How monozygotic twins explain unexpected associations between frailty, and the use of menopausal hormone replacement therapy.

Marc F Österdahl (1) Matthew T Keys (2) Carly Welch (1) Janice Rymer (1) Mariam Molokhia (1) Emma L Duncan (1) Kaare Christensen (2) Claire J Steves (1).

1) King's College London, London, UK. (2)University of Southern Denmark, Odense, Denmark

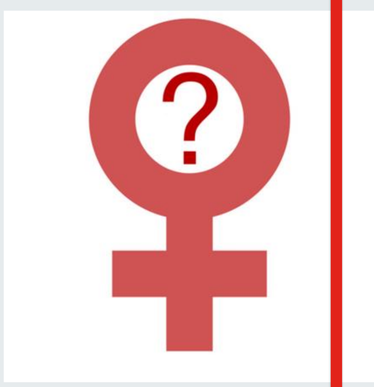
Menopause

↓

Vasomotor Symptoms

↓

Hormone Replacement Therapy (HRT)



Known Associations of HRT

Relief of Vasomotor symptoms
Improvement in mood

Reduced osteoporosis

Possibly, reduced Cardiovascular Disease ?

Unknown:

Frailty?

Methods:

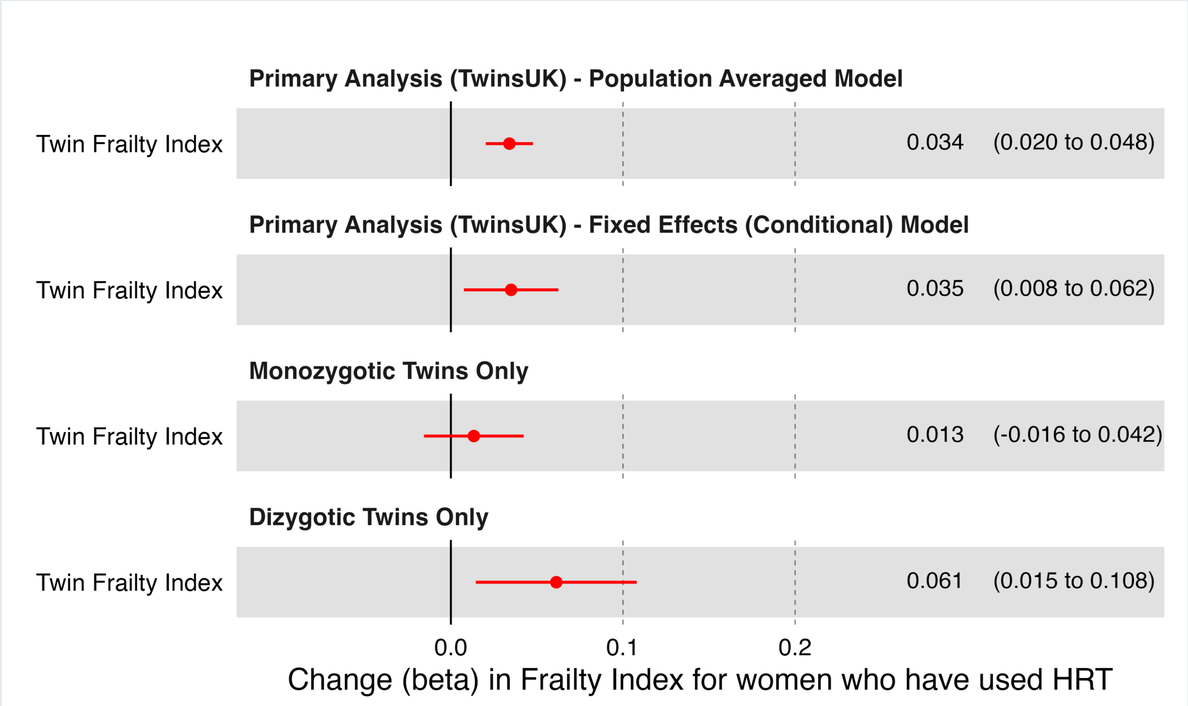
We analysed women in the Danish population registry (n=471 206) , Danish Twin Registry and TwinsUK cohort (n=1 547).

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.

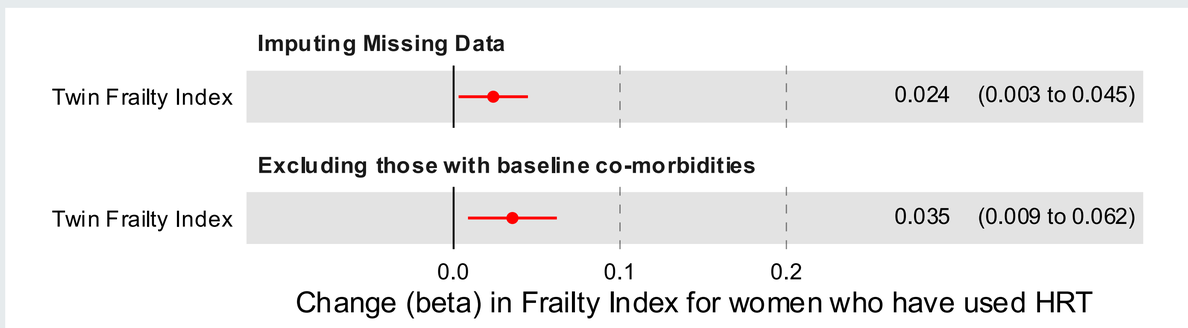
In TwinsUK, we assessed frailty after age 65 using a frailty index (TwinFI) by HRT use, adjusting for covariates (BMI, smoking, alcohol use, education and deprivation).

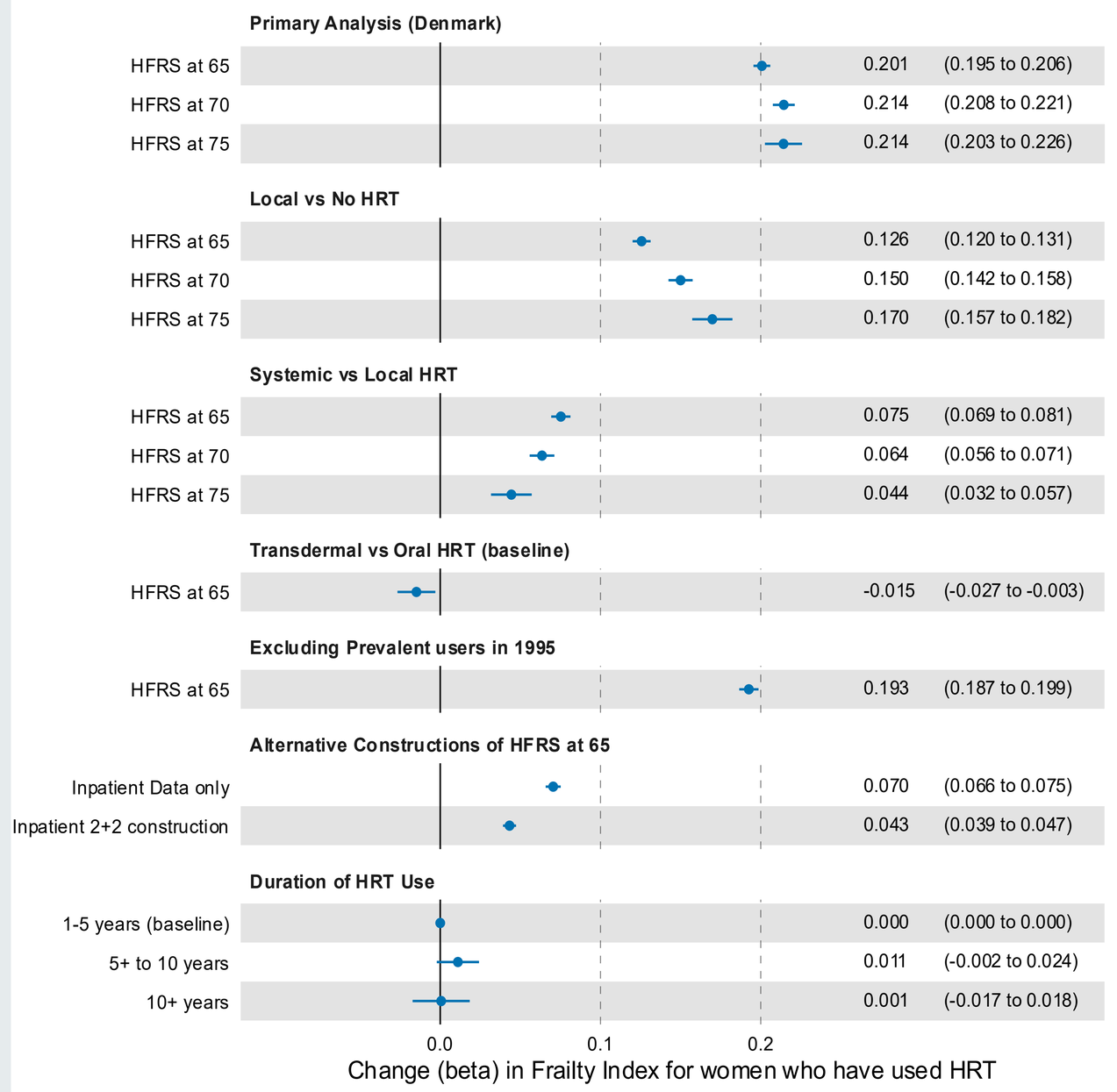
Analysis used conditional/fixed-effects generalised estimating equations, examining within twin-pair frailty associations.

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

Funding for the future of ageing well
VIVENSA FOUNDATION

Funded by Vivensa Foundation and British Geriatrics Society Clinical PhD Fellowship

British Geriatrics Society
Improving healthcare for older people