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NAGI SNAPSHOT GUIDES

Maximizing translational value in aging research.

Combine lifespan, healthspan, and biological age measurements in a single experiment.

The Challenge

Aging research has traditionally relied on single endpoints, such as mean lifespan. While valuable, these metrics often fall short for:

- Limited **translational value** for predicting human outcomes.
- Reduced **exploratory power** when only one variable is measured.

Researchers need **multi-dimensional, actionable data** to:

- Detect subtle effects **earlier in the pipeline**.
- Capture both **lifespan and healthspan**.
- Shorten timelines **from hypothesis to clinical relevance**.

The ideal scenario? Being able to get multiple, insightful datapoints in one-shot assay as early as possible in your pipeline.

A Multi-Endpoint, One-Shot Approach

Nagi™ C-Age and Nagi™ B-Age AI-driven assays bring complementary capabilities that bridge the gap between speed, depth, and predictive value.

Capability	Nagi™ C-Age	Nagi™ B-Age
Primary Focus	Lifespan and healthspan in parallel.	Biological age across 5 Vital Traits
Readouts	Lifespan, motility, growth, reproduction.	Motility, posture, appearance, reproduction, growth (5 Vital Traits).
Strength	Integrated lifespan + healthspan readouts in a single automated assay.	High-resolution biological age tracking for mechanism-of-action insights.
Ideal Use Case	Broad screening, translational relevance, compound de-risking.	Mechanistic understanding, early detection, explore additional health claims.

Full validation study at
ARDD 2025 - Poster #33

Combine Nagi™ C-Age and Nagi™ B-Age: A sneak peek

We applied Nagi™ B-Age and Nagi™ C-Age to screen and evaluate the effects of known anti-aging interventions in *C. elegans*. This enabled us to monitor the chronological age, healthspan, and biological age to identify specific longevity improvements across the Five Vital Traits.

Nagi™ C-Age: Doxycycline interventions

Doxycycline showed a trend of lifespan extension, potentially through the induction of a mild stress response, an effect reported in mice.

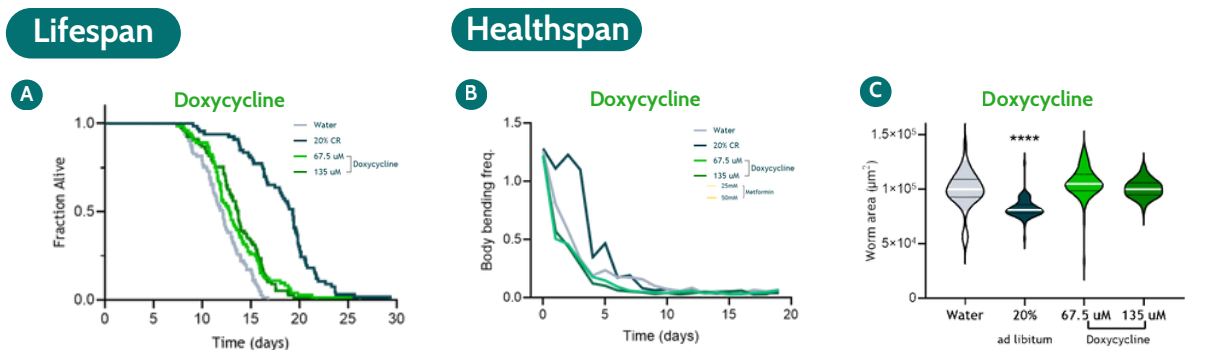


Figure legend: Effects of Doxycycline influencing aging pathways on lifespan and healthspan parameters in *C. elegans*. **a)** Survival curves showing the impact of Doxycycline on lifespan. **b)** Motility (body bending frequency (Hz)) and **c)** body area on day 10 were evaluated upon Doxycycline interventions.

Nagi™ B-Age: Doxycycline interventions

Proposed to exert anti-aging effects via activation of protective mitochondrial stress responses, Doxycycline showed a specific impact at high concentrations by **lowering the biological age of the Reproduction trait**, potentially indicating an extended reproductive span.

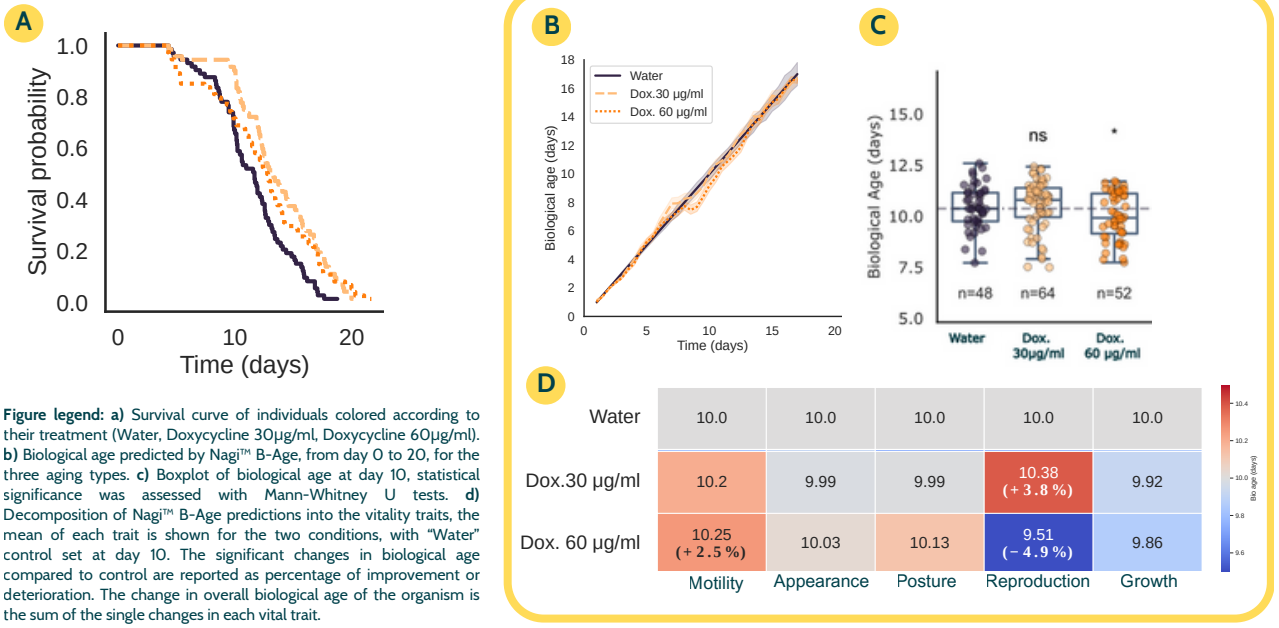
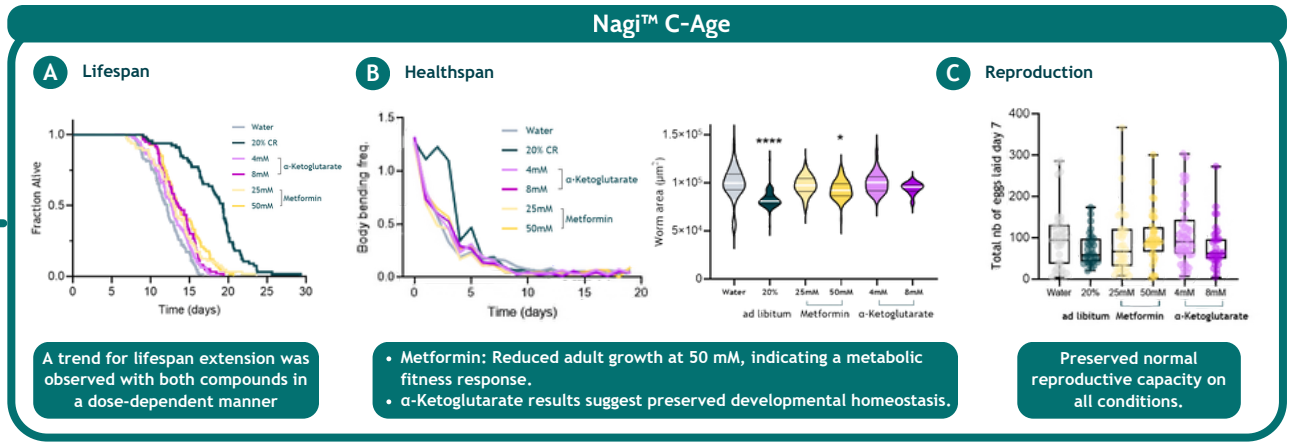


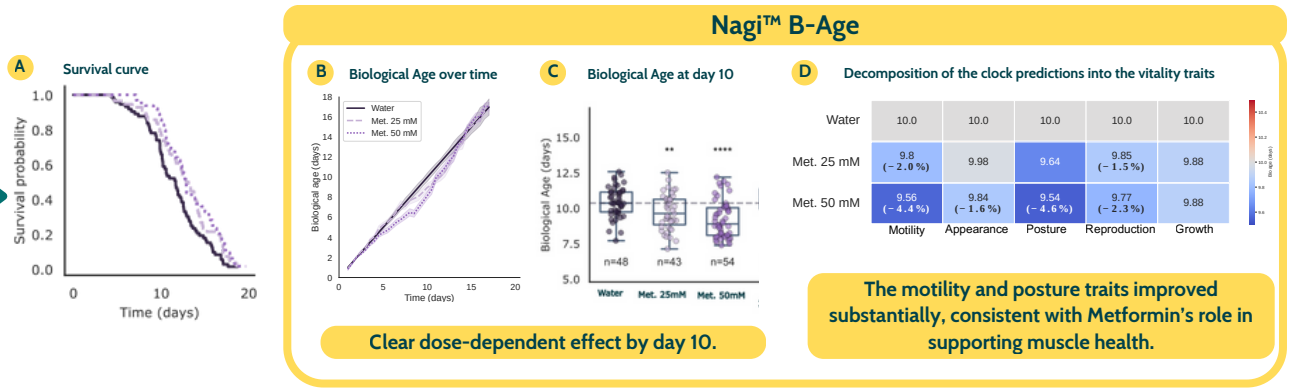
Figure legend: a) Survival curve of individuals colored according to their treatment (Water, Doxycycline 30µg/ml, Doxycycline 60µg/ml). **b)** Biological age predicted by Nagi™ B-Age, from day 0 to 20, for the three aging types. **c)** Boxplot of biological age at day 10, statistical significance was assessed with Mann-Whitney U tests. **d)** Decomposition of Nagi™ B-Age predictions into the vitality traits, the mean of each trait is shown for the two conditions, with "Water" control set at day 10. The significant changes in biological age compared to control are reported as percentage of improvement or deterioration. The change in overall biological age of the organism is the sum of the single changes in each vital trait.

Combine Nagi™ C-Age and Nagi™ B-Age: A sneak peek

Effects of Metformin and α-Ketoglutarate on lifespan and healthspan



Impact of Metformin on Survival and Biological Age



Translational Impact

- **Lifespan and Healthspan Together:** See both survival and functional aging metrics in one experiment, improving translational predictivity for drug pipelines.
- **Biological Age Resolution:** Identify early intervention effects, beyond lifespan curves, enabling faster decision-making.
- **Trait-Level Mechanistic Insights:** Understand how a compound works. Is it preserving motility? Extending reproductive span? Improving posture or growth stability?

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Explore the Swiss knife longevity discovery platform

Accelerate your research with Nagi Bioscience

Let's connect

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