

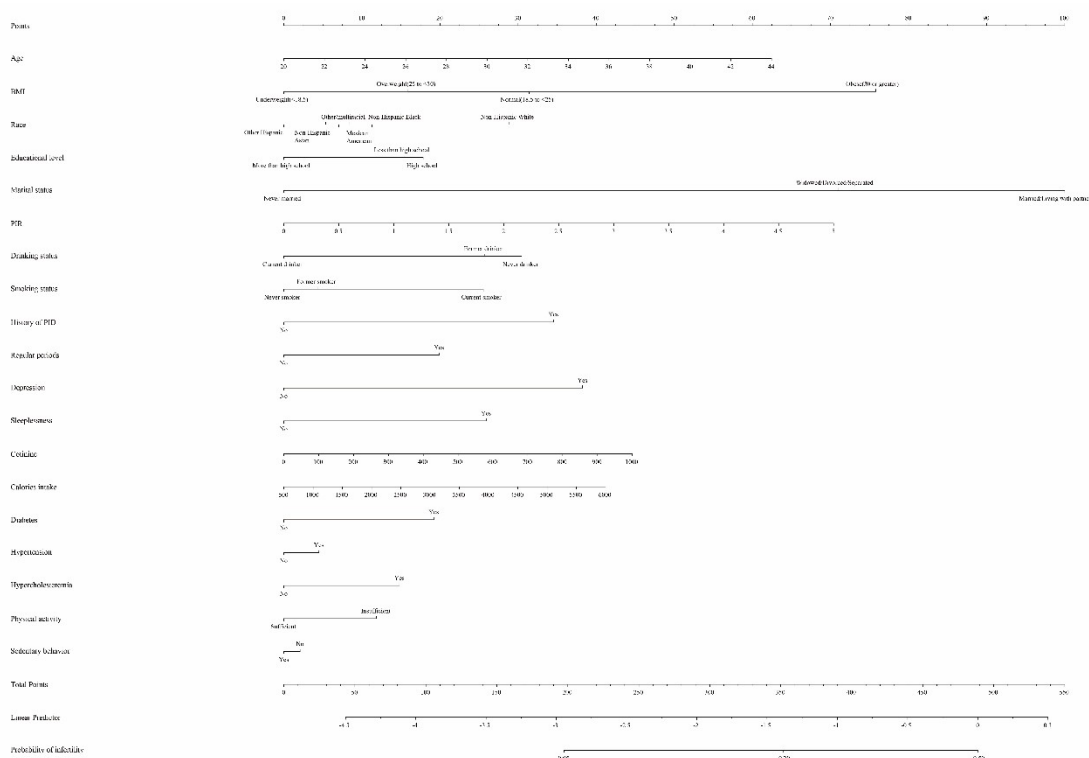


Figure S1. Nomogram of the effect of covariates on the risk of infertility. Nomogram diagram used to predict the risk of female infertility, evaluating Age, Body mass index (BMI), Race, Educational level, Marital status, Poverty income ratio (PIR), Drinking status, Smoking status, history of pelvic inflammatory disease (PID), Regular periods, Depression, Sleeplessness, Cotinine, Calories intake, Diabetes, Hypertension, Hypercholesterolemia, Physical activity and Sedentary behavior as risk factors. Each predictor has a score, and the total score of these factors may indicate a woman's risk of infertility.

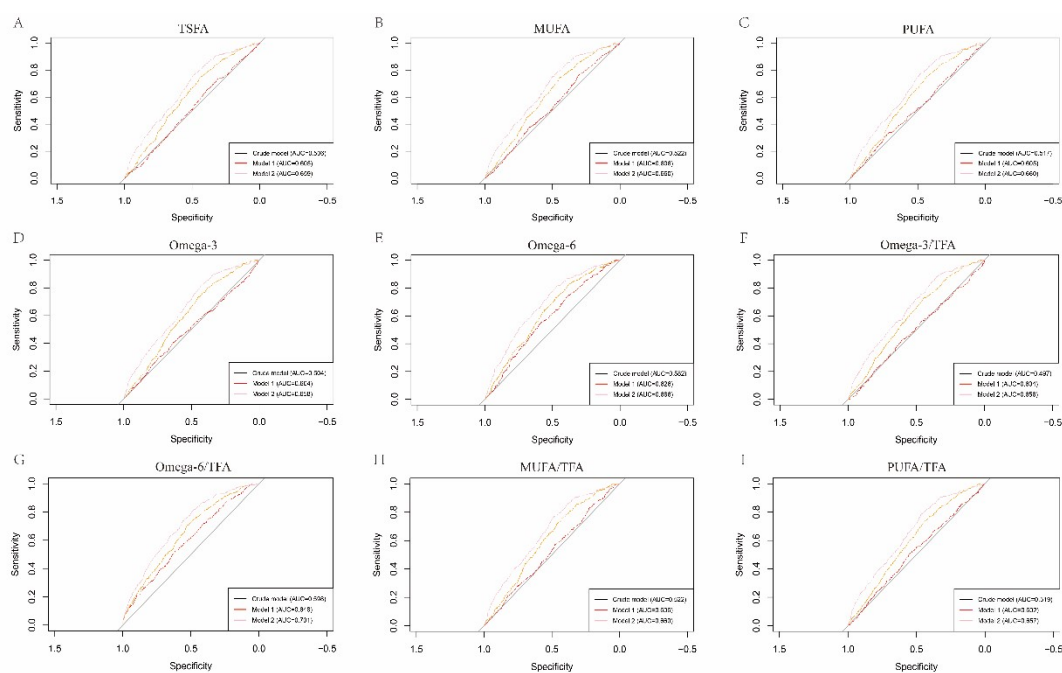


Figure S2. Evaluation of the prediction ability of models based on ROC curve. The receiver operating characteristic (ROC) curve showed the area under the ROC curve (AUC) of crude model, model 1 and model 2, suggesting that the prediction ability of the model was robust. (A) TSFAs; (B) MUFAs; (C) PUFAs; (D) omega-3; (E) omega-6; (F) omega-3/TFA; (G) omega-6/TFA; (H) MUFA/TFA; (I) PUFA/TFA. TSFAs: total saturated fatty acids; MUFAs: monounsaturated fatty acids; PUFAs: polyunsaturated fatty acids; TFA: total fatty acids.

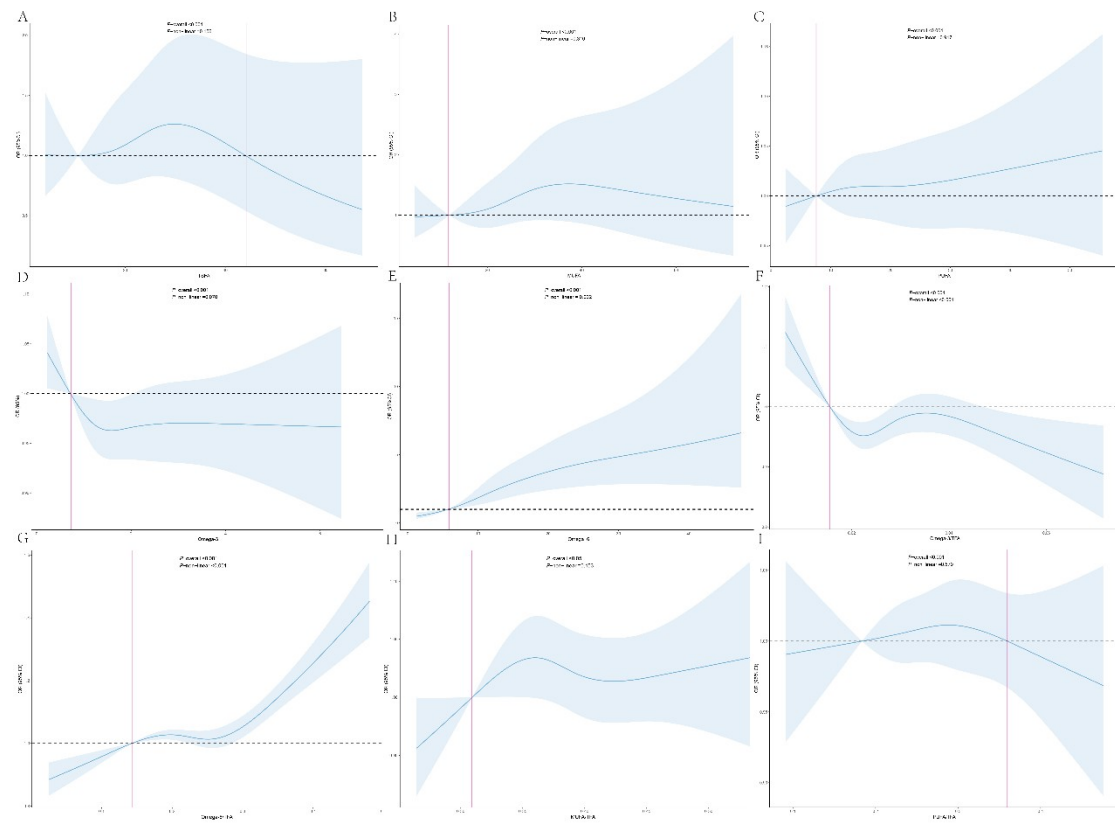


Figure S3. Dose response analysis of various FAs intake and the risk of infertility through restricted cubic splines (RCS). (A) TSFAs; (B) MUFAs; (C) PUFAs; (D) omega-3; (E) omega-6; (F) omega-3/TFA; (G) omega-6/TFA; (H) MUFA/TFA; (I) PUFA/TFA.

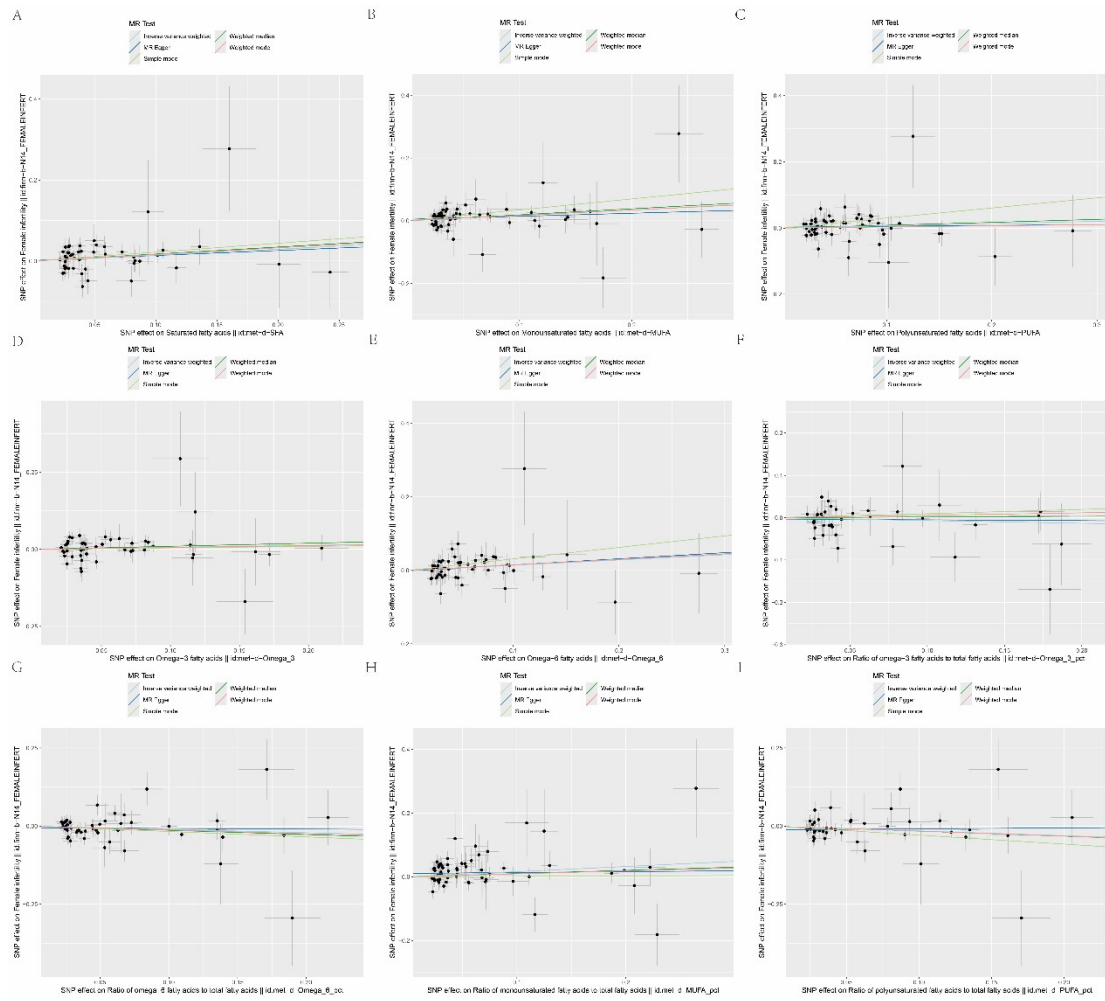


Figure S4. The scatter plot in the two-sample MR analysis of FAs intake for female infertility.

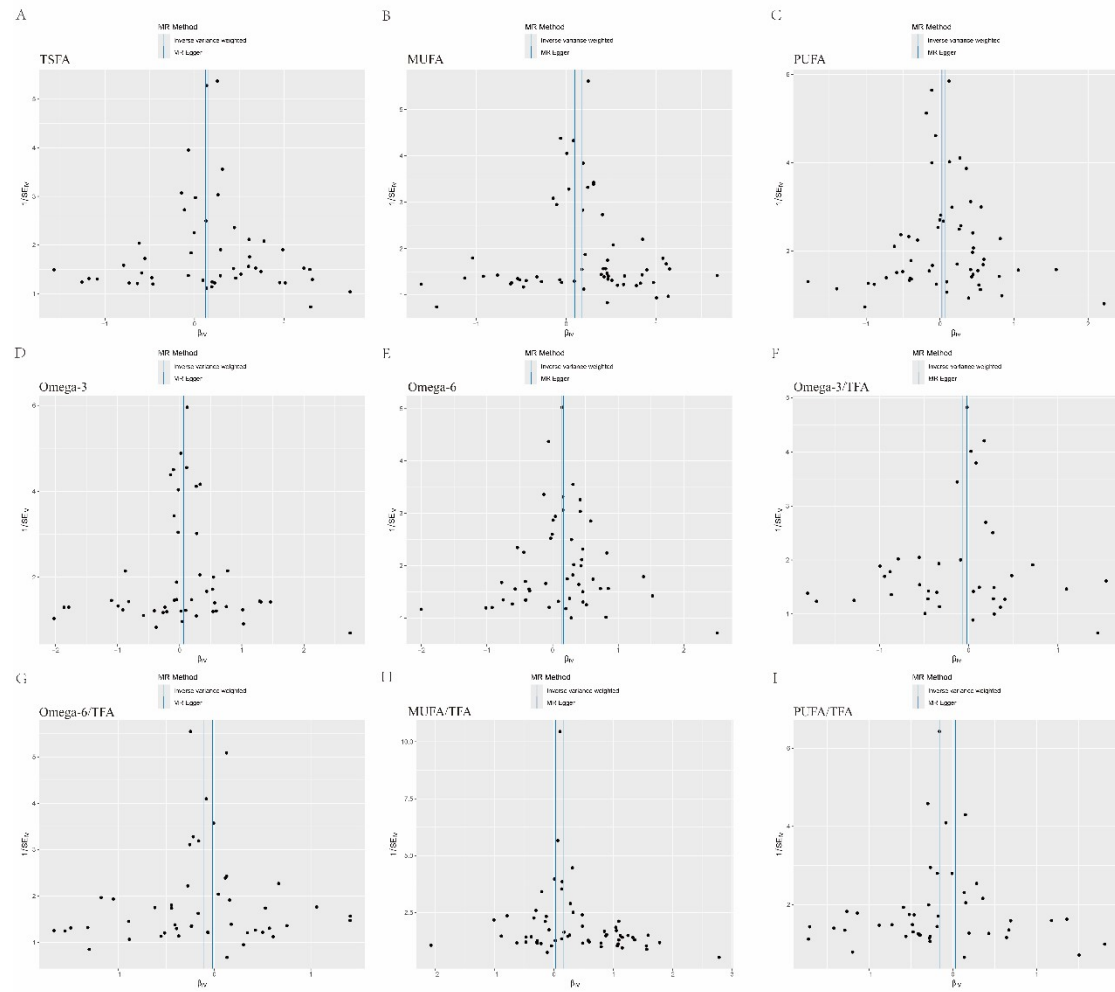


Figure S5. The funnel plot in the two-sample MR analysis of FAs intake for female infertility.

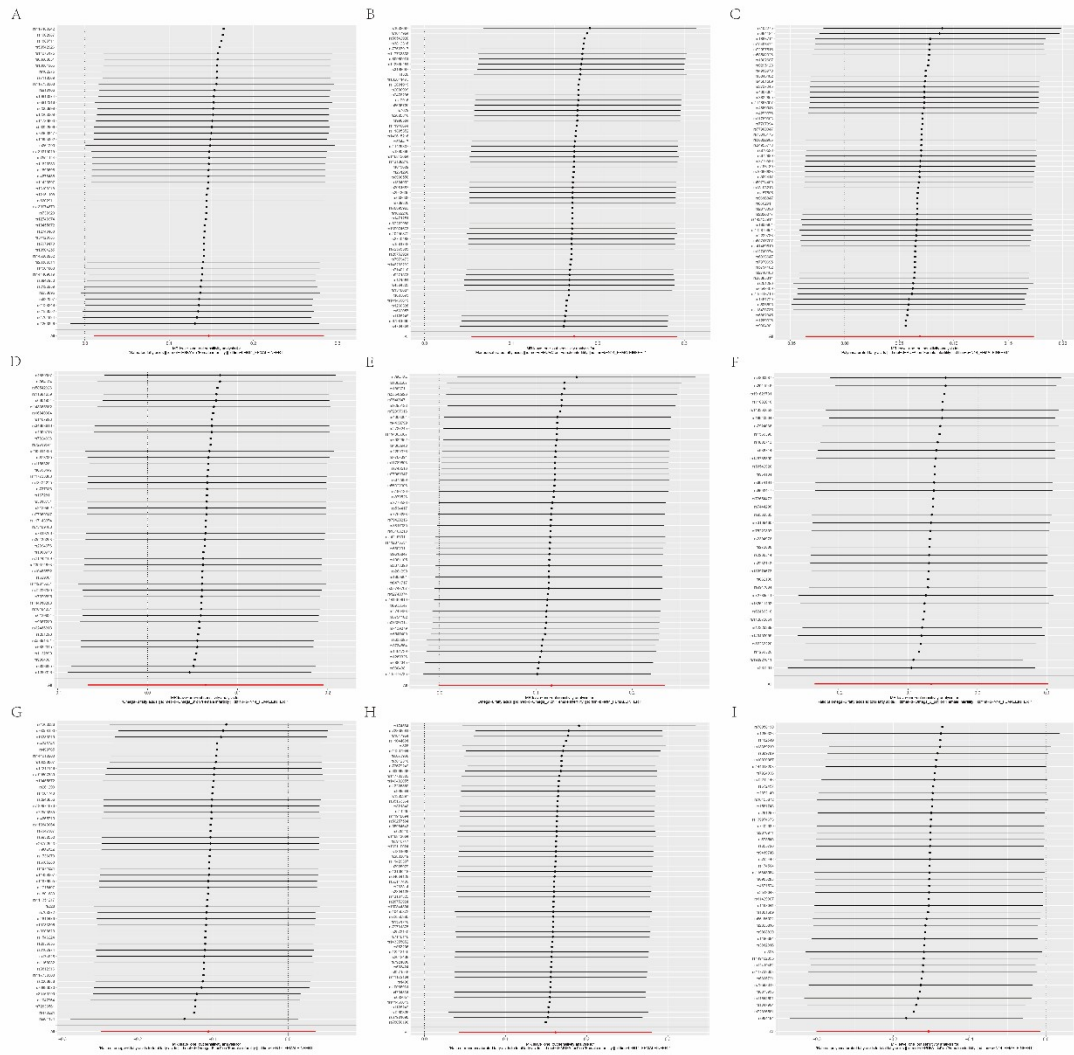


Figure S6. The leave-one analysis in the two-sample MR analysis of FAs intake for female infertility showed that no SNP had a significant effect on the outcome.

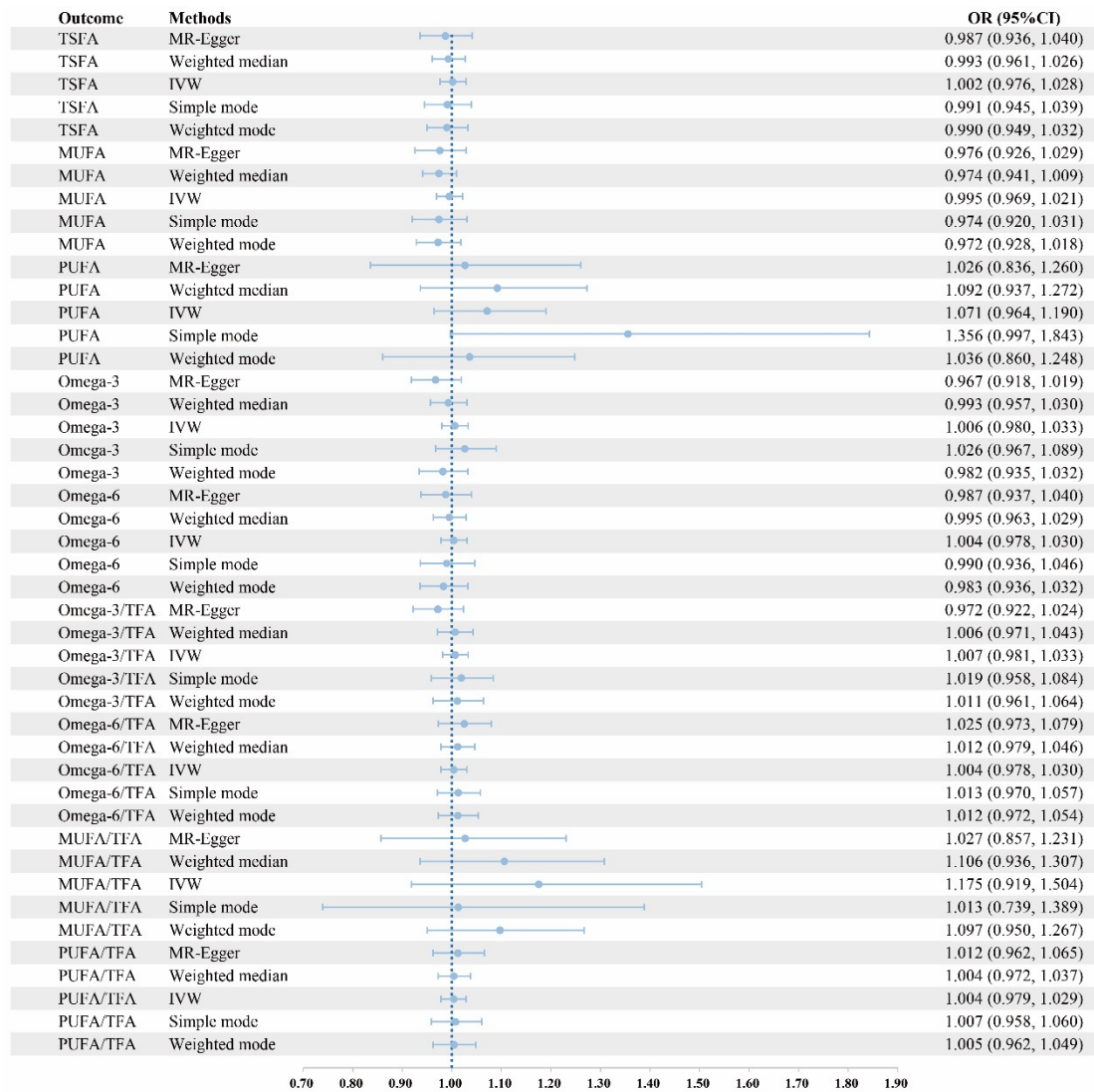


Figure S7. Reverse MR analysis. The exposure is female infertility and the outcome is FAs intake. The blue color represents no causal association between exposure and the outcome.