

Are elder siblings helpers or competitors?

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Credit: Firemom

Having elder siblings decreases mortality risk in childhood, but same-sex elder siblings are associated with lower marriage rates and fewer children for their younger siblings in adulthood, according to the results of a long-term study published in *Proceedings of the Royal Society B* today.

Analysis was carried out at the University of Sheffield, on a large

demographic dataset of preindustrial humans from Finland to study the effect of elder siblings. The findings demonstrate that family members often both cooperate and compete, and the benefits and costs of having elder siblings may vary across life and between sisters and brothers.

Aïda Nitsch and her colleagues found that the presence of elder siblings improved the chances of younger siblings surviving to [sexual maturity](#), suggesting that despite a competition for parental resources, they may help rearing their [younger siblings](#).

Their study of around 10,000 [males and females](#) and all of their nearly 30,000 offspring from 1750-1958 also found, however, that after reaching sexual maturity same-sex elder siblings' presence was associated with reduced reproductive success in the younger sibling, indicating the existence of competition among same-sex siblings.

Overall, lifetime fitness was reduced by same-sex elder siblings' presence and increased by opposite-sex elder siblings' presence. The study shows opposite effects of sibling interactions depending on their life-stage, and highlights the need for using long-term fitness measures, such as those used in this study, to understand the selection pressures acting on sibling interactions.

Interactions between siblings can have long-term psychological and developmental implications. Studying such interactions is pivotal for understanding how humans evolved such large and complex families.

More information: Nitsch, A., Faurie, C. and Lummaa, V. Are elder siblings helpers or competitors? Antagonistic fitness effects of sibling interactions in humans, *Proceedings of the Royal Society B*.

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