How maternal caring affects longevity

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When it comes to longevity, everyone wants to live for eternity. Longevity research has often led scientists to dark alleys with several candidate molecules responsible for aging. Pioneering genetic studies on model organisms like *Caenorhabditis elegans* and *Drosophila melanogaster* discovered the most well-conserved longevity pathways, mainly caloric restriction and the insulin/insulin-like growth factor 1signaling pathways.[1-4] Apart from these complex molecular circuitries that drive longevity, a recent study published by Zipple et al.[5] (Proceedings of the National Academy of Sciences, 2024) showed that the relationship between mother and grandmother with the child may determine why some animals and humans live longer than expected for their size. Animals that spend more time with their mothers during early life end up living longer but with reduced capacity to produce offspring.

This exciting piece of research has far more consequences than just these findings. It implies the importance of the mother in one's life and the role of parental care in providing longevity and reproductive success.

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REFERENCES

1. Chistiakova OV. Signal pathway of insulin and insulin-like growth factor 1 (IGF-1) as a potential regulator of lifespan. Zh Evol Biokhim Fiziol. 2008;44(1):3-11.
2. Shimokawa I. Regulation of aging processes: A perspective of dietary restriction models. Yakugaku Zasshi. 2024;144(4):403-409. https://doi.org/10.1248/yakushi.23-00165-3
3. Cheng CL, Gao TQ, Wang Z and Li DD. Role of insulin/insulin-like growth factor 1 signaling pathway in longevity. World J Gastroenterol. 2005;11(13):1891-1895. https://doi.org/10.3748/wjg.v11.i13.1891
4. Lapierre LR and Hansen M. Lessons from *C. elegans*: Signaling pathways for longevity. Trends Endocrinol Metab. 2012;23(12):637-644. https://doi.org/10.1016/j.tem.2012.07.007
5. Zipple MN, Reeve HK and Peniston OJ. Maternal care leads to the evolution of long, slow lives. Proc Natl Acad Sci. 2024;121(25):e2403491121. https://doi.org/10.1073/pnas.2403491121

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