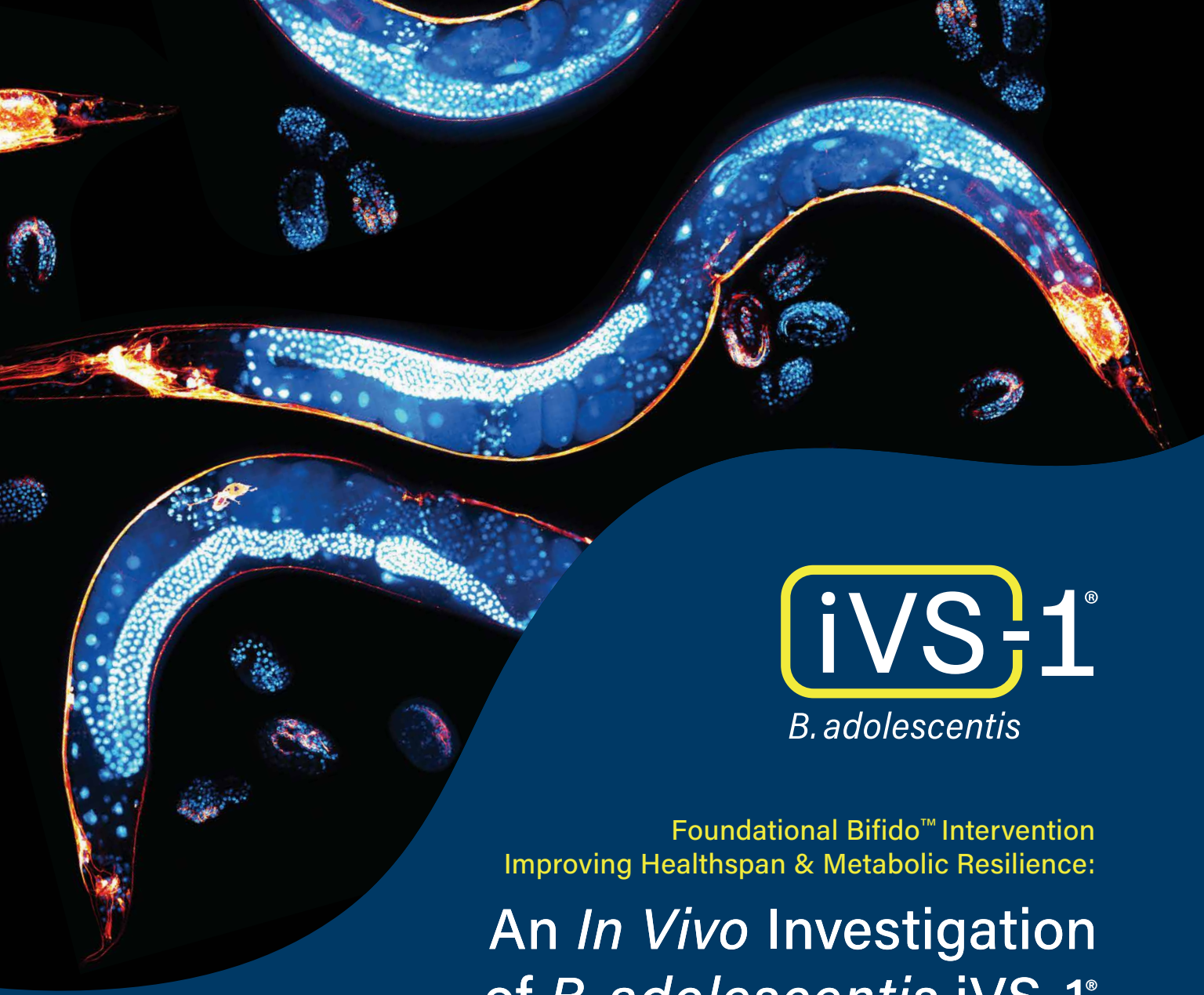


iVS-1®

B. adolescentis

Foundational Bifido™ Intervention
Improving Healthspan & Metabolic Resilience:

An *In Vivo* Investigation of *B. adolescentis* iVS-1® in a Nematode Model

The Research

Synbiotic Health worked with NemaLife to investigate the effects of *B. adolescentis* iVS-1® on lifespan and adiposity of nematodes under a standard diet and high sugar diet.

Other objectives were to identify key genes, pathways and tissue targets modulated by iVS-1®, and determine how these results might translate to health benefits in humans.

2200 worm subjects were enrolled in the study.

The Results

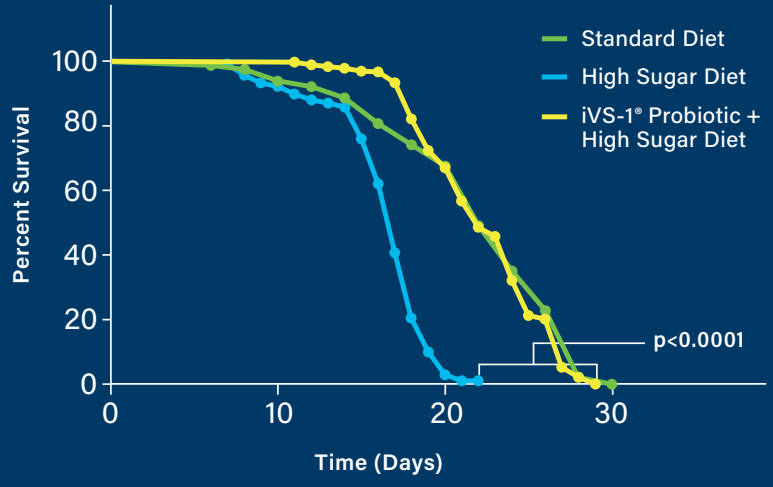
iVS-1® activates multiple mechanisms leading to higher rates of survival and reduced fat mass.

Median Lifespan
↑9.09%
on a standard diet

Median Lifespan
↑29.40%
on a high sugar diet

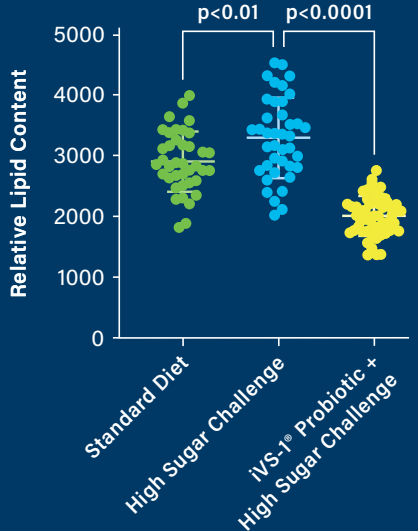
Maximum Lifespan
↑31.80%
on a high sugar diet

Longevity

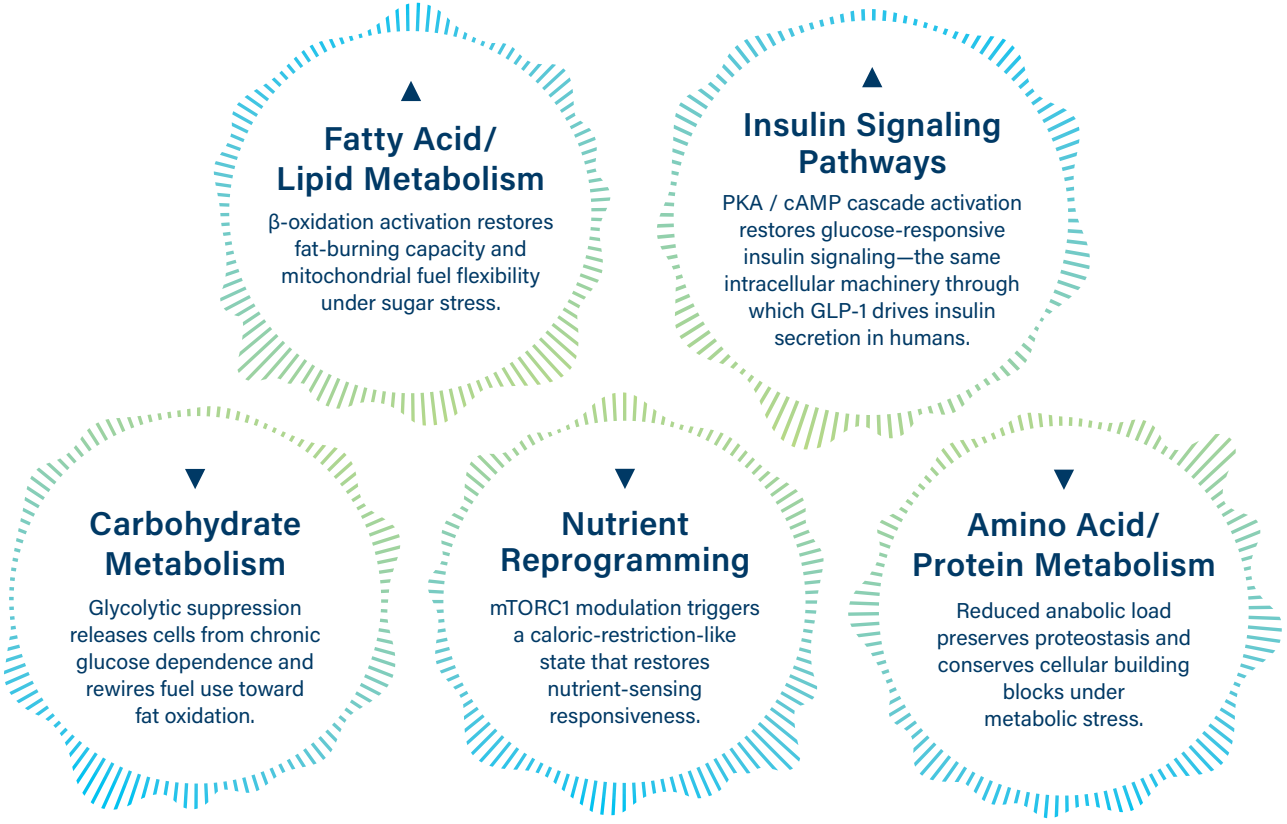


Fat Reduction
↓38.85%
after a high sugar challenge

Adiposity



Major Metabolic Pathways Regulated by iVS-1® Under a High Sugar Diet



In a *C. elegans* (nematode) model, transcriptomic analyses following supplementation with *B. adolescentis* iVS-1® revealed gene expression patterns consistent with support for metabolic health and energy balance. Regulated pathways suggested enhanced mitochondrial activity and a shift toward fat utilization and sustained energy production, which are commonly associated with improved endurance and metabolic efficiency. Additional transcriptomic signatures indicated modulation of pathways involved in glucose metabolism and insulin-like signaling, consistent with support for healthy glycemic regulation.

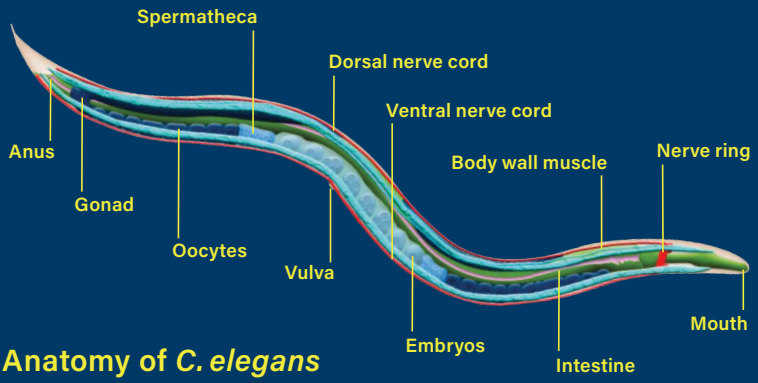
Together, these effects point to improved metabolic resilience while helping preserve protein balance and muscle-like tissue integrity in the model system.

Collectively, these benefits are associated with key biological pathways linked to healthspan and longevity, suggesting iVS-1® may help support the maintenance of physiological function over time.

Worms: Windows into Human Healthspans

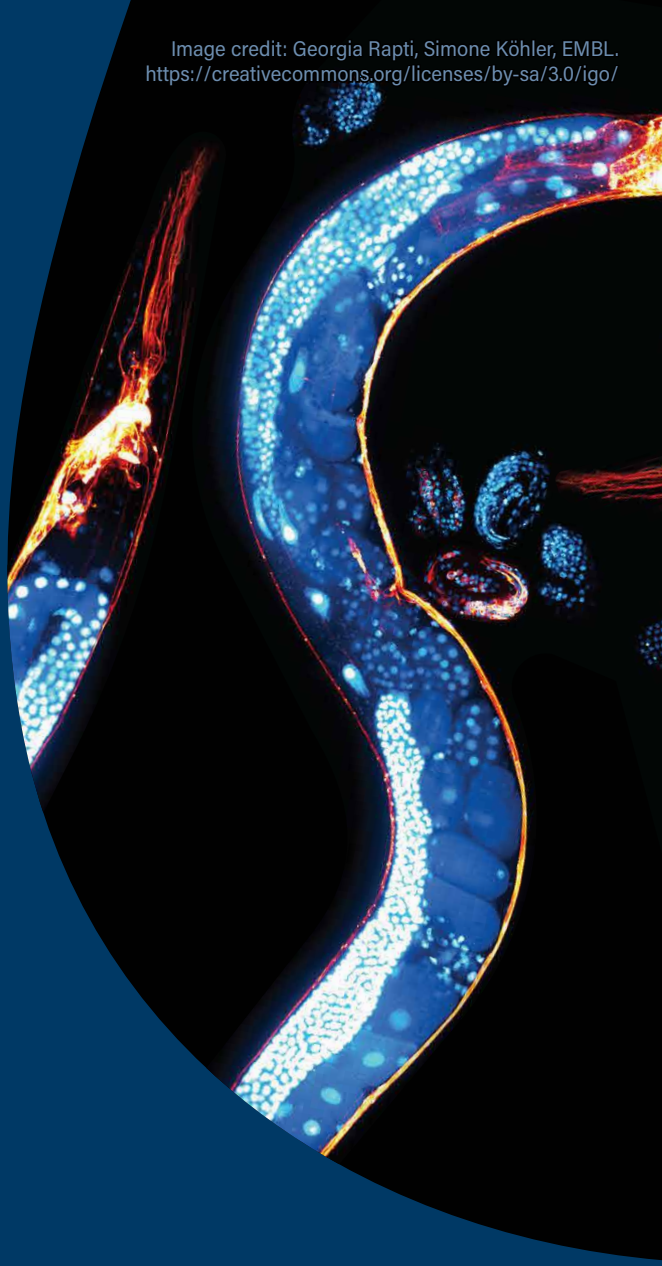
Caenorhabditis elegans, or *C. elegans*, has emerged as a powerful model for evaluating the longevity potential of biotics, offering a unique bridge between mechanistic biology and translational health outcomes. Nematodes share many of the hallmarks of aging with humans, including key genetic pathways governing metabolism, stress response, and cellular maintenance, which are all conserved in *C. elegans*.

The short lifespan and well-characterized biology of the nematode enable rapid, high-throughput screening of bioactive ingredients. Various microbes have demonstrated meaningful lifespan and metabolic benefits in this model, supporting its value in early-stage discovery and advancing the science of microbiome-driven healthy aging.



Anatomy of *C. elegans*

Adapted and provided by NemaLife Inc.
Original source: Ann K. Corsi, Bruce Wightman and Martin Chalfie. WormBook, 2015.



Synbiotic HEALTH

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