

[Lipids](#). 1984 Aug;19(8):609-16.

The effects of hypophysectomy and testosterone treatment on the composition and metabolism of testicular lipids.

[Marzouki ZM](#), [Coniglio JG](#).

Abstract

The effects of hypophysectomy and of testosterone administration on lipid composition and metabolism of rat testicular tissue have been investigated. Increased concentrations of triacylglycerols and cholesterol were observed in testes of hypophysectomized compared to control (non-hypophysectomized) rats on the eighth day posthypophysectomy. Administration of testosterone maintained the concentrations of these lipids at about normal levels. The concentration of phospholipids was not affected by the hypophysectomy. Incorporation of ^{14}C from 1-[^{14}C] linoleate into testicular lipids was determined 24 hours after intratesticular injection. In hypophysectomized compared to control rats there was more ^{14}C in C 16:0, C 20:2 and C 20:3 and less ^{14}C in C 20:4 and C 22:4 of both phospholipids and triacylglycerols. After intratesticular injection of 1-[^{14}C] eicosatrienoate there was more ^{14}C in C 16:0 and C 20:3 and less ^{14}C in C 20:4 and C 22:4 of both phospholipids and triacylglycerols of hypophysectomized compared to control rats. Intratesticular injection of 1-[^{14}C] arachidonate resulted in less ^{14}C incorporation in C 22:4 in testes of hypophysectomized than in those of control rats. Treatment with testosterone did not affect the metabolism of any of the ^{14}C -substrates. These results indicate that the testicular desaturation of C 20:3 to arachidonate, requiring a $\Delta 5$ desaturase, is inhibited by hypophysectomy and that testosterone by itself may control the concentrations of some testicular lipid classes but not the metabolism of the polyenoic acids.