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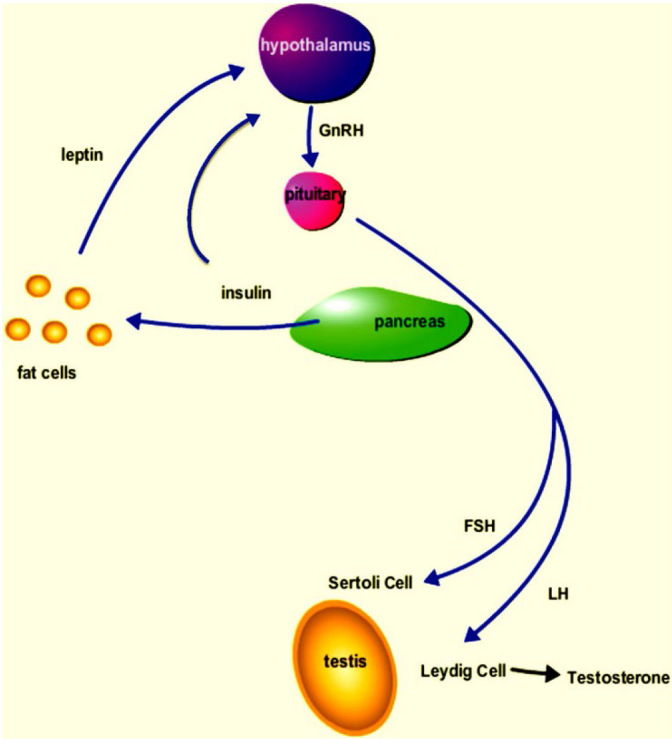
Effects of concomitant diabetes mellitus and hyperthyroidism on testicular and epididymal histoarchitecture and steroidogenesis in male animals

Keywords: Diabetes, Hyperthyroidism, Testicular and Epididymal morphology

Research Summary

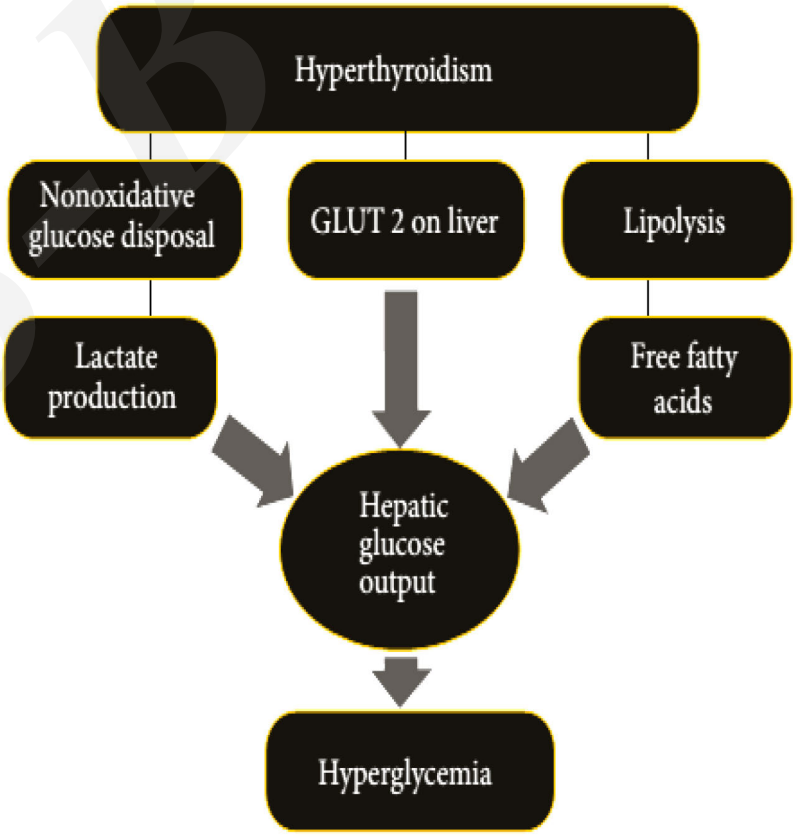
This research investigated the effects of concomitant diabetes and hyperthyroidism, as well as their subsequent metabolic effects in terms of abnormalities in reproduction and fertility of mice, and summarized features are as following:

- **Diabetic-plus-hyperthyroid model**
- **Role of insulin and T4 in spermatogenesis**
- **Body, testis and epididymal weights**
- **Food and water consumption indexes**
- **Blood glucose level**
- **Serum hormonal profiles through RIA**
- **Histomorphometric analysis of testis and epididymis**



Innovation points

- **Thyroid hormones could exert a transient effect on blood glucose homeostasis**
- **Increased luminal size of seminiferous tubules, along with decreased epithelial height and atrophic changes in germinal stem cells in the testes.**
- **Hyperthyroidism elevated the serum testosterone levels and produced critical damages to the histoarchitecture of the epididymis.**



Innovation points

- **Thyroid hormones can directly affect the sensitivity of gonadotrophs**
- **STZ-diabetes along with thyrotoxicosis affected the histoarchitecture of epididymis, by the loss of stereocilia, clumping of epithelial cells, lipid vacuolization along with inflammatory infiltrations and exfoliated cells plus round spermatids with cribriform changes.**