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We report and interpret carbon and nitrogen stable isotope and elemental evidence for diet and weaning among wild gelada monkeys (*Theropithecus gelada*). Feces increasingly are utilized as substrates for isotopic analysis among non-human primates. This paper also takes stock of what is known about fecal stable isotope data among primate taxa, and what remains incompletely understood.

In 2015-2016, 480 fecal samples of paired gelada mothers and offspring (median age: 18 months) were collected in Simien Mountains National Park in Ethiopia. Examining a subsample of 150 samples representing 46 dyads, we hypothesize that stable carbon and nitrogen isotope ratios ($\delta^{13}C$; $\delta^{15}N$) are significantly higher among infants compared with their mothers on the same sampling days, and that differences decrease and disappear as a function of infant age, reflecting weaning.

Mother-infant offsets in $\delta^{15}N$ ratios do not change with infant age (r^2=0.038; p=0.103), although $\delta^{13}C$ values of infants increase with age (r^2=0.161; p<0.001). Elemental data (carbon; nitrogen content of feces) give a good approximation of weaning status, with carbon-to-nitrogen ratios of feces increasing with infant age in a "weaning curve" (r^2=0.385; p<0.001). Isotope data are highly varied overall, and we discuss possible fractionation effects of the gelada gut microbiome.

We propose that expectations for trophic effects in fecal stable isotope and elemental data should be species-specific moving forward, and that isotopic and elemental data are best used in tandem.