

Stress in early life reduces life expectancy - and that of partners

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(PhysOrg.com) -- A new study from the University of Glasgow, published today in the *Proceedings of the Royal Society B: Biological Sciences*, suggests that our expectancy is likely to be strongly affected by how much stress we were exposed to early in our lives. And worse still, the study also shows that early life stress experienced by our mates could also be affecting how long we are likely to live.

The study, conducted by a team led by Professor Pat Monaghan, use a small bird, the zebra finch. The way in which the body responds to stress is essentially the same in all the higher vertebrate including humans and [zebra finches](#), like humans, also form strong bonds with their mates.

The researchers imitated a [stressful environment](#) by giving half of the [birds](#) in the study a natural dose of stress hormones for a two week period when they were chicks, while the other half were not dosed. After this, all the birds were kept in the same stress-free environment until they became adults. Their greater exposure to stress in [early life](#) made the exposed birds more reactive to stress when they became adults – they reacted much more than the ‘laid-back’ birds who had not been given the stress hormones in early life. While this increased sensitivity might be a good thing for birds who would want to avoid being eaten in an environment full of predators, increased exposure to [stress hormones](#) is known to be bad for health.

The birds were then formed into pairs, allowed to breed and their lifespan was monitored. The results showed that the birds which had

been exposed to a period of stress as chicks had much shorter lives once they became adults - but so also did their mates even if the mate was an unexposed bird. The worst case scenario was when two birds that had experienced stress in early life were mated to each other, and males and females were affected in the same way.

The result of the study, were surprising to the scientists. “Other research led us to expect that increased stress exposure in early life would reduce adult lifespan’, said Professor Pat Monaghan, “but we were not expecting such a big effect on breeding partners. Unstressed birds had mortality rates that were four times higher than normal if they were simply given partners that had experienced stress earlier in their lives.”

The research team believes that part of the reason for the partner effect might be that these jittery individuals are not very comforting to be with. According to Professor Monaghan, “The take home message is that the wrong kind of partner can be very bad for your health.”

More information: The paper, ‘For better or worse: reduced adult lifespan following early stress is transmitted to breeding partners’ was funded by the Biotechnology and Biological Sciences Research Council, and is published in *The Proceedings of the Royal Society B: Biological Sciences*.

Provided by University of Glasgow

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