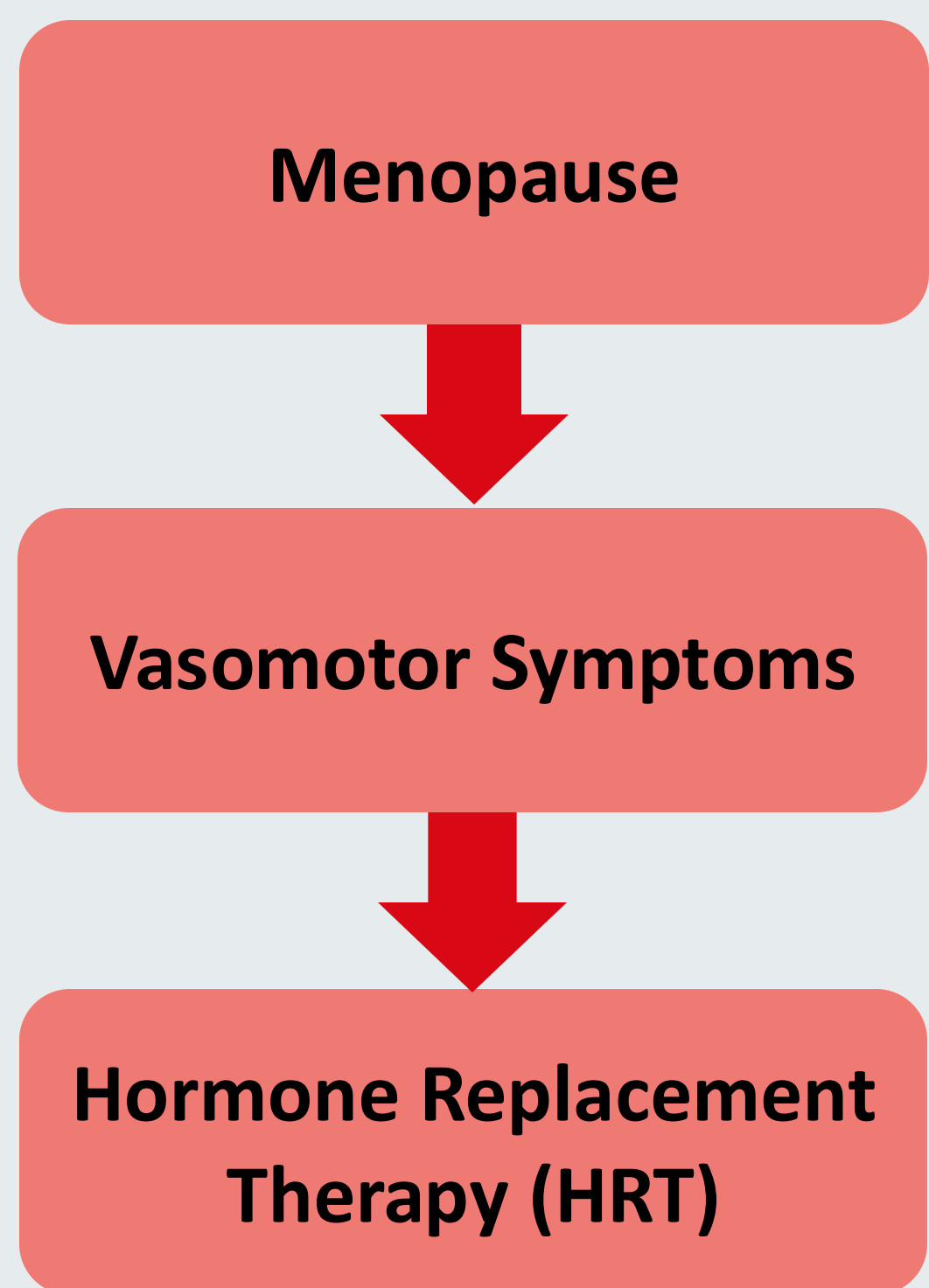


Factors shared by monozygotic twins explain unexpected associations between frailty and menopausal hormone replacement therapy use.



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Methods:

We analysed women in the Danish population registry (n=471206), Danish Twin Registry and TwinsUK cohort (n=1547).

In Denmark, we assessed frailty age 65, 70 and 75, using a modified Hospital Frailty Risk Score. This linked to national prescribing data, to ascertain HRT use by age 55, adjusting for birth year, education and income.

In TwinsUK, we assessed frailty after age 65 using a frailty index (TwinFI) by HRT use, adjusting for covariates (BMI, smoking, alcohol use, education and deprivation).

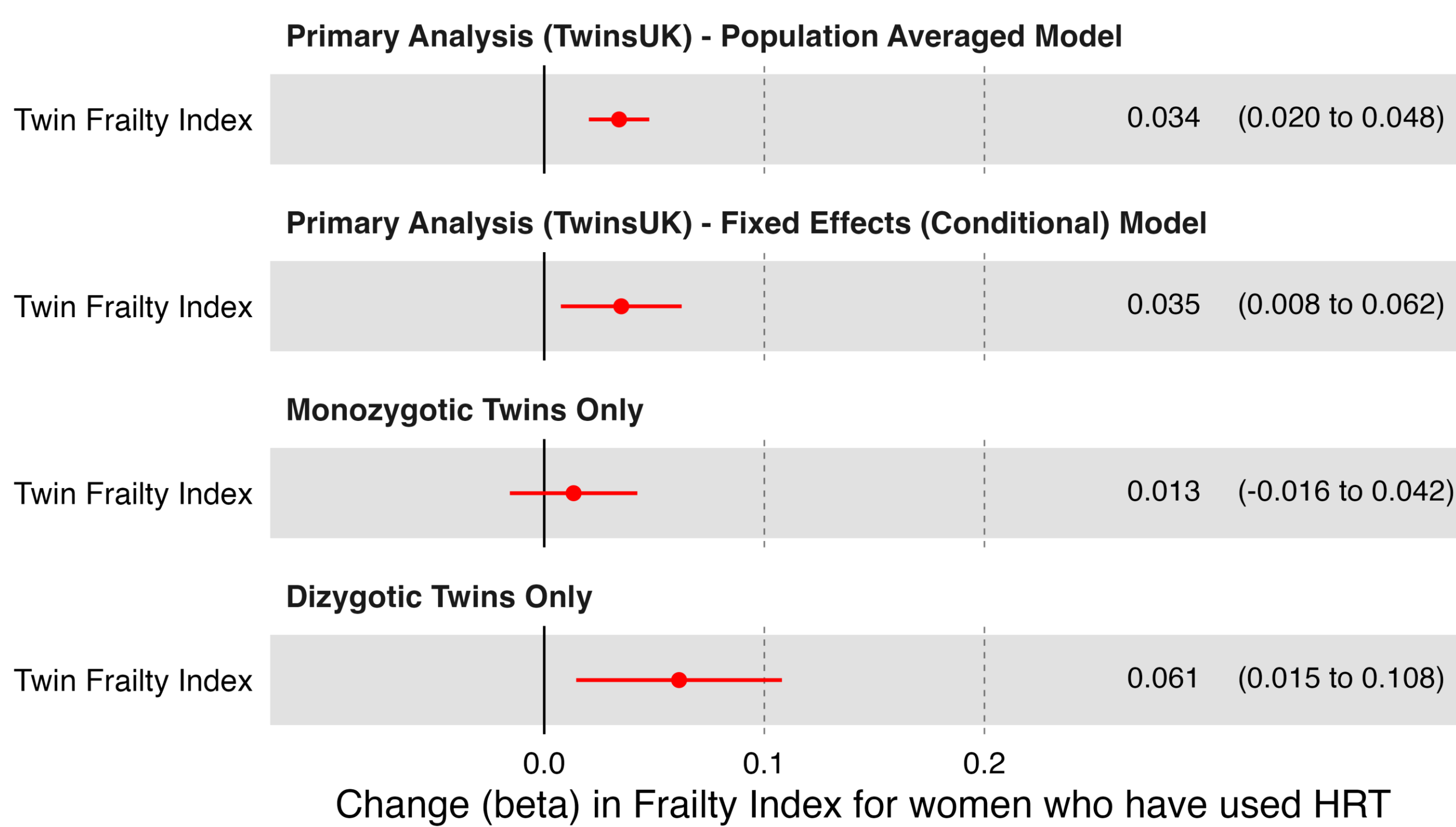
Analysis used conditional/fixed-effects generalised estimating equations, examining within twin-pair frailty associations.

Known Associations of HRT

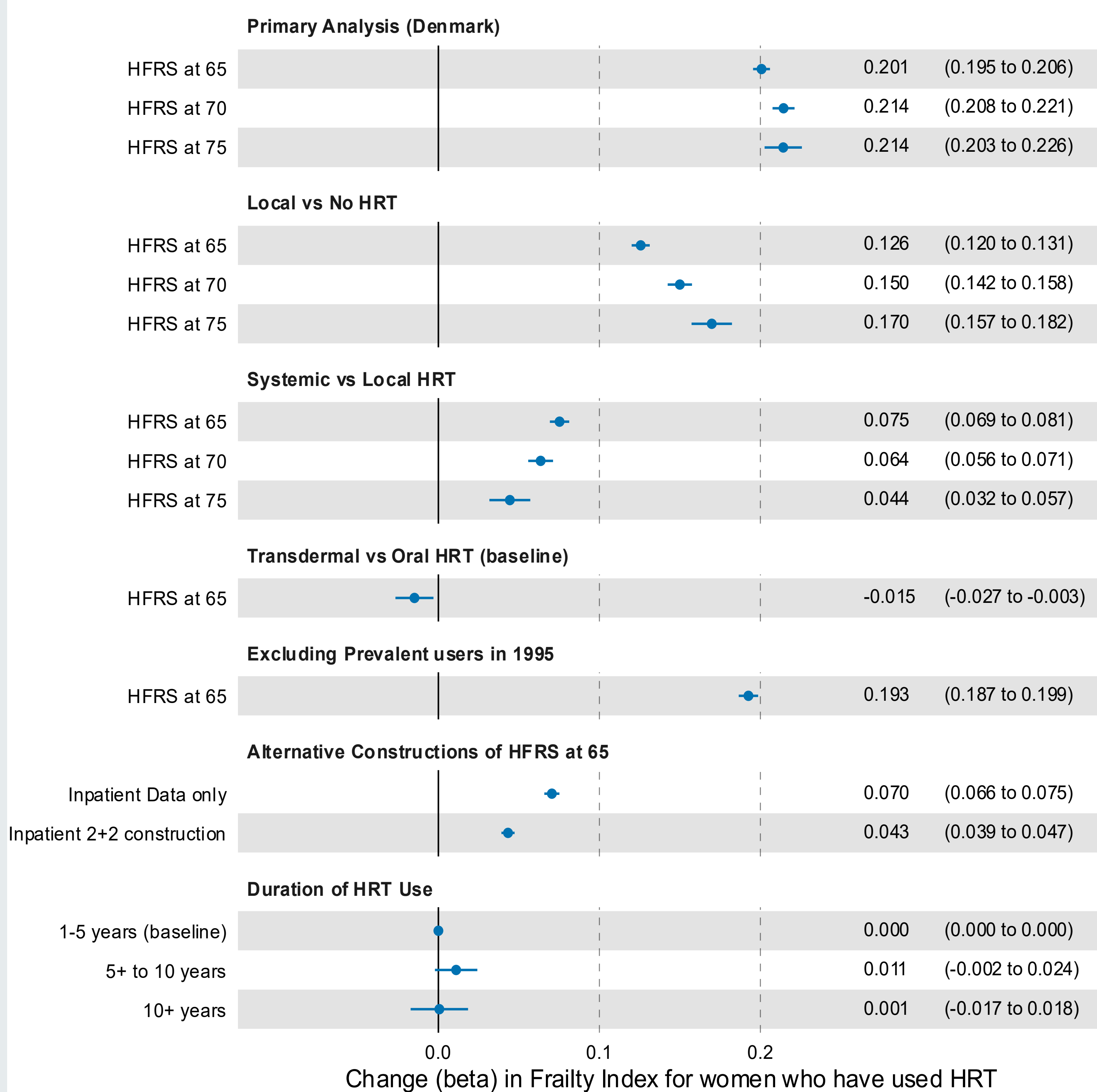
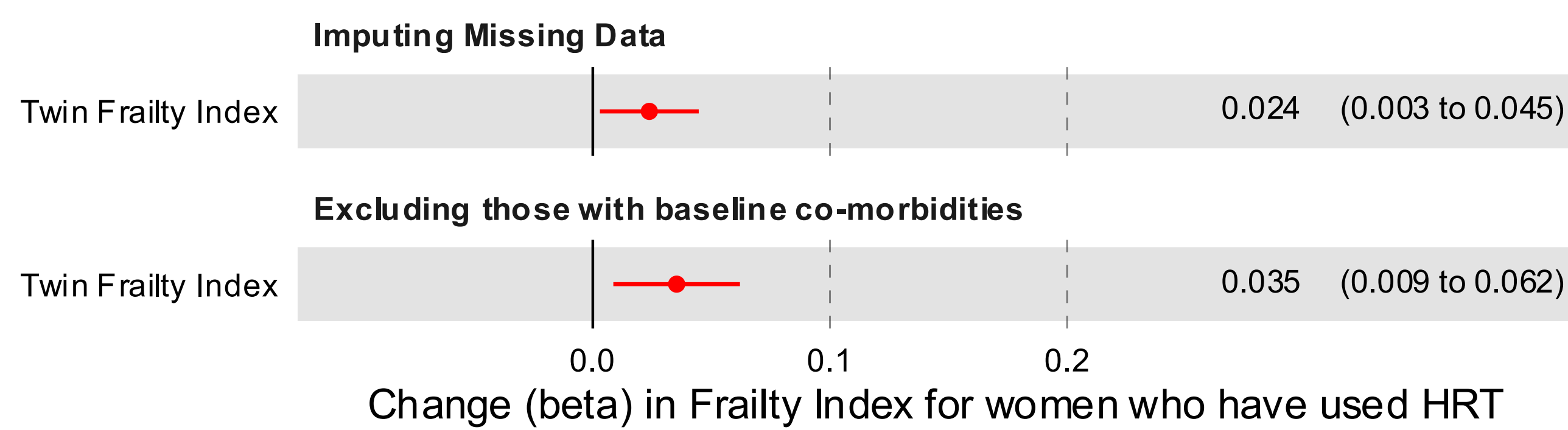
- Relief of Vasomotor symptoms
- Improvement in mood
- Reduced osteoporosis
- Possibly, reduced Cardiovascular Disease?

Unknown: Frailty?

Results



Past use of HRT associated with greater frailty later in life, but only in dizygotic twins – not monozygotic - suggesting confounding



In both Denmark and the UK, the greater degree of frailty was equivalent to 3-5 years greater chronological age

Conclusions

The use of HRT in the perimenopause is non-causally associated with higher frailty in later life

Factors shared between Monozygotic twins, including genetics, may predispose to both HRT use and frailty, explaining this association.

This was robust to different methods of frailty assessment and in different settings

HRT clinics may be an earlier place to identify women at higher risk of frailty later in life



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