

Back off: Female chimps stressed out by competing suitors

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For female chimpanzees, being around rowdy males is disadvantageous when foraging for food, an effect that can interfere with reproductive ability. Credit: Ronan Donova

Being the center of attention can have its drawbacks. For female chimpanzees, being around too many rowdy males is disadvantageous when foraging for food, an effect that can ultimately interfere with her reproductive ability. These are some of the findings of an 11-year-long study of wild East African chimpanzees in Uganda, led by Melissa Emery Thompson of the University of New Mexico in the US. It is published in Springer's journal *Behavioral Ecology and Sociobiology*.

Female [chimpanzees](#) have an exceedingly slow reproductive schedule, and only give birth every five to seven years. When ready to reproduce, [females](#) display very large swellings of their genitals and often do so for several months before conceiving. Male chimpanzees compete quite fiercely – and in great numbers – for the attention of the rare female who might bear their offspring. The contested female may have little choice than to tolerate the attentions of these would-be suitors, as mating with many males ensures that their young are not killed by jealous males. However, all this harassment and jealous guarding by males can influence the ability of females to feed. Some females, such as those with young infants, can avoid this chaos, but only if there is high-quality food to be found elsewhere.

Emery Thompson and her team spent more than 11 years observing the daily interactions and diets of 50 members of the Kanyawara community of East African chimpanzees (*Pan troglodytes schweinfurthii*) in the Kibale National Park in Uganda. In the process, they collected urine samples from at least 25 females, either by capturing falling urine with a plastic bag or by pipetting urine from plants.

Laboratory tests gauged the levels of C-peptide (a by-product in the synthesis of insulin) and estrogen and progesterone (two ovarian steroids central to the reproductive cycle) in the urine of females. This showed that the more males gathered around a cycling or lactating female during a given month, the lower were her C-peptide levels. In contrast, the

number of females she associated with had no effect on these levels. Declining C-peptide levels mean that the female is spending more energy than she consumes, and can result in weight loss. In this study, C-peptide levels also predicted production of ovarian steroids, indicating an effect on reproductive ability.

"This has significant downstream effects on females' reproductive functioning and fertility rates, and demonstrates that the reproductive tactics of male chimps could put a damper on the ability of the female members of their species to conceive," says Emery Thompson.

The findings add to previous work by Emery Thompson's research group that showed how male sexual aggression on females increases the production of stress hormones.

More information: Emery Thompson, M. et al. (2014). Male Chimpanzees Compromise the Foraging Success of Their Mates in Kibale National Park, Uganda. *Behavioral Ecology and Sociobiology*. DOI: [10.1007/s00265-014-1803-y](https://doi.org/10.1007/s00265-014-1803-y)

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