

Boy or girl? Lemur scents have the answer

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A new study finds that a pregnant lemur's signature scent depends in part on whether she's carrying a girl or a boy. Credit: David Haring, Duke Lemur Center

Dozens of pregnancy myths claim to predict whether a mom-to-be is carrying a boy or a girl. Some say you can tell by the shape of a woman's

bump, or whether she craves salty or sweet.

Even ultrasound doesn't always get it right.

But for lemurs, the answer is in the mother's scent.

Duke University researchers report in the Feb. 25 issue of the journal *Biology Letters* that lemur moms carrying boys smell different from those carrying girls.

The results represent the first evidence in any animal species that a pregnant mother's scent differs depending on the sex of her baby, said Christine Drea, a professor of evolutionary anthropology at Duke.

Drea and co-author Jeremy Chase Crawford of the University of California, Berkeley used cotton swabs to collect [scent secretions](#) from the genital regions of 12 female ringtailed lemurs at the Duke Lemur Center in Durham, North Carolina, before and during pregnancy.

Cat-sized primates with long black-and-white striped tails, ringtailed lemurs produce a musky odor that researchers jokingly refer to as "eau de lemur."

The distinctive scent is a complex cocktail of pheromones and other chemicals that have been shown by previous studies to convey information about an animal's sex, fertility, and other qualities.

In this latest study, chemical analysis using gas chromatography and mass spectrometry revealed that the hundreds of ingredients that make up each female's scent change during pregnancy.

Expectant lemur moms give off simpler scents that contain fewer odor compounds compared with their pre-pregnancy bouquet—a change that

is more pronounced when the moms are carrying boys, Drea said.

The patterns correlate with changes in blood hormone levels, the researchers found.

Drea said hormones change dramatically during pregnancy, and girls and boys affect their mothers' hormones differently. "The difference in hormone profiles between pregnant lemurs carrying sons and those carrying daughters is dramatic," she said.

The researchers don't yet know why pregnant [lemurs](#) produce simpler scents, particularly when they're carrying sons.

"It could be that producing these compounds uses resources that are directed elsewhere when they're pregnant, especially if it's more energetically costly for a female to have a male pregnancy than a female pregnancy," Drea said.

More information: *Biology Letters*, Feb. 2015. [DOI: 10.1098/rsbl.2014.0831](#)

Provided by Duke University

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