

MidLife Matters – Evolution of Menopause – January 7, 2020

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Menopause marks the end of a woman's menstrual period and means that she is no longer able to have children. Humans are relatively unique in that they live a third to half their lives after menopause. Most other animals on the planet are able to reproduce until death or die very shortly after they stop being able to have children; this is true even of primates, our closest relatives. The only other species to live on after menopause are a few kinds of whales and one kind of aphid.

According to the theory of evolution, the goal of all creatures is to have children. Whatever strategy it takes for a species to survive and have successful children is maintained in a population through natural selection. So, why do human females lose the ability to have children, or another way of thinking about it, why would women live for a long time after their fertility stops?

Exploring evolution in more detail, we understand that the purpose isn't simply to have as many children as possible, but to have children who will successfully reproduce themselves. In other words, you don't just want to have kids, you want to have grandkids and so on, meaning your own genes continue on far into the future. This is the basis for the most popular explanation of menopause's purpose: the "Grandmother Hypothesis". A long life after menopause allows a woman to increase the survival of her grandchildren by helping to raise and provide for them.

A study of orcas in B.C found that when mothers and daughters do breed at the same time, the mother's children are 1.7 times more likely to die than the daughter's children. This means that instead of competing against her daughter for resources, a female orca benefits more from ensuring the success of her grandchildren. Older female whales also play an important role in knowledge sharing that helps the entire pods survival.

Looking at humans, data from Finland before the Industrial Revolution showed that children were more likely to survive until adulthood if their grandmothers were still alive.

Research on the Hazda, a hunter-gatherer society living in modern-day Tanzania, shows that post-menopausal women bring in considerably more calories than any other member of their society. The body weight of grandchildren in this society increases in proportion to how much their grandmothers contribute. In other similar societies, like the Gabbra and the Aché, a higher percentage of grandchildren survive if they have grandmothers.

Menopause can sometimes be viewed as an end and a loss of purpose, but research and evolution suggest quite the opposite, offering one of many reasons to value this next phase of life.

Resources:

<http://nautil.us/issue/36/aging/what-good-is-grandma>

<https://www.nationalgeographic.com/science/phenomena/2013/04/18/why-menopause/>

<https://theheartysoul.com/menopause-could-explain-human-evolution/>

<https://www.cbc.ca/news/technology/how-grandmother-orcas-help-explain-the-evolution-of-menopause-1.3931600>