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## JOURNAL ARTICLE

# Effect of repeated testicular biopsy on testis function and semen quality in dogs

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The study was designed to quantitatively evaluate the effect of repeated testicular biopsy of avascular areas by the open method on spermatogenesis, semen quality, and sperm output in dogs. After a 5-week standardization period of semen collections 3x per week, 10 sexually mature Beagle dogs were divided into two groups, approximately equalized based on previous sperm output. Semen collections were continued for 20 weeks. One group was controls without treatment until unilaterally orchidectomized after weeks 16 and 20; a second group had one testis biopsied on weeks 1, 5, and 9 and removed after week 16, with the second testis removed after week 20. Sperm output per week during the summer declined in the control group from  $851 \times 10^6$  to  $725 \times 10^6$  (15%). The decline in the biopsied control group collected simultaneously was 22%, presumably reflecting a seasonal effect plus a possible small treatment effect. At 16 weeks, the testes removed from the controls averaged 7.1 g and the testes biopsied three times in the second group averaged 6.4 g ( $P > 0.05$ ). Scrotal-testicular measurements taken in live animals were correlated with testicular weights at orchidectomy ( $r = 0.81$ ). An average of 36.7 mg of tissue was removed at each biopsy, sufficient to evaluate 100 to >200 seminiferous tubules in cross-section. Sperm motility and frequency of all stages of the cycle of the seminiferous epithelium were similar between control and biopsied dogs. It is concluded that repeated testicular biopsy of avascular areas can provide sufficient tissue for histopathologic evaluation without significant interference with spermatogenesis.

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