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## JOURNAL ARTICLE

# Altered basement membrane synthesis in the testis after tissue injury

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The basement membrane plays an important role in maintaining the structural and functional integrity of tissues. Altered basement membrane structure has been associated with severe functional impairment of the testis in several conditions, including vasectomy, autoimmune orchitis, cryptorchidism, and following x-irradiation. We have used efferent duct ligation as a model to examine seminiferous tubular basement membrane morphology, synthesis, and gene expression to determine whether altered basement membrane synthesis is responsible for the aberrant structures noted after tissue injury. On days 2 and 3 after ligation, both the seminiferous epithelium and the basement membrane appeared normal, but 7 days after ligation, the seminiferous epithelium began to degenerate. The basement membrane appeared detached from the epithelium, and redundant patches of basement membrane were observed adjacent to the Sertoli cells at 14 and 21 days postligation. Immunoprecipitation indicated an increase in laminin protein synthesis in the ligated tubules at the same time. Northern blot analysis showed increases in transcript levels for laminin as well as collagen IV and heparan sulfate proteoglycan. These data show that new protein synthesis is responsible, at least in part, for the duplication of the basement membrane coincident with the tissue damage caused by efferent duct ligation.

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