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# Interactive Effects of Ethanol and $\Delta^9$ -Tetrahydrocannabinol on Endocrine Functions in Male Mice

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Exposure during sexual maturation to alcohol (ETOH) plus  $\Delta^9$ -tetrahydrocannabinol (THC) significantly decreased the weights of adrenals, kidneys, testes, and emptied seminal vesicles ten days after cessation of treatment. Administration of ETOH alone reduced kidney weights, and that of THC alone decreased emptied seminal vesicle weights. The effects of THC treatment may be reversible, since mice killed 24 hours after the last exposure also had significant reductions in kidney and testes weights. In contrast, perinatal exposure to ETOH or THC, alone or in combination, decreased testes weights in adulthood; THC alone reduced seminal weights, and ETOH or THC alone decreased kidney weights. Testosterone production *in vitro* was lower in testes obtained from mice perinatally exposed to ETOH, and plasma testosterone levels were reduced in all drug-exposed animals. Plasma LH levels were lower and FSH levels higher in mice perinatally treated with the combination of ETOH plus THC. Postcastration LH and FSH levels were elevated in THC-exposed mice. Exposure to ETOH or THC, alone or in combination, influences the development of male reproductive function in mice.

**Key words:** ethanol,  $\Delta^9$ -tetrahydrocannabinol, testes, *in vitro* testosterone production, plasma testosterone, LH, kidney, adrenal, seminal vesicles

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