

NORRISK2 score can predict risk of dementia and cognitive impairment - The HUNT Study

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Background

Cardiovascular risk factors are associated with the risk of cognitive decline and dementia. However, it remains unclear whether cardiovascular risk scores can effectively predict cognitive outcomes, and whether sex influences this association. The NORRISK2 score is a Norwegian risk score developed to estimate 10-year risk of fatal- and non-fatal cardiovascular disease (CVD) in individuals without known CVD or diabetes. Using data from The Trøndelag Health Study (HUNT), a large, population-based, longitudinal health study from central Norway, this study aimed to investigate if the NORRISK 2 score could predict risk of dementia and cognitive impairment (MCI or dementia) in males and females.



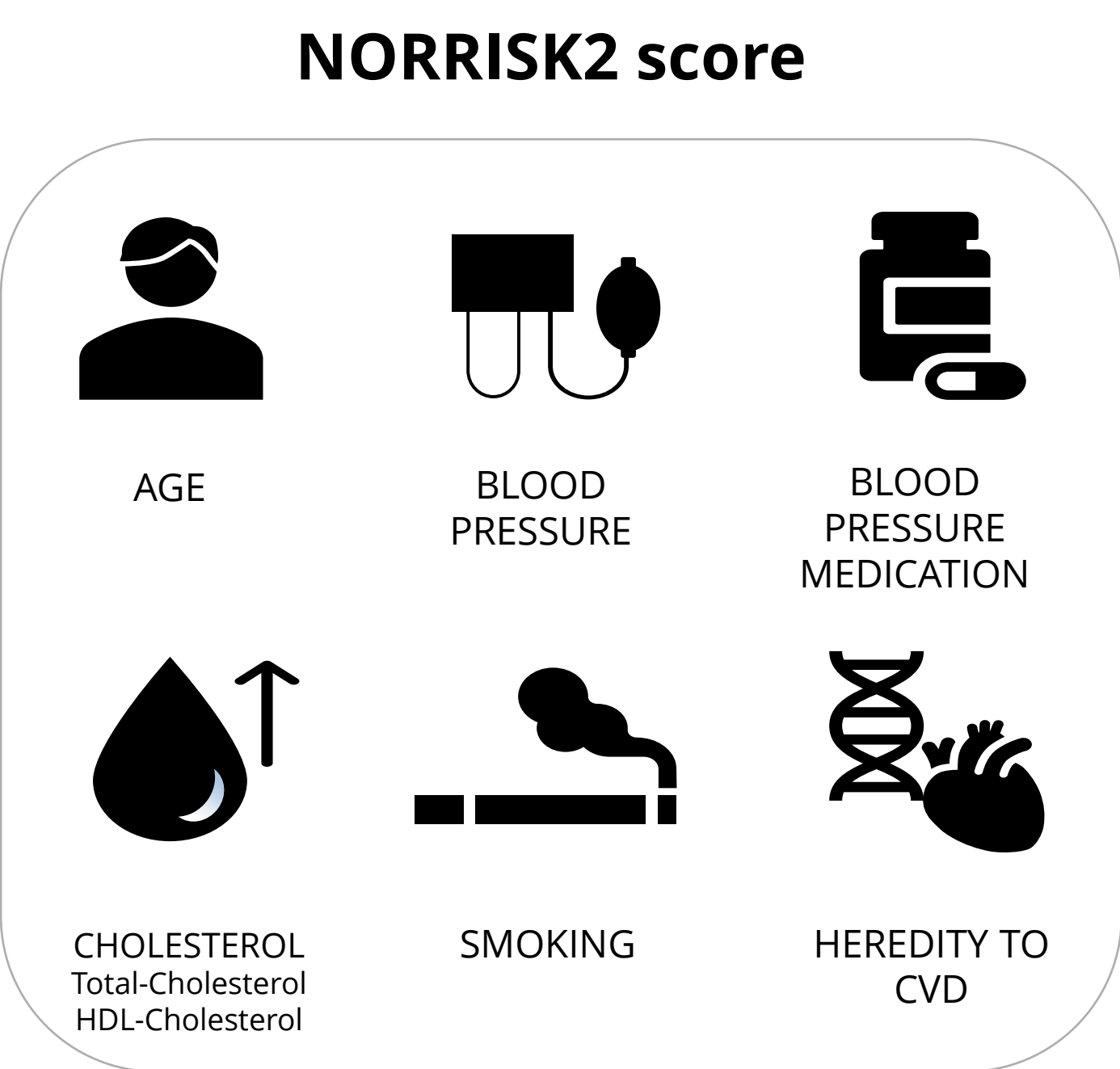
The Trøndelag Health Study (HUNT)

HUNT1 - HUNT2 - HUNT3 - HUNT4
(1984-86) (1995-97) (2006-08) (2017-19)

Aim: Investigate if the NORRISK2 score can predict risk of dementia and cognitive impairment in males and females.

Method

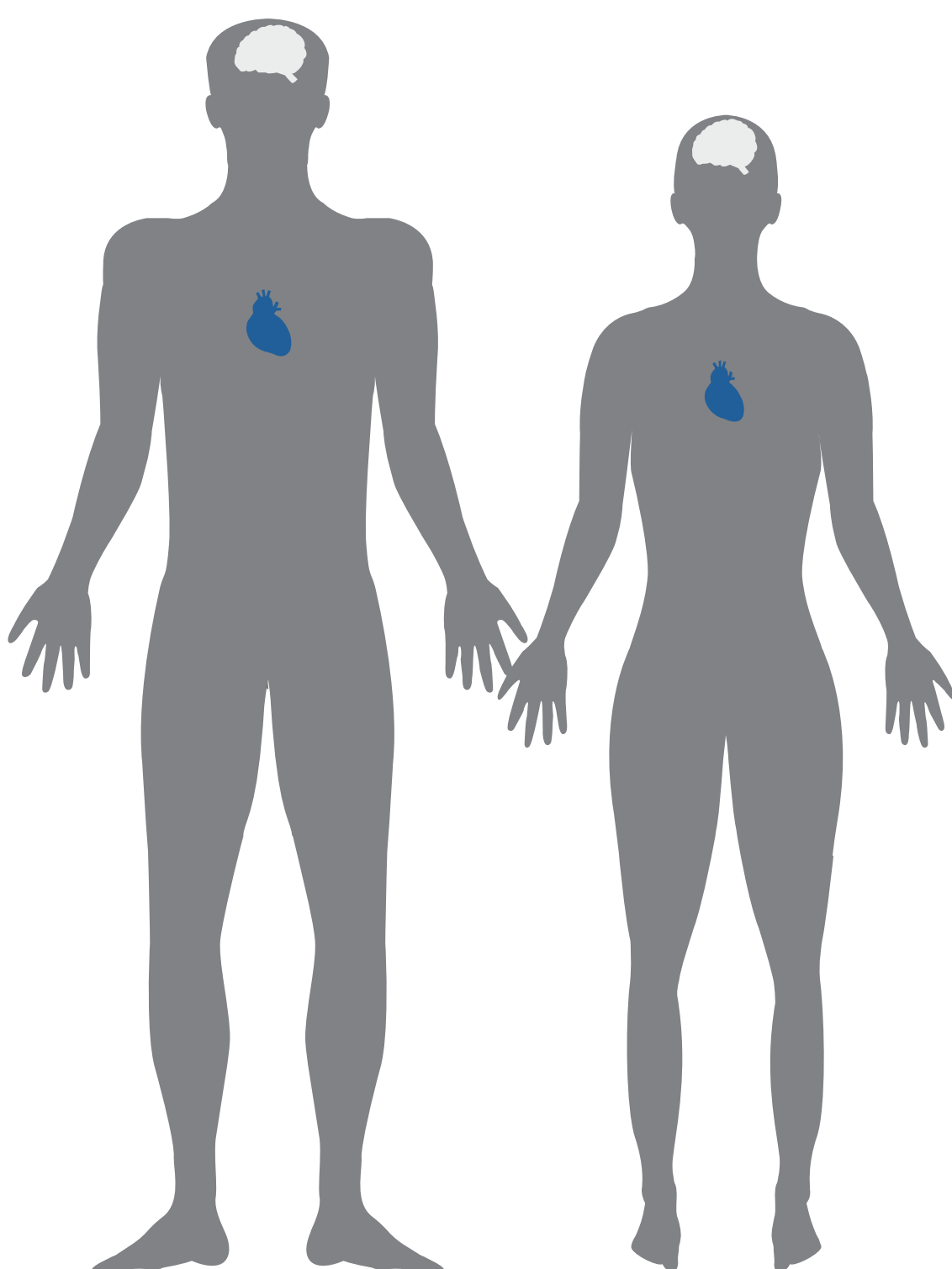
Sample: 6971 participants (57.6% females, mean age at HUNT2 56.1) from The HUNT Study.
Predictor: NORRISK2 score at HUNT2 (1995-1997).
Outcome: Cognitive status at HUNT4 70+ (2017-2019).
Statistical analysis: Binary logistic regression analysis.



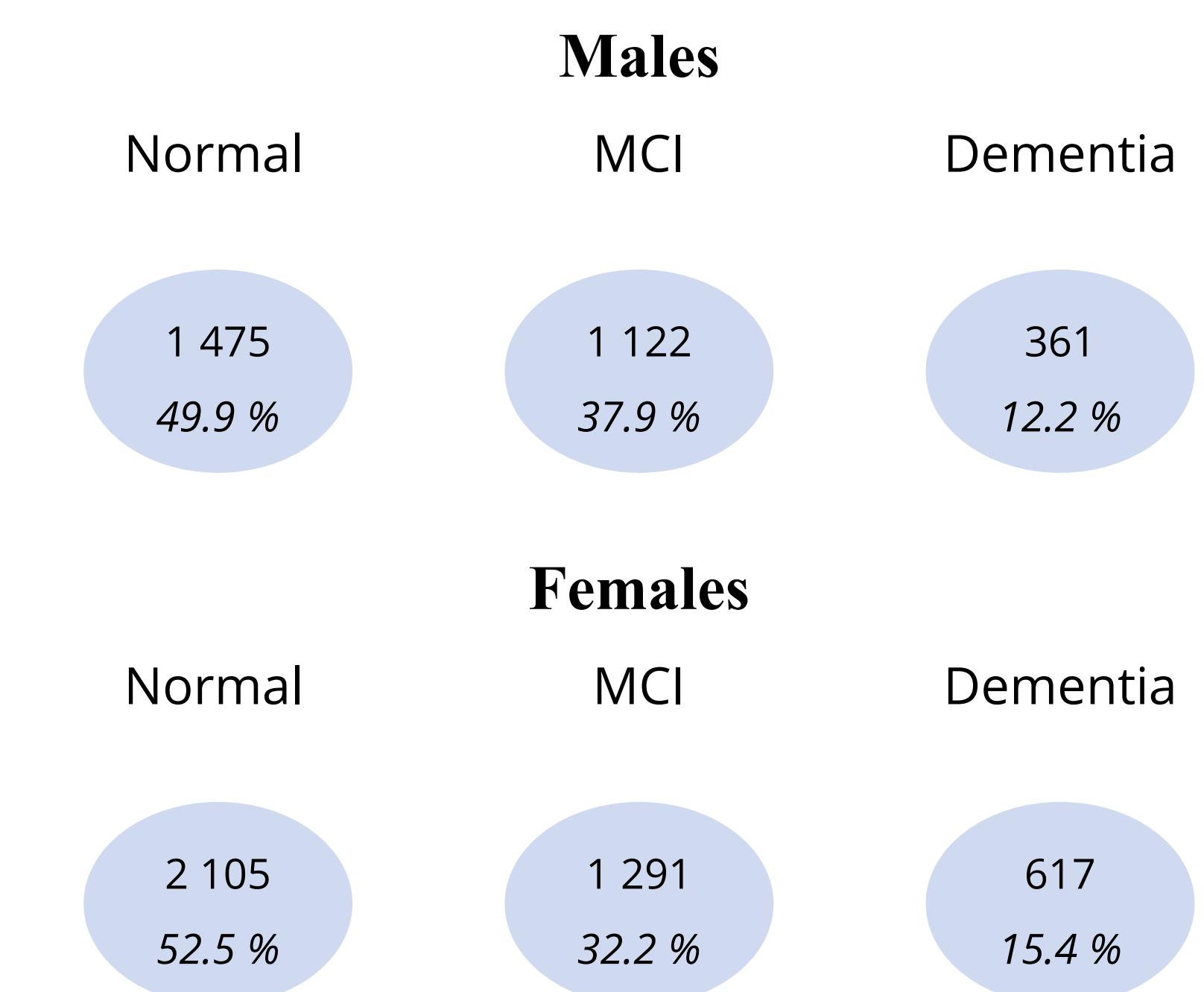
Statistical analysis:

Two sets of binary logistic regression models with dementia (O_1) and cognitive impairment (O_2) as dependent variables.

	Dementia	Cognitive impairment
Dementia	OR ₁	OR ₂
MCI		
Normal cognition		



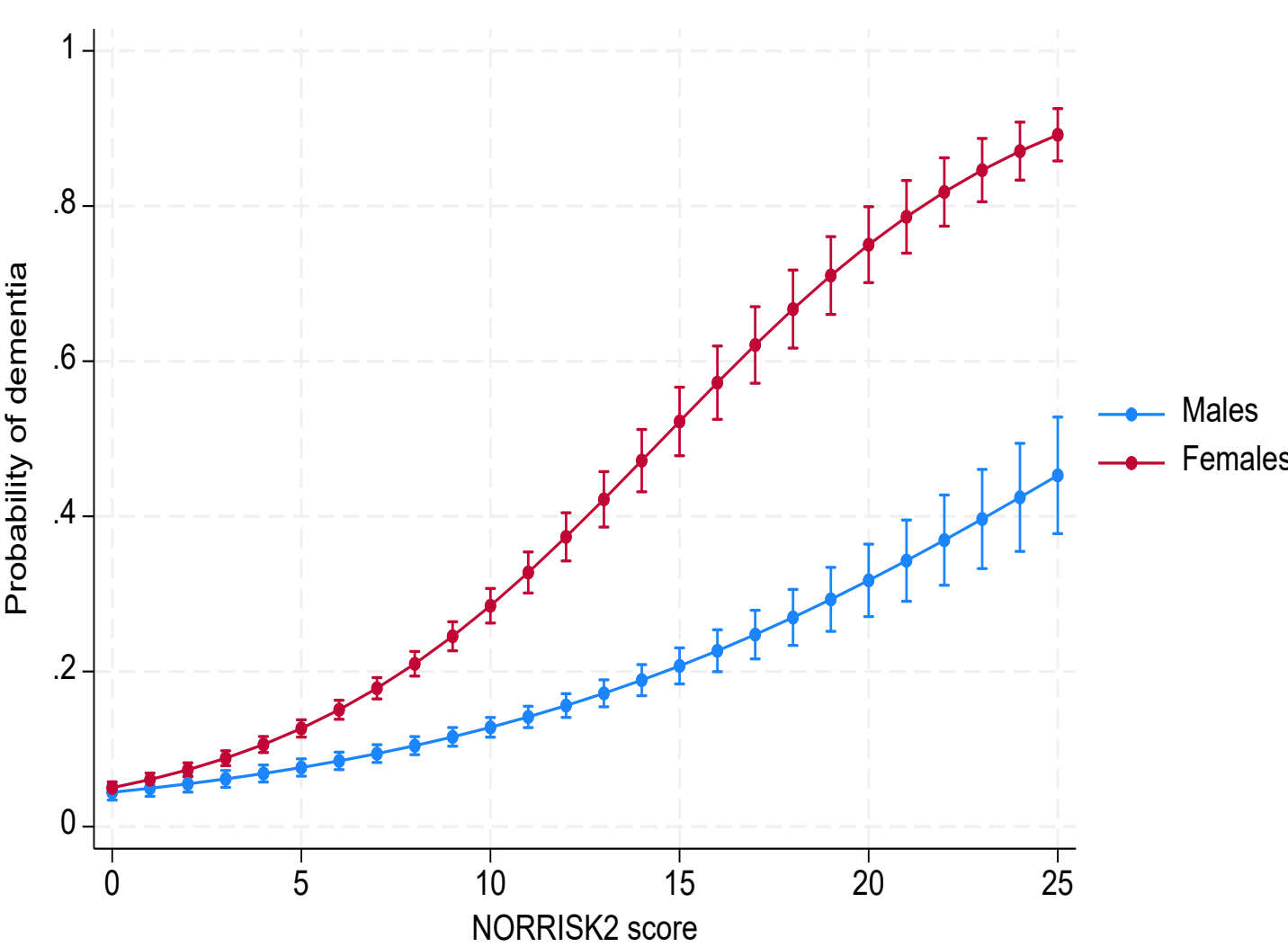
Results



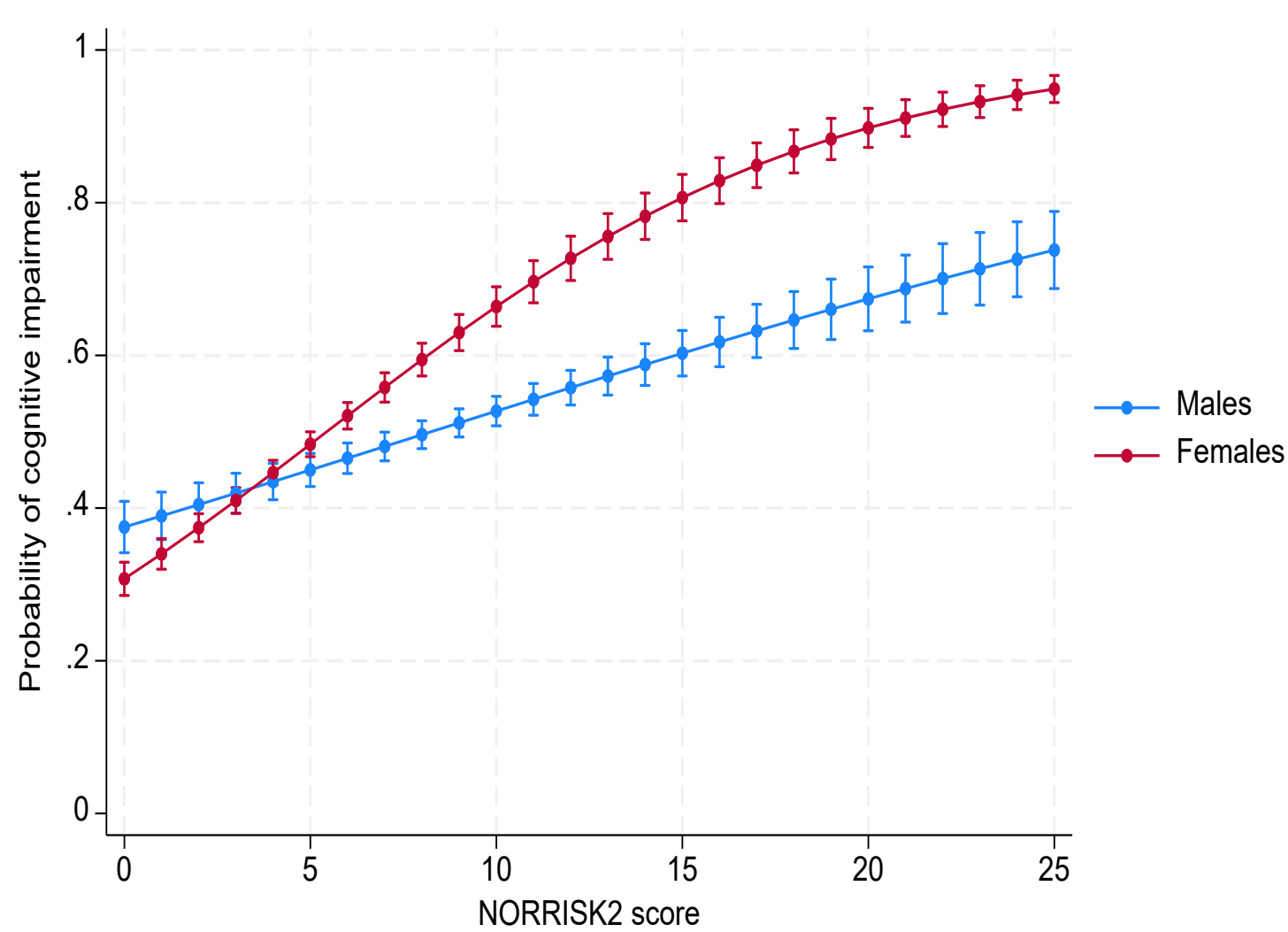
Distribution of cognitive status among males and females in the study population.

Results from binary logistic regression analyses with dementia (O_1) and cognitive impairment (O_2) as dependent variables and NORRISK2 score as main covariate. Odds ratios (OR) with 95% confidence intervals (95% CI) are presented unadjusted.

	Males	Females
	OR 95% CI	OR 95% CI
Dementia	1.12 1.10-1.14	1.22 1.20-1.25
Cognitive impairment (MCI or dementia)	1.06 1.05-1.08	1.16 1.14-1.18



Margins plot illustrating the predicted probability of dementia across levels of NORRISK2 score, based on binary logistic regression.



Margins plot illustrating the predicted probability of cognitive impairment across levels of NORRISK2 score, based on binary logistic regression.

Take home message:

- The cardiovascular risk score NORRISK2 can predict risk of dementia and cognitive impairment.
- NORRISK2 score is a stronger predictor in females than in males.

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