

# Study reveals how families share microbes, even with dogs

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A study that began during the post-doctoral work of Northern Arizona University's Gregory Caporaso is shedding some light on how adults, and their dogs and kids, share microbial communities.

And while you can try to blame your spring cold on the youngster of the house, it's actually the family dog that contributes more to adults sharing their microbiomes with one another.

"What we've been learning is the [microbial communities](#) that live in and on our bodies can play a big role in our health," said Caporaso, assistant professor of biology. "What was exciting about this study was how cohabitation affected microbial communities. It's a unique data set."

We all have bacteria in our [digestive tract](#), but Caporaso explained that while any two humans are 99 percent identical in their genomes, their "gut communities" of bacteria may be up to 50 percent different. It's those differences that interest researchers, who seek to link them to the origins of obesity, [malnutrition](#) or even [colon cancer](#).

"What factors are driving the differences between the microbial communities in my gut and your gut? This study was an attempt to see if who you're living with is one of the factors," Caporaso said.

As it turns out, individuals from the same household—particularly couples—share more of their microbiome than they do with other individuals, and having a dog resulted in even a greater similarity

because of shared contact with the animal.

For the study, published in *eLIFE*, Caporaso assisted with data analysis and offered advice for statistical approaches. The senior author, associate professor Rob Knight of the University of Colorado Boulder, was Caporaso's post-doctoral adviser.

At NAU, Caporaso's lab develops an [open-source software](#) package that is a leader in the field for studying microbial communities.

"A lot of these studies are enabled by our advances in DNA sequencing," Caporaso said. "Bioinformatics techniques enable the analysis of the massive quantities of data typically involved in these studies."

Provided by Northern Arizona University

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