

MIND diet and baseline dementia risk score in relation to long-term risk of dementia



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BACKGROUND

The MIND diet has been associated with a lower risk of dementia. However, it remains unclear **whether this protective association varies depending on individuals' underlying baseline risk of developing the disease.**

METHODS

5,669 dementia-free adults (Health and Retirement Study)

In 2013

- **Exposure:** MIND diet adherence
- **Stratum:** Low vs. High baseline dementia risk (by median CogDrisk score)

*CogDrisk: A validated, multidimensional tool that differentially weights demographic, vascular, and lifestyle risk factors.

In 2020 (Median 7-year follow-up)

- **Outcome:** Incident dementia (via algorithm)

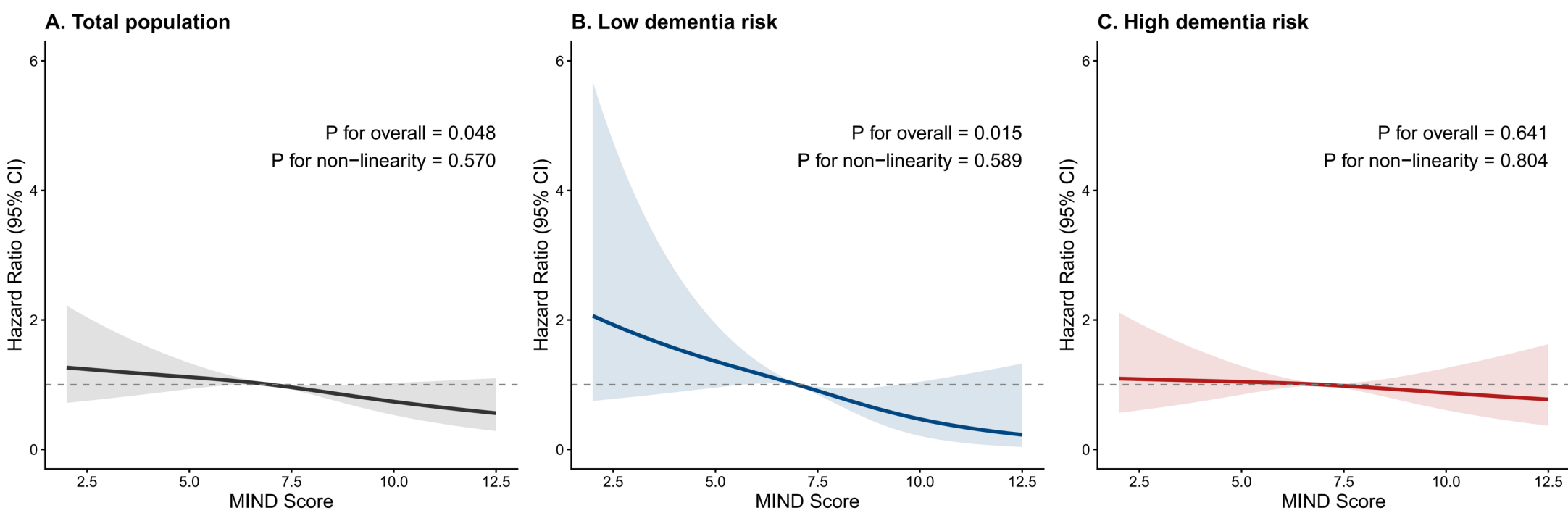
- **Interaction Analysis:** Cox models to test effect modification by baseline dementia risk.
- **Stratified Trajectories:** RCS modeling to map dose-response relationships within low- and high-risk groups.
- **Temporal Dynamics:** Comparison of time-to-diagnosis to identify the optimal window for early intervention.
- **Clinical Impact:** ARR and NNT.

RESULTS

Figure1 Stratified analysis of the association between MIND diet score and incident dementia by baseline risk

Subgroup	Cases/Total		HR (95% CI)	P for interaction
Low dementia risk				
Tertile 1	37/910		1.00 (Reference)	0.033
Tertile 2	27/1136		0.57 (0.34–0.93)	
Tertile 3	15/976		0.38 (0.21–0.71)	
Per 3-point increment	79/3022		0.57 (0.39–0.82)	
High dementia risk				
Tertile 1	117/1021		1.00 (Reference)	0.011
Tertile 2	112/1018		0.95 (0.73–1.24)	
Tertile 3	59/608		0.88 (0.64–1.22)	
Per 3-point increment	288/2647		0.91 (0.74–1.12)	

Figure2 Dose-response relationship between MIND diet adherence and incident dementia, stratified by baseline risk



Over a 7-year follow-up (367 cases), baseline risk **significantly modified** the inverse association between the MIND diet and dementia.

Low baseline dementia risk group:

Median time to diagnosis: 7 years

Demonstrated a strong, linear relative risk reduction (HR = 0.38, 95% CI: 0.21–0.71) and substantial **absolute clinical benefit** (ARR = 1.17%, 95% CI: 0.29%–2.03%, NNT = 86).

High baseline dementia risk group:

Median time to diagnosis: 5 years

Exhibited significantly accelerated disease progression. Within this shorter timeframe, the diet trajectory remained flat with **no significant** relative association (HR = 0.88, 95% CI: 0.64–1.22) or absolute clinical benefit (ARR crossed zero).

CONCLUSION

The protective association between the MIND diet and dementia risk was **significantly modified by baseline dementia risk profile**, with a pronounced inverse association **observed exclusively in lower baseline dementia risk individuals.**

KEY TAKE AWAYS: The inverse association between the MIND diet and dementia is observed exclusively in lower-risk individuals. Rapid disease progression in high-risk groups might truncate this observational window, indicating that dietary associations vary significantly by baseline risk.

