



AGELOC Y-SPAN RESEARCH

PEER-REVIEWED STUDY: EFFECT ON AGING AND VITALITY

The peer-reviewed study results summarized below were published in the Journal [Nutrients](#) in 2020. The study provides additional validation of the science behind ageLOC Y-Span—Nu Skin’s most advanced anti-aging supplement developed to deliver a wide range of systemic youth preservation benefits.

BACKGROUND

There are many theories about aging and how to attenuate the aging process. One theory based on credible science relates to reducing daily caloric or energy intake and considers the quality of calories and adequate micronutrients. This healthy model of aging has repeatedly been shown to extend lifespan and health in various animal models. However, it is difficult for humans to maintain caloric restriction over time. Therefore, important research is being done to find solutions that mimic some of the health benefits of this dietary model without the restriction of energy.

Our research in this field resulted in the development of a unique nutritional supplement blend called ageLOC Y-Span, which was shown to elicit positive gene expression changes in multiple tissues. In this study, we conducted further research to examine the functional attributes of this unique supplement on movement in *C. elegans*, a tiny worm. *C. elegans* is a well-accepted scientific model of aging research because of its short lifespan of only 21 days, which allows scientists to quickly assess the age-related changes associated with a treatment.

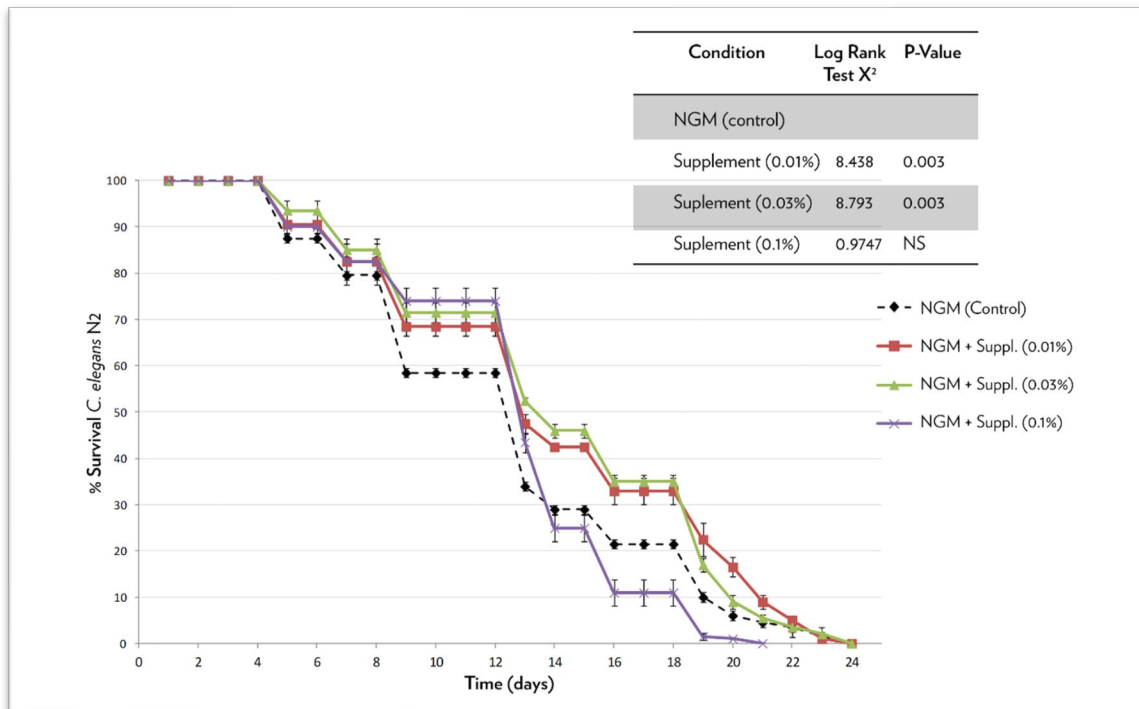
METHODS

The objective of this study was to determine if ageLOC Y-Span influences lifespan and vitality in *C. elegans*. All groups were given a standard diet (Nematode Growth Medium or NGM). The control group was not given ageLOC Y-Span, and the other groups were given one of several doses of the supplement in addition to the standard diet. The supplement was tested at a range of doses to confirm its safety. We calculated the doses by dividing the weight of the supplement by the volume of the *C. elegans* diet. We plotted survival curves to assess longevity at various doses of the supplement. Additionally, we measured vitality by counting the number of body bends within a specific time period to assess movement rate. This measure of movement was analyzed on 1-day (young adult) and 3-day-old (adult) *C. elegans*.

RESULTS – LIFESPAN

We did not observe any statistically significant adverse effects with the supplement at all doses tested. The figure below shows the survival curves, which are an indication of lifespan at different doses of ageLOC Y-Span. The doses that had an effect (0.01%, 0.03%, and 0.1%) are shown in

the survival curve below. The results indicate there was an increase in lifespan of *C. elegans* who were given ageLOC Y-Span at the 0.01% and 0.03% doses. Further analysis using a log rank test (used to test for statistical significance) indicated that the animals that were fed the supplement at doses of 0.01% or 0.03% lived significantly longer than the control group that did not receive ageLOC Y-Span. The highest dose of 0.1% showed a survival curve similar to the control group.

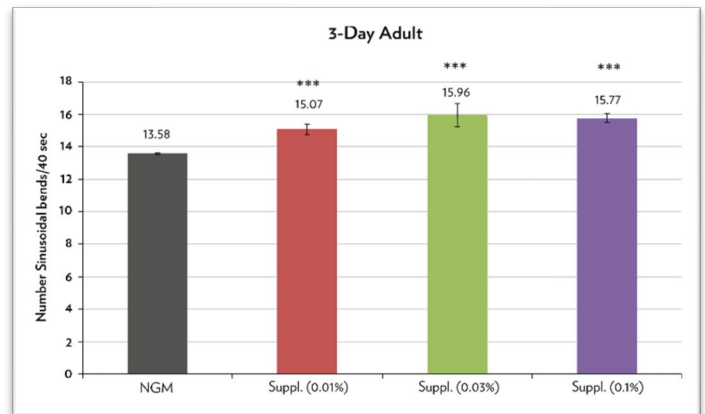
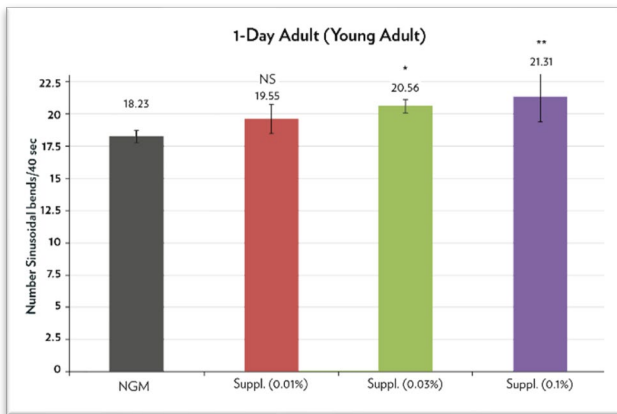


RESULTS – MOVEMENT

In this study, we measured body movements in terms of body bends, which is an indicator of vitality or youthfulness in *C. elegans*. We measured body movements on day 1 (young adult stage of *C. elegans*) and on day 3 (old adult stage of *C. elegans*). The time period for counting the number of body movements was 40 seconds for this study. The effect of the supplement was analyzed at doses of 0.01%, 0.03%, and 0.1%.

1-day movements were lowest in the control group and highest in the supplement group given 0.1%. The supplement group given 0.01% trended toward more movement but was not statistically significant compared to the control group. The supplement groups given 0.03% and 0.1% were both significantly higher than the control group.

3-day groups all had fewer bends or movement compared to 1-day groups, indicating signs of aging taking effect. The 3-day control group had the fewest bends compared to the 3-day groups who took ageLOC Y-Span. All supplement doses had significantly more bends at 3 days compared to the control group.



CONCLUSION

ageLOC Y-Span given to *C. elegans* at specific doses was shown to increase lifespan and improve vitality in young and older adults. The percent increase in longevity is significant for two of the three doses shown, and the improved functional effects provide evidence that gene expression changes with the supplement are supported by functional outcomes in a well-accepted model of aging. Similar research done at the Center for Anti-Aging Research in Shanghai on lifespan and vitality provided additional insights (Yen et al., 2018). Further research is required to see if these effects also occur in other aging research models, primates, or humans. This study is evidence of Nu Skin's commitment to science and further adds to the body of evidence of health and wellness benefits of ageLOC Y-Span.

DISCLAIMER: This study was conducted in C. elegans, not humans. The findings in this scientific study are not product claims; rather, they serve to further validate the science behind ageLOC Y-Span. For approved product claims consult official marketing materials.

(Jun 2020)

References:

Y. Ren, J. Lu, D. Stevenson, M. Bartlett. Lifespan and Healthspan Extension Effect of a Novel Nutritional Blend on *C. elegans* Supporting Aging Defense Mechanisms. Poster presented at Nutrition 2018 in Boston on June 8-12, 2018.

Serna, E.; Mastaloudis, A.; Martorell, P.; Wood, S.M.; Hester, S.N.; Bartlett, M.; Prolla, T.A.; Viña, J. A Novel Micronutrient Blend Mimics Calorie Restriction Transcriptomics in Multiple Tissues of Mice and Increases Lifespan and Mobility in *C. elegans*. *Nutrients* 2020, 12, 486.

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