Endocrine disrupting effects in rats perinatally exposed to a dietary relevant mixture of phytoestrogens - DTU Orbit (16/12/2018)

Endocrine disrupting effects in rats perinatally exposed to a dietary relevant mixture of phytoestrogens

Dietary phytoestrogens may prevent certain human diseases, but endocrine activity has been reported in animal studies. Sprague-Dawley rats were exposed perinatally to a 1-, 10- or 100-fold “high human dietary intake” mixture of 12 phytoestrogens consisting of mainly the lignan secoisolarici resinol and the isoflavones genistein and daidzein. This mixture induced persistent adverse effects, as adult male mammary glands showed hypertrophic growth. A reduced anogenital distance in newborn males indicated an anti-androgenic mode of action. Testosterone levels, testis and prostate weights, and expression of selected genes in testis and prostate were unaffected. Decreased serum estradiol was seen in genistein-exposed dams. This study indicated adverse effects at high intake levels in rats, but does not provide evidence for risk of phytoestrogen-mediated endocrine disruption at normal human dietary consumption levels. Further studies are warranted to increase the knowledge upon which risk assessment on dietary phytoestrogen exposure during pregnancy and infancy is based.

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