

## Effects of Genistein on the Development of the Male Reproductive System

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Phytoestrogens, a class of endocrine disruptors, are naturally plant-derived, bind to the estrogen receptor as either agonists or antagonists. These chemicals are plant-derived hence; exposure to them is primarily through the diet. In particular, the phytoestrogen genistein is a significant component of these dietary exposures, including soybean-derived foods with high genistein concentrations such as tofu and soy-derived infant formula. Genistein is known to have weak estrogenic effects which may disrupt the male reproductive development. This study examined the effects of genistein on the development of the male reproductive system of Sprague-Dawley (SD) rats mainly on growth and regression of the gubernaculum and descent of the testis. Time-mated pregnant rats were randomly assigned to groups of 4 and treated by oral gavage with genistein in vehicle (Tween80) at 0, 0.1, 1 and 10 mg/kg/bwt/day from gestation day 10 to day 21. The offspring were sacrificed at various stages. The body weights (BW) and anogenital distance (AGD) of the male pups were measured prior to necropsy. Specimens were dissected and fixed in formalin for morphological and morphometric assessment. Genistein treatment in all groups has no effect on gestation length, mean maternal weight gain, litter size and sex ratio. However, in the high-dose group, the pups had significantly lower mean BW and reduced AGD compared to the control group on postnatal day 12 ( $p < 0.05$ ). No histopathologic effects were observed in the testis, epididymis and gubernaculum (cone and cord). In conclusion, gestational exposure of rats to genistein at 0.1, 1 and 10mg/kg has no effect on reproductive system of SD rats.