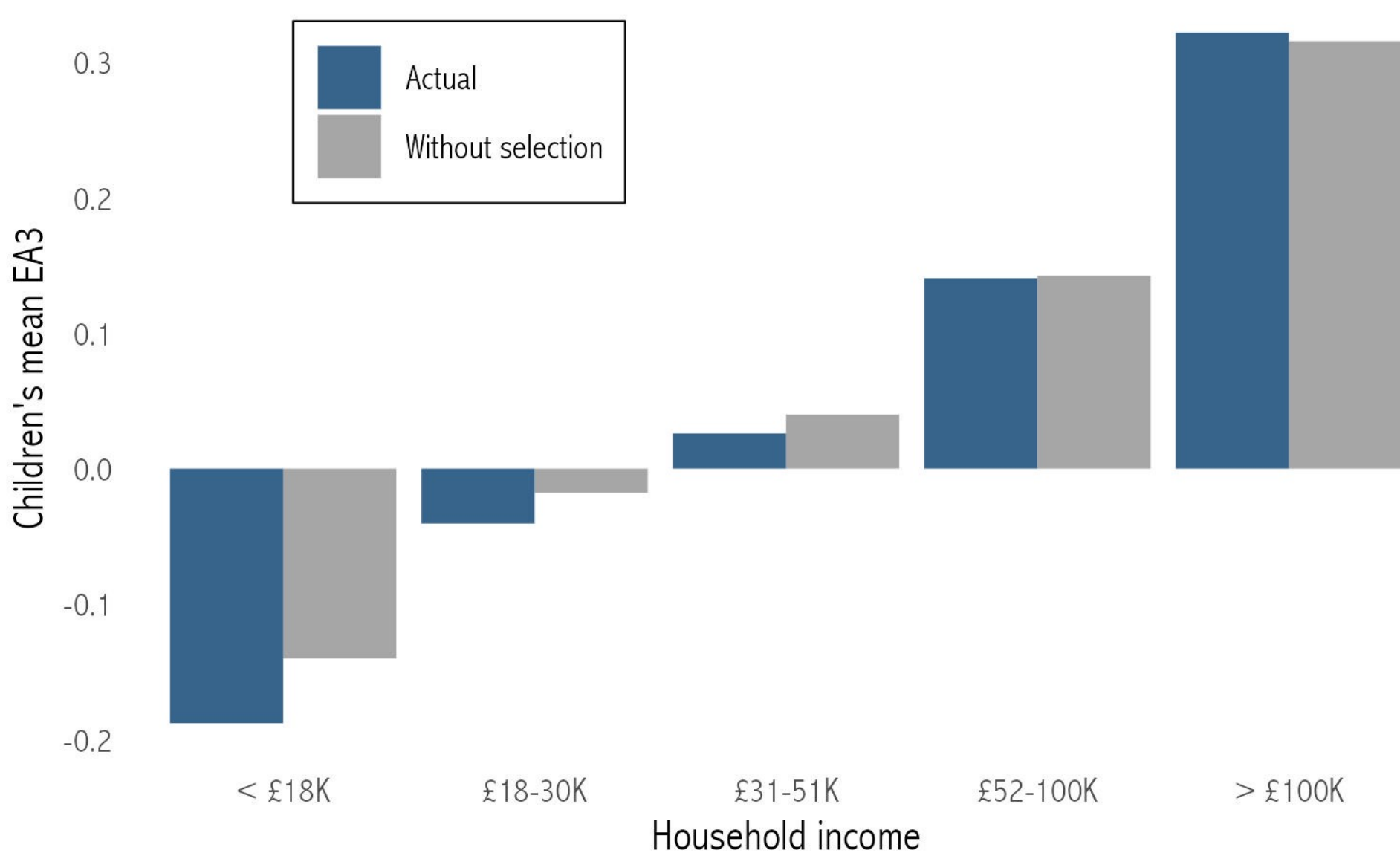
This model can explain the patterns in our data, if the substitution effect is stronger at lower income levels. A mediation analysis shows that education significantly mediates the link between polygenic scores and fertility for 18/23 scores where there is a significant link.

## Age at first live birth (women)



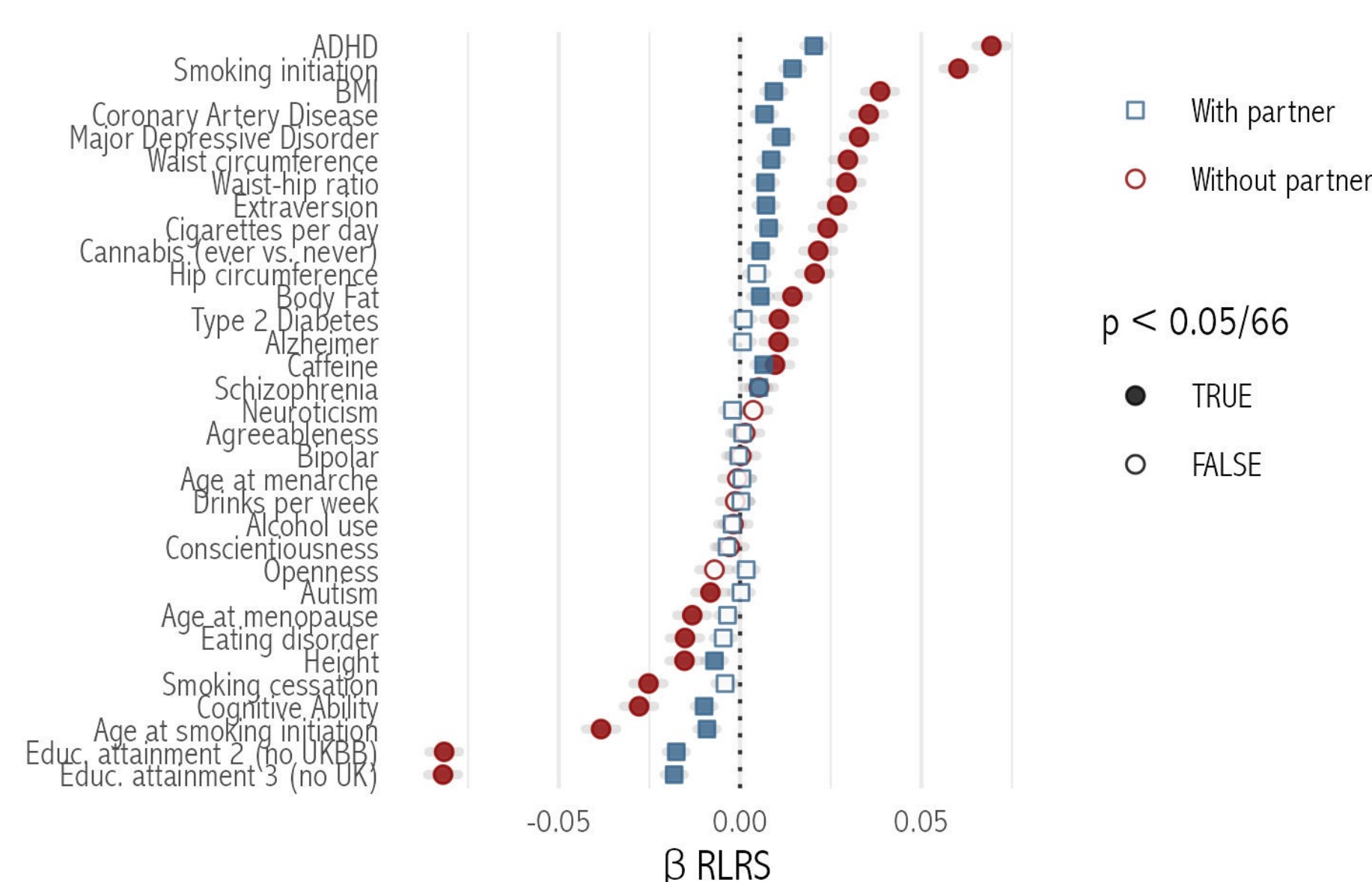
## Natural selection increases genetic inequality across income groups

Selection against earnings-increasing variants is stronger at lower incomes. This increases inequality between income groups, and the unfairness of the "genetic lottery" (Harden 2021). Natural selection increases the correlation of polygenic scores with income for 28 out of 33 scores, with a median increase of 16.43%.



## Living with a partner

*also number of lifetime partners*



### Acknowledgements

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