

More omnivore dilemmas: Seasonal diet changes can cause reproductive stress in primates

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This is a blue monkey. Credit: Steffen Foerster

When seasonal changes affect food availability, omnivores like blue monkeys adapt by changing their diets, but such nutritional changes may impact female reproduction, according to research published November 28 in the open access journal *PLOS ONE* by Steffen Foerster from Barnard College, and colleagues from Columbia University and the

Smithsonian Institution.

The authors found that levels of fecal glucocorticoids (fGC), a stress marker, increased when female monkeys shifted their diet towards lower quality fallback foods, whereas the levels decreased when the monkeys had access to preferred foods like insects, fruits and young leaves.

They also found that lactating females and those in the later stages of pregnancy showed greater increases in the stress marker than females who were not in these stages of reproduction. According to the authors, their results suggest that these seasonal changes in [food availability](#) may affect inter-birth intervals in these primates, and also affect the timing of infant independence from mothers.

Foerster adds, "While it was interesting to find that even subtle changes in dietary composition may have strong effects on female reproductive decisions, it is equally noteworthy that [social stress](#) was almost entirely absent from blue monkey societies. Our study makes the point that integrating behavioral, ecological, and hormonal measures can reveal adaptive behavioral and [reproductive strategies](#) that would otherwise be difficult to discern."

More information: Foerster S, Cords M, Monfort SL (2012) Seasonal Energetic Stress in a Tropical Forest Primate: Proximate Causes and Evolutionary Implications. PLoS ONE 7(11): e50108.
[doi:10.1371/journal.pone.0050108](https://doi.org/10.1371/journal.pone.0050108)

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