

Research finds clue to why females live longer than males

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Drosophila. Credit: Wikipedia

A study from the University of Exeter has found that male flies die earlier than their female counterparts when forced to evolve with the pressures of mate competition and juvenile survival. The results could help researchers understand the mechanisms involved in ageing.

The research, published in the journal *Functional Ecology*, used

populations of the fly *Drosophila simulans* that had evolved under different selection regimes. The study shows that mate competition (sexual selection), along with survival (natural selection), is tougher on male ageing than it is on females reducing their lifespan by about a third.

Some species, like the flies in this study, age quickly over a number of days while others - including some trees and whales - age slowly across centuries.

Professor David Hosken from Biosciences at the University of Exeter said: "We found dramatic differences in the effects of sexual and natural selection on male and female flies. These results could help explain the sex differences in lifespan seen in many species, including humans, and the diverse patterns of ageing we observe in nature."

The flies were subjected to elevated or relaxed sexual and natural selection and left to evolve in these conditions. To elevate sexual selection groups of males were housed with single females. A stressful temperature was used to elevate natural selection.

Males court females by singing, dancing and smelling good but their efforts come at considerable cost and this cost is amplified when they also have to cope with stressful temperatures.

The results of the study showed that under relaxed sexual and natural selection, male and female [flies](#) had very similar lifespans - around 35 days. However males that evolved under elevated sexual selection and elevated natural selection had a much shorter lifespan - just 24 days - and died seven days earlier than females under the same conditions.

Both [sexual selection](#) and [natural selection](#) were found to affect lifespan but their effects were greatest on males. The findings show that the sexes can respond differently to the same selection regimes.

Provided by University of Exeter

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