

## **Spermatogonial Transplantation and Serial Biopsies to Study and Enhance the Ram's Side of Sheep Reproduction.**

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We have examined two new ways to study postnatal maturation of the ram testis. The first of these is spermatogonial transplantation, or the transplantation of the sperm stem cells from one ram into the testis of another. Besides being a way to study maturation of these important cells, it will provide a direct means to transfer male genetics. We took two approaches: the first was to inject the spermatogonia into testis through the ex-current ducts of pubertal rams, and the second was low tech injection into testes of young (5 wk) ram lambs. Both worked, although efficiency is low. In the process we have learned to culture ram spermatogonia, and will continue to hone efficiency. The second new way to study maturation of ram testes is through serial biopsies that are coupled with blood samples and ultrasonography. Speed of maturation and final testicular capacity varies between individuals and seasons, therefore this study is aimed at finding associations within individuals that might then be manipulated to, for example, increase testicular capacity. Maturation and molecular expression were assessed in the biopsies, changes in echo-texture indicated overall structural changes, and hormones (FSH, TH) were measured in the blood. We are still processing the data from the first group of ram lambs, but will present early data that validates the serial biopsy approach.