**SUPPLEMENTARY ONLINE MATERIAL**

**Live long and prosper: durable benefits of early life care in banded mongooses**

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**SUPPLEMENTARY TABLES**

Table S1.

Developmental effects of care received during the escorting period (< 90 days of age), results from binomial GLMMs with litter and social group as random factors. (a) Immediate survival: the probability that a pup survives until nutritional independence at 90 days (b) Post-escorting survival: the probability that after the escorting period, a pup survives the period to maturity at one year of age. Nonsignificant interactions were dropped to allow significance testing of main terms, but models were not simplified further. For categorical fixed factors, parameter estimates show the estimated difference between the level in [brackets] and the level represented by the intercept. To improve model convergence, pup weight and rainfall were standardised by subtracting the mean and dividing by standard deviation.

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| --- | --- | --- | --- | --- | --- |
| (A) Predictors of immediate survival | | |  |  |  |
|  | Fixed effects | β ± SE | χ21 | *P* |  |
|  | (intercept) | -0.875 ± 0.268 |  |  |  |
|  | Rainfall (std) | 0.511 ± 0.178 | 8.650 | 0.003 |  |
|  | Sex of pup [male] | -0.160 ± 0.214 | 0.565 | 0.452 |  |
|  | Body mass at emergence (std) | 0.834 ± 0.146 | 36.44 | 1.578×10-9 |  |
|  | Escorting index | 2.700 ± 0.384 | 58.89 | 1.671×10-14 |  |
|  | Sex × Escorting index§ | -0.725 ± 0.679 | 1.140 | 0.286 |  |
|  | Number of observations | 676 individuals, 120 litters, 11 packs | | | |
|  |  |  | | | |
| (B) Predictors of post-escorting survival to one year | | | | | |
|  | Fixed effects | β ± SE | χ21 | *P* |  |
|  | (intercept) | 0.029 ± 0.307 |  |  |  |
|  | Rainfall (std) | 0.206 ± 0.141 | 2.049 | 0.152 |  |
|  | Body mass at emergence (std) | 0.086 ± 0.140 | 0.376 | 0.540 |  |
|  | Escorting index | 0.107 ± 0.425 | 0.063 | 0.802 |  |
|  | Sex of pup [male] | 0.497 ± 0.238 | 4.383 | 0.036 |  |
|  | Sex × Escorting index§ | -0.430± 0.833 | 0.265 | 0.607 |  |
|  | Number of observations | 365 individuals, 100 litters, 11 packs | | |  |
|  | *§ not included in final model* |  | | |  |

Table S2.

Effects of care received during the escorting period (< 90 days of age) on age at first reproduction. Predictors of age at first observed oestrus (females) or mating behaviour (males). Results from GLMMs with litter and social group as random factors. For categorical fixed factors, parameter estimates show the estimated difference between the level in [brackets] and the level represented by the intercept. Nonsignificant interactions were dropped to allow significance testing of main terms, but models were not simplified further. To improve model fit, pup weight and rainfall were standardised by subtracting the mean and dividing by the standard deviation.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Age (months) at first oestrus (females) or mate guarding/pestering during group oestrus (males) | | | | | | |  |  |
|  |  | *Females* |  |  |  | *Males* |  |  |
|  | Fixed effects | β ± SE | χ21 | *P* |  | β ± SE | χ21 | *P* |
|  | (intercept) | 6.187 ± 0.145 |  |  |  | 6.232 ± 0.116 |  |  |
|  | Rainfall (std) | -0.068 ± 0.068 | 1.053 | 0.305 |  | -0.078 ± 0.063 | 1.592 | 0.207 |
|  | Body mass at emergence (std) | 0.032 ± 0.054 | 0.308 | 0.579 |  | -0.001 ± 0.057 | 0.001 | 0.999 |
|  | Escort index | -0.342 ± 0.145 | 5.160 | 0.023 |  | 0.026 ± 0.159 | 0.028 | 0.867 |
|  | Number of observations | 71 individuals, 51 litters, 8 packs | | |  | 86 individuals, 52 litters, 9 packs | | |

Table S3: Lifetime impacts of early-life care. Predictors of (a) total lifespan and (b) lifetime reproductive success in individuals reached maturity (i.e. lifespan > 365 days). Results from GLMMs with litter and social group as random factors. For categorical fixed factors, parameter estimates show the estimated difference between the level in [brackets] and the level represented by the intercept. Nonsignificant interactions were dropped to allow significance testing of main terms, but models not simplified further. To improve model convergence, weights and rainfall were standardised by subtracting the mean and dividing by standard deviation.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| (A) Predictors of lifespan | | | |  |  |  |  |  |  |
|  | Fixed effects | β ± SE | | χ21 | *P* |  |  |  |  |
|  | (intercept) | 6.945 ± 0.111 | |  |  |  |  |  |  |
|  | Rainfall | -0.014 ± 0.042 | | 0.119 | 0.730 |  |  |  |  |
|  | Body mass at emergence | 0.004 ± 0.045 | | 0.013 | 0.910 |  |  |  |  |
|  | Escorting index | -0.028 ± 0.132 | | 0.057 | 0.812 |  |  |  |  |
|  | Sex [male] | 0.049 ± 0.075 | | 0.393 | 0.531 |  |  |  |  |
|  | Sex × Escorting index§ | -0.426 ± 0.260 | | 2.722 | 0.098 |  |  |  |  |
|  | Number of observations | 212 individuals, 85 litters, 11 packs | | | |  |  |  |  |
|  | *§ not included in the final model* | | | | |  |  |  |  |
| (B) Predictors of lifetime reproductive success: model without offset | | | | | |  |  |  |  |
|  |  | | *Females* |  |  |  | *Males* |  |  |
|  | Fixed effects | | β ± SE | χ21 | *P* |  | β ± SE | χ21 | *P* |
|  | (intercept) | | -0.695 ± 0.414 |  |  |  | -1.276 ± 0.592 |  |  |
|  | Rainfall (std) | | 0.506 ± 0.237 | 4.905 | 0.027 |  | -0.349 ± 0.350 | 0.976 | 0.323 |
|  | Body mass at emergence (std) | | -0.461 ± 0.189 | 5.685 | 0.017 |  | 0.115 ± 0.235 | 0.238 | 0.626 |
|  | Escorting index | | 1.691 ± 0.506 | 12.388 | 0.0004 |  | -0.392 ± 0.560 | 0.491 | 0.483 |
|  | Body mass at one year (std) | | 0.476 ± 0.197 | 4.321 | 0.038 |  | 0.746 ± 0.233 | 11.027 | 0.0009 |
|  | Number of observations | | 76 individuals, 55 litters, 8 packs | | |  | 109 individuals, 61 litters, 9 packs | | |
|  |  | |  |  |  |  |  |  |  |
| (C) Predictors of lifetime reproductive success: model using lifespan as an offset | | | | | |  |  |  |  |
|  |  | *Females* | |  |  |  | *Males* |  |  |
|  | Fixed effects | β ± SE | | χ21 | *P* |  | β ± SE | χ21 | *P* |
|  | (intercept) | -1.094 ± 0.346 | |  |  |  | -1.989 ± 0.481 |  |  |
|  | Rainfall (std) | 0.310 ± 0.185 | | 2.972 | 0.085 |  | -0.342 ± 0.269 | 1.588 | 0.208 |
|  | Body mass at emergence (std) | -0.343 ± 0.160 | | 2.596 | 0.107 |  | -0.219 ± 0.218 | 1.016 | 0.313 |
|  | Escorting index | 0.859 ± 0.436 | | 4.122 | 0.042 |  | -0.276 ± 0.552 | 0.251 | 0.617 |
|  | Body mass at one year (std) | 0.533 ± 0.152 | | 4.934 | 0.026 |  | 0.508 ± 0.216 | 5.523 | 0.019 |
|  | Number of observations | 76 Individuals, 55 litters, 8 packs | | | |  | 109 Individuals, 61 litters, 9 packs | | |

Figure S1.