

Franka S. Schaebs¹

¹ Max Planck Institute for Evolutionary Anthropology, Department of Primatology, Leipzig, GER

Correspondence: franka_schaebs@eva.mpg.de

Demographic factors influencing male wild white-faced capuchin endocrinology

In many social mammalian species, male dominance rank is positively correlated with reproductive success, while achieving and maintaining high dominance rank is correlated with steroid hormone levels of androgens and glucocorticoids. Alpha male white-faced capuchin monkeys (*Cebus capucinus*) have higher androgen and glucocorticoid levels than subordinates. However, how demographic factors such as group composition or alpha male tenure length influence steroid levels cannot be investigated in short-term studies. We analysed demographic and hormonal data (faecal androgen (fA) and faecal glucocorticoid (fGC) levels) collected over 5.5 years from 68 males out of ten social groups living at Lomas Barbudal Biological Reserve, Costa Rica. Alpha males had consistently higher fA levels than subordinate males, whereas fGC levels were only higher in alpha males during the first three years of their tenure as alpha. During male immigration male fA and fGC levels were significantly elevated independent of their dominance rank. The total number of males in the group did not affect male fA nor fGC levels. Conversely, a higher number of potentially fertile females led to significantly increased male fGC, but did not affect fA levels. Interestingly, male fA levels decreased during periods with high number of dependent infants in the group, suggesting that males might down regulate androgen levels to avoid a negative impact of androgens on paternal behaviour as proposed for other species, including humans. The results of our study emphasize the importance of long-term data collection to capture the dynamics between dominance status and hormonal correlates in socially living primates.