

Saliva MicroAge: A Salivary Microbiome based Machine Learning Model for Noninvasive Aging Assessment and Health State Prediction

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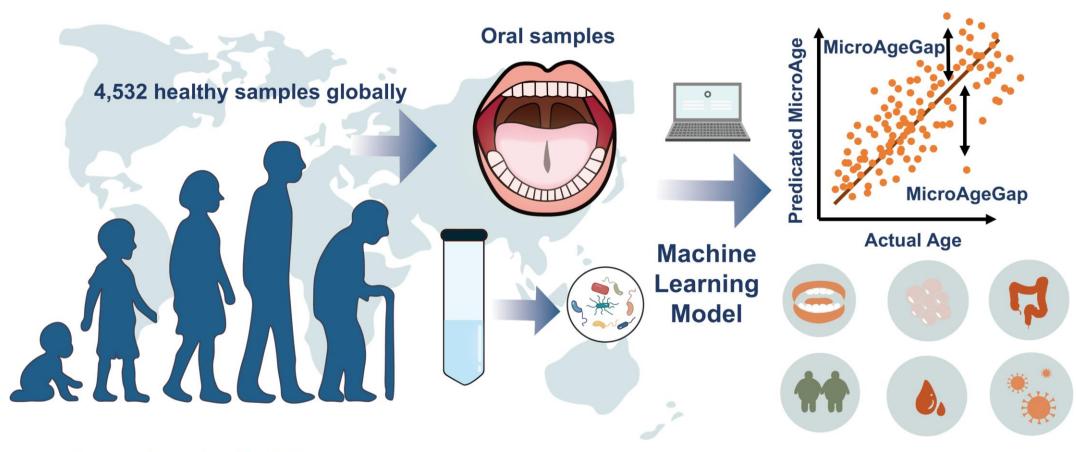
Tiansong Xu, Yuting Niu, Chenyu Deng, Yoo Cheung, Yuman Li, Zhewen Hu, Shiyu Sun, et al. 2025. Saliva MicroAge: A Salivary Microbiome based Machine Learning Model for Noninvasive Aging Assessment and Health State Prediction. *iMetaOmics* 2: e70040. https://doi.org/10.1002/imo2.70040



Graphic Abstract

Saliva MicroAge

Noninvasive • Saliva Microbiome-based Model • Machine Learning • Top Microbial Features



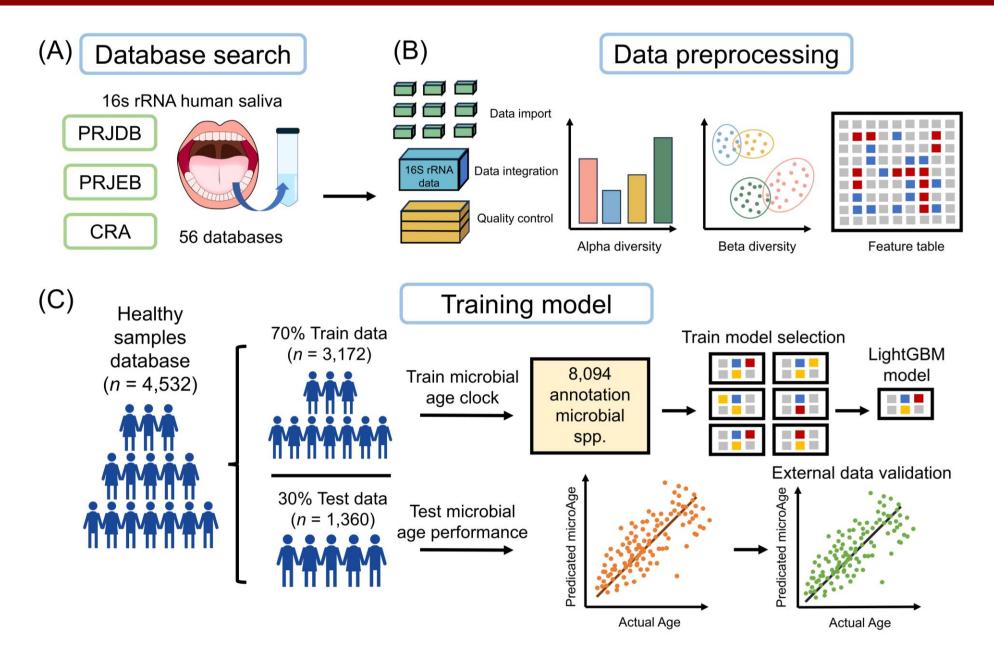
Spanning the Full Human Lifespan

Salivary Microbiome

Health State

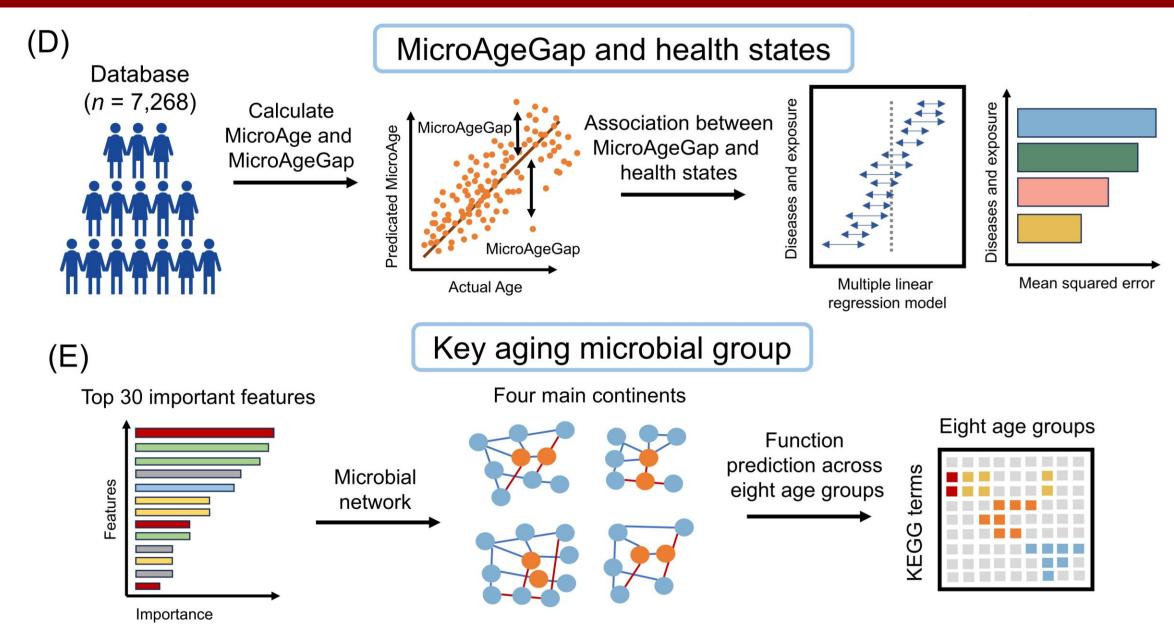


Construction Workflow of Saliva MicroAge Model

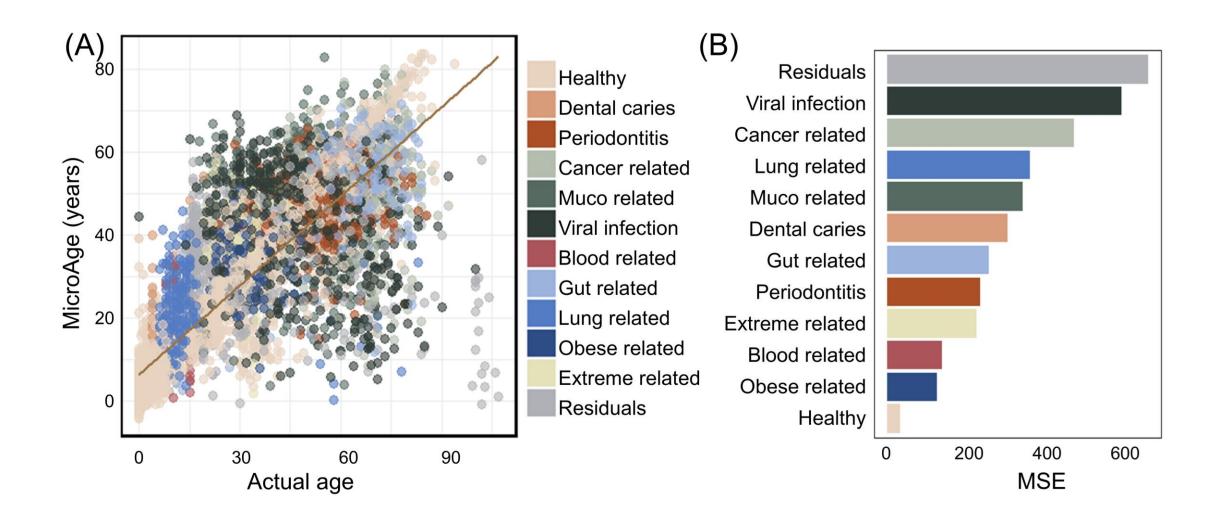




Construction Workflow of Saliva MicroAge Model

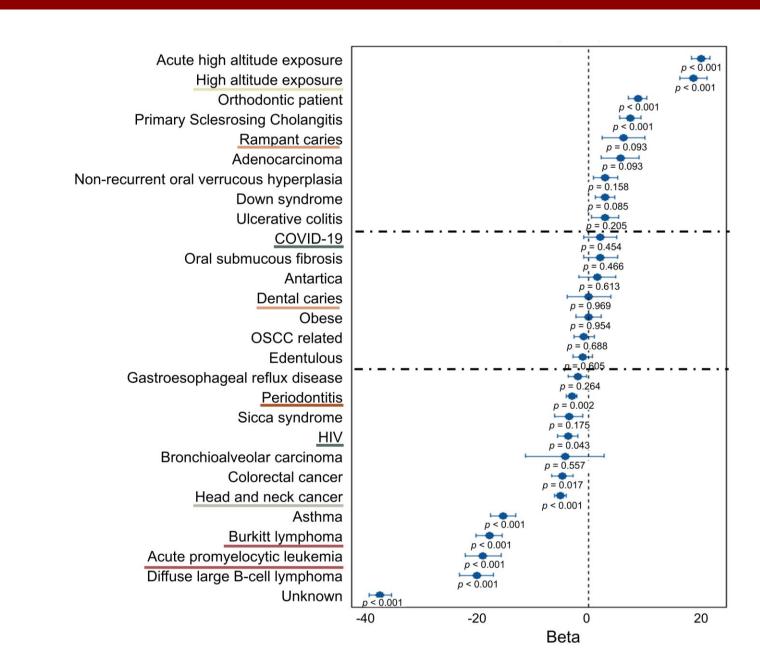


The volatility of saliva MicroAge might be a powerful predictor of health states



(C)

The volatility of saliva MicroAge might be a powerful predictor of health states





Summary

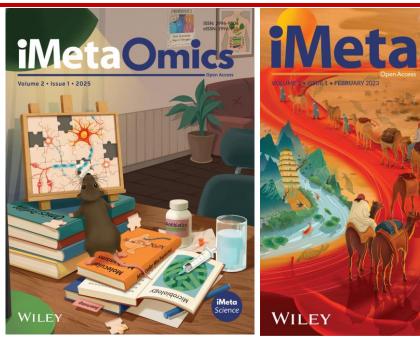
- ☐ Our study demonstrates that salivary microbiomes are valuable for predicting age. The discrepancies between chronological age and saliva MicroAge were linked to health states.
- ☐ The key microbial species identified in our model highlight their biological significance and potential as therapeutic targets for diagnosing and managing aging-related conditions.
- ☐ These findings offer promising applications in predicting aging and health states, as well as advancing personalized healthcare and microbiome research.

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