

SEMEN PARAMETERS IN CALORIC RESTRICTED RHESUS MACAQUES (*Macaca mulatta*).

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Lifespan extension and improved overall health and function are observed during caloric restriction (CR) in male mammals, but effects of this dietary intervention on male reproductive function remain undefined, particularly in primates. This study measured semen parameters in 13 year old male rhesus macaques (*Macaca mulatta*) fed control diets (CON; n=4) or calorie restricted at 30% CON (CR; n=4) for the previous eight years. Semen samples were collected via penile electroejaculation three times from each male over a period of 7 months. Specific analyses included macroscopic (appearance, color, weight, volume, osmolarity, pH) and microscopic (count, concentration, motility, viability, agglutination) parameters. Our preliminary findings indicate no significant differences ($p < 0.05$) between the two groups in the following ejaculate characteristics: weight (g; 0.950 ± 0.567 , CON vs. 0.905 ± 0.159 , CR); volume (mL; 0.337 ± 0.204 , CON vs. 0.268 ± 0.069 , CR); osmolarity (mOsm; 430 ± 43 , CON vs. 359 ± 15 , CR); pH (7.9 ± 0.3 , CON vs. 8.2 ± 0.1 , CR); count (sperm/ejaculate; $20.27 \times 10^6 \pm 13.40 \times 10^6$, CON vs. $13.48 \times 10^6 \pm 3.10 \times 10^6$, CR); concentration (sperm/mL; $47.66 \times 10^6 \pm 9.21 \times 10^6$, CON vs. $42.81 \times 10^6 \pm 4.38 \times 10^6$, CR); motility (%; 64 ± 13 , CON vs. 56 ± 11 , CR); or viability (%; 79 ± 3 , CON vs. 82 ± 6 , CR). Thus, moderate CR was neither detrimental nor beneficial to semen quality in adult rhesus monkeys based on the morphological parameters observed. This is the first study, to our knowledge, to address the effects of CR on male reproductive function in nonhuman primates. Whether CR impacts fertility in aging male macaques remains to be determined.