

## Supplementary Table S1. Sensitivity analysis matrix for the stroke × education interaction

Rows summarize prespecified sensitivity analyses. Columns report the interaction test p-value, the direction of the stroke×high-education interaction (relative to low education), and an overall qualitative conclusion. P-values are formatted to three decimals.

Analysis	Interaction p	High-group direction	Conclusion
Threshold (≤2)	0.612 (LRT)	High interaction OR 1.13 (0.65–1.96)	Attenuated (interaction NS), direction consistent
Threshold (≤3) [Primary]	0.049 (LRT)	High interaction OR 1.67 (1.11–2.52)	Consistent (primary evidence)
Threshold (≤4)	0.398 (LRT)	High interaction OR 1.33 (0.87–2.03)	Attenuated (interaction NS), direction consistent
Complete-case	0.015* (Wald)	High interaction OR 2.85 (1.23–6.64)	Consistent (direction and magnitude support effect modification)
Multiple imputation (MI)	0.012* (Wald)	High interaction OR 1.68 (1.12–2.53)	Consistent (direction preserved; interaction term significant)
Modified Poisson (RR)	0.154 (LRT)	High interaction RR 1.38 (1.07–1.77)	Attenuated (overall interaction NS), direction consistent
Age ≥65 subgroup	0.289 (LRT)	High: RD 0.102 (-0.085–0.305); predicted-probability plot in FigS2	Attenuated (interaction NS), direction broadly consistent
Ordinal logit (POLR)	0.182 (LRT)	High interaction OR 1.397 (0.962–2.028)	Attenuated (trend only), direction consistent
Quasi-Poisson errors	0.249 (joint Wald)	High interaction RR 1.197 (0.969–1.480)	Attenuated (trend only), direction consistent
Negative binomial errors	0.223 (LRT)	High interaction RR 1.199 (0.969–1.485)	Attenuated (trend only), direction consistent

Notes: Interaction p refers to the overall stroke×education test (2-df LRT) unless marked with \* (then it refers to the Wald p-value for the stroke×High interaction term because an overall LRT was not exported). High-group direction is summarized by the stroke×High interaction estimate (>1 indicates a stronger stroke association in the High education group). Abbreviations: MI, multiple imputation; RR, risk ratio; QP, quasi-Poisson; NB, negative binomial; RD, risk difference.