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Androgens predict parasitism in female meerkats: a new perspective on a classic trade-off

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Results: Relationships between social and reproductive status and FAM concentrations

For all females, the mean FAM concentration was 73.28 ng/g ± 7.40. In line with our previous study (1), FAM concentrations were greater in dominant (mean ± SE: 104.91 ng/g ± 16.46) compared to subordinate (mean ± SE: 59.13 ng/g ± 6.77) females (t_{53} = 2.71, P = 0.009); however, FAM concentrations varied widely between individual females of the same status (dominant T range: 19.55 - 279.43 ng/g; subordinate T range: 4.43 - 191.55 ng/g). In contrast to our previous findings (1), female FAM concentrations did not vary by reproductive state (P > 0.05) and this likely owes to the smaller sample size of the current, versus the previous, study.

Table S1. Factors associated with infection status in female meerkats (as determined by GLMs and GLMMs).

Parasite	Predictor[a]	Estimate (SE)	$\chi2$[b]	*p*
Toxocara suricattae[c]	FAM		0.106	0.744
	Social status	**1.052 (0.618)**	**2.909**	**0.088†**
	FAM:Status		0.207	0.65
Spirurida nematode[d]	**FAM**	**3.62 (1.39)**	**9.6745**	**0.002***
	Social status		2.791	0.095
	FAM:Status		2.298	0.125
Oxynema suricattae[d]	**FAM**	**2.556 (1.114)**	**6.646**	**0.01***
	Social status	**1.71 (0.861)**	**4.784**	**0.029***
	FAM:Status		0.261	0.609
Pseudandrya suricattae[d,e]	**FAM**	**2.74 (1.176)**	**7.081**	**0.008****
	Social status		0.351	0.55
Coccidia[d]	**FAM**	**2.836 (1.241)**	**8.44**	**0.004****
	Social status		0.007	0.935
	FAM:Status		0.674	0.412

Note. Factors in bold were included in the final model. Variance in infection with Strongylate nematode was low and precluded statistical analysis. Significance is marked as follows: $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\dagger}p < 0.1$.

[a] Social status comparisons are made against dominant females.

[b] $\chi2$ = likelihood ratio test statistic; d.f. = 1

[c] Results of a GLMM with Individual as a random factor.

[d] Results of a GLM.

[e] Low prevalence precluded our analysis of the FAM and status interaction.

Table S2. Factors associated with parasite abundance in female meerkats (as determined by GLMs and GLMMs).

Parasite	Predictor[a]	Estimate (SE)	χ2[b]	p
Strongylate nematode [c]	FAM		2.211	0.137
	Social status		0.419	.517
	FAM:Status		0.807	0.369
Toxocara suricattae [d]	FAM		0.478	0.49
	Social status		1.357	0.244
	FAM:Status		1.506	0.471
Spirurida nematode [d]	**FAM**	**1.722 (0.993)**	**3.101**	**0.078†**
	Social status		0.705	0.401
	FAM:Status		1.391	0.238
Oxynema suricattae [d]	**FAM**	**1.274 (0.433)**	**8.918**	**0.003****
	Social status	**0.675 (0.33)**	**4.08**	**0.043***
	FAM:Status		0.295	0.587
	Cov: Weight	**-0.002 (0.001)**	**5.383**	**0.02**
Pseudandrya suricattae[d]	**FAM**	**1.614 (0.927)**	**2.77**	**0.096†**
	Social status		0.056	0.813
	FAM:Status		0.151	0.698
Coccidia [d]	**FAM**	**1.068 (0.346)**	**8.902**	**0.003****
	Social status		0.077	0.782
	FAM:Status		0.093	0.76

Note. Factors in bold were included in the final model. Significance is marked as follows: $**p < 0.01$, $*p < 0.05$, $\dagger p < 0.1$.

[a] Social status comparisons are made against dominant females.

[b] χ2 = likelihood ratio test statistic; d.f. = 1

[c] Results of a GLMM with Individual as a random factor.

[d] Results of a GLM.

References

1. Davies C, Smyth KN, Greene LK, Walsh D, Mitchell J, Clutton-Brock TH, Drea CM. (In Revision for Scientific Reports) Exceptional endocrine profiles characterize the meerkat: sex, status, and reproductive patterns.