Key Question

Lifestyle factors have been described as the "fourth pillar" of atrial fibrillation (AF) management. Can lifestyle risk factors be incorporated into a clinical risk model to predict the risk of AF development?

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Key Finding

The HARMS$_2$-AF score was developed in the UK Biobank (UKB) and externally validated in the Framingham Heart Study (FHS) population. The HARMS$_2$-AF risk score performed comparably with the CHARGE-AF risk score and outperformed the Framingham-AF and ARIC risk scores.

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Take Home Message

This is the largest study evaluating and externally validating the predictive performance of an AF lifestyle risk score across two large distinct populations from two different continents. The HARMS$_2$-AF score may help to identify individuals at risk of AF in the general community and assist population screening.
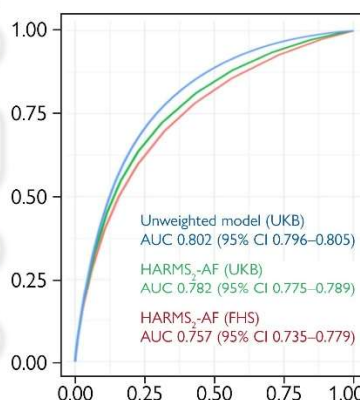

Development and external validation of the HARMS$_2$-AF lifestyle risk score among the UKB and FHS

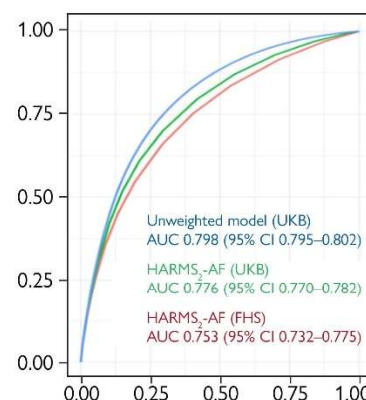**HARMS$_2$-AF score** — Points (0-14)

			Points
H	Hypertension		4
A	Age	60-64 years	1
		≥65 years	2
R	Raised BMI	BMI ≥30kg/m^2	1
M	Male sex		2
S	Sleep apnoea		2
S	Smoking		1
AF	Alcohol	7–14 standard drinks/week	1
		≥15 standard drinks/week	2

5-year risk prediction

Unweighted model (UKB)
AUC 0.802 (95% CI 0.796–0.805)

HARMS$_2$-AF (UKB)
AUC 0.782 (95% CI 0.775–0.789)

HARMS$_2$-AF (FHS)
AUC 0.757 (95% CI 0.735–0.779)

10-year risk prediction

Unweighted model (UKB)
AUC 0.798 (95% CI 0.795–0.802)

HARMS$_2$-AF (UKB)
AUC 0.776 (95% CI 0.770–0.782)

HARMS$_2$-AF (FHS)
AUC 0.753 (95% CI 0.732–0.775)

Probability of remaining free of AF
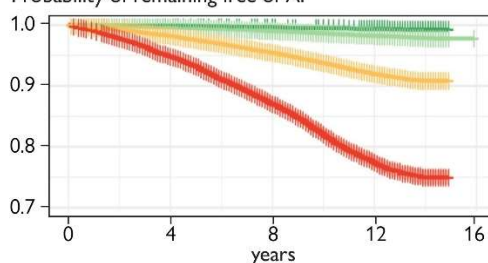
Score 0 (ref)

Score 1–4: HR 2.81 (95% CI 1.95, 4.04)

Score 5–9: HR 12.79 (95% CI 8.93, 18.33)

Score 10–14: HR 38.70 (95% CI 26.96, 55.54)