



Tolion Brain Coach: AI-Enabled Personalization for Brain Health Prevention

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BACKGROUND

Alzheimer's disease begins **decades before symptoms appear** — a long preclinical window in which prevention can change the disease trajectory.

Structured, sustained lifestyle interventions outperform unstructured advice. Yet scalable tools for **individualized, evidence-based prevention** remain scarce.

45%

of dementia cases are attributable to **modifiable risk factors**¹ — the opportunity Tolion targets.

THE PRECLINICAL WINDOW

Pathology builds for decades before symptoms — the window in which Tolion acts.

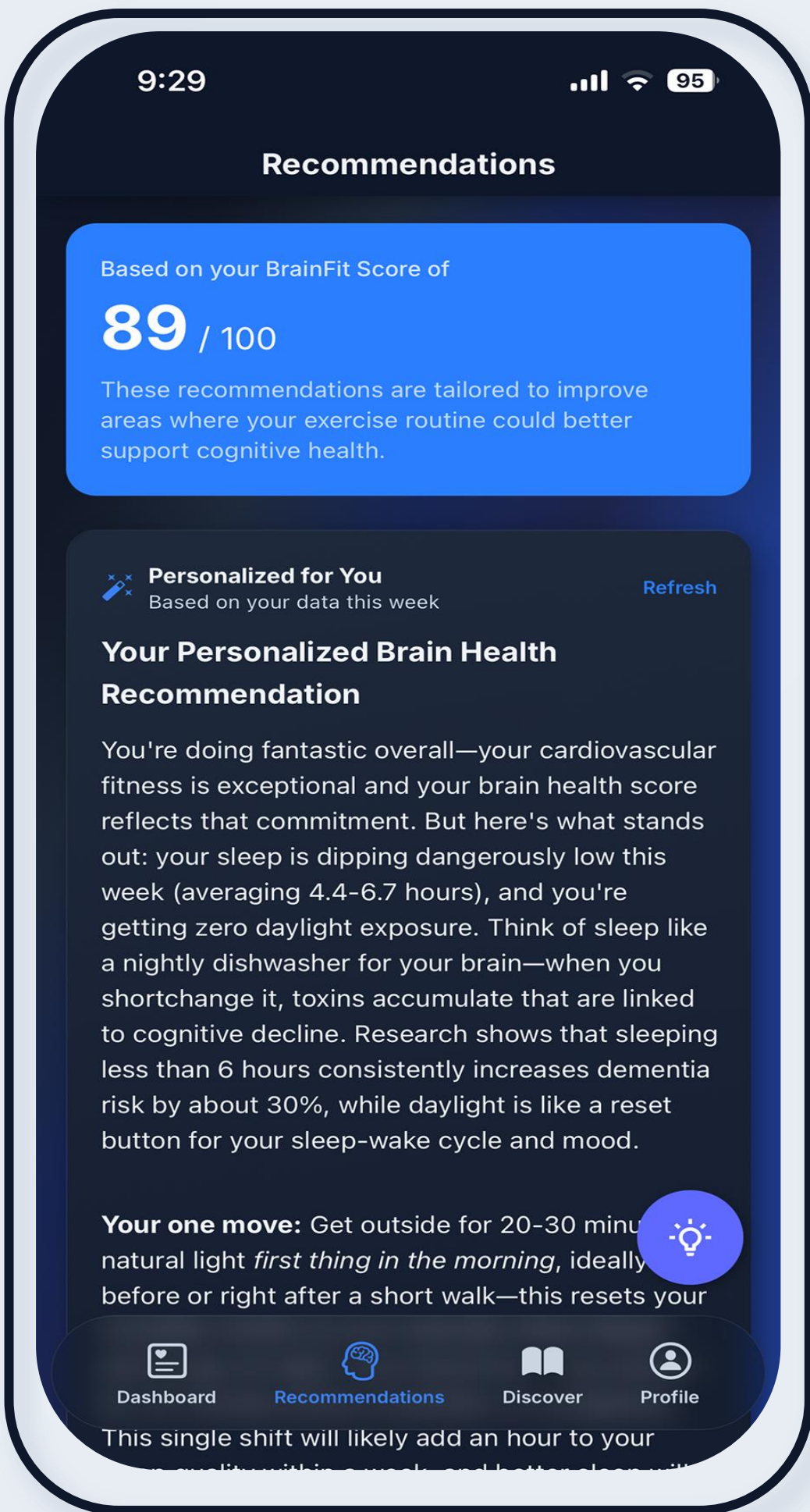
- Midlife • modifiable**
Lifestyle and health behaviors can still change the trajectory.
- Preclinical AD progresses**
Pathology accumulates silently, long before any symptoms.
- Clinical onset**
Memory and function decline once damage is advanced.

METHODS — HOW THE COACH WORKS

- Integrate multimodal data**
Continuous health metrics from **Apple HealthKit & Health Connect** (sleep, activity, cardiovascular fitness, autonomic function, recovery), structured questionnaires, AI conversational input, and genetic risk status where available.
- Compute the Brain Coach Score**
A weighted measure combining **15 modifiable & non-modifiable metrics** into one interpretable, trackable score.
- Coach with AI**
A conversational coach turns the profile into **tailored, action-oriented recommendations** and reinforces science-backed daily habits.
- Personalize across populations**
Models account for variation across sex, age, comorbidities and medication use — enabling **individualized rather than population-level** guidance.

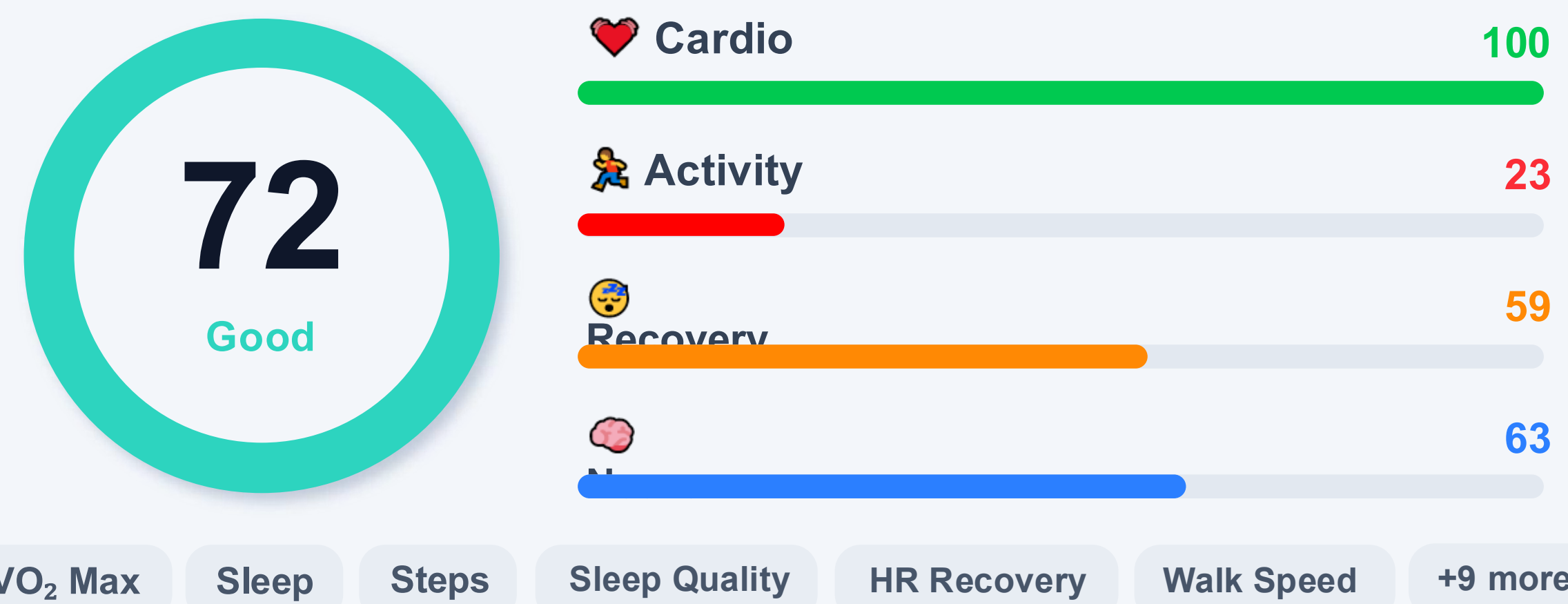


Live dashboard & score



AI coaching & actions

THE BRAIN COACH SCORE



Continuous Brain Coach Score tracking shows how lifestyle changes are reflected in each user's **brain-health trajectory over time**. Case-based use reveals **meaningful heterogeneity** across individuals — underscoring the limits of one-size-fits-all prevention.

CONCLUSION

AI-supported personalization is a **scalable route to dementia risk reduction** — translating complex, multidimensional health data into individualized, actionable guidance that users engage with **daily**. Case-based use reveals **meaningful heterogeneity** across individuals — underscoring the limits of one-size-fits-all prevention. Tolion Brain Coach is built to close that gap — **meeting every user where they are**.

References
1. Livingston, Gill, et al. 2024. "Dementia Prevention, Intervention, and Care: 2024 Report of the Lancet Standing Commission." The Lancet 404(10452):572–628.



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