

[Saudi Med J](#). 2002 Jan;23(1):82-6.

Effect of dietary zinc deficiency on rat lipid concentrations.

[Khoja SM](#), [Marzouki ZM](#), [Ashry KM](#), [Hamdi SA](#).

Department of Biochemistry, King Abdulaziz University, PO Box 6781, Jeddah 21452, Kingdom of Saudi Arabia. Skhoja@kaau.edu.sa

Abstract

OBJECTIVE:

Evaluation of the lipid profile in serum, liver, and testis of rats fed marginal and severe zinc deficient diets.

METHODS:

Three groups of rats were treated for 8 weeks with normal diet, marginally zinc deficient diet and severely zinc deficient diet. Lipid concentrations were measured in serum, liver, and testis of these groups.

RESULTS:

The concentrations of serum lipids were not significantly altered between marginally zinc deficient diet treated and control rats. However, in rats treated with severely zinc deficient diet, the concentrations of serum total cholesterol, high density lipoprotein cholesterol and phospholipids were significantly increased ($P < 0.01$) and ($P < 0.001$), whereas the concentration of triacylglycerol was significantly decreased ($P < 0.01$). However, low-density lipoprotein cholesterol concentration was non-significantly different from controls. The concentrations of liver total cholesterol, triacylglycerol and phospholipids were significantly decreased ($P < 0.001$) in rats treated with severely zinc deficient diet. The testicular concentration of total cholesterol was increased but this increase was non-significantly different from controls, whereas the testicular concentrations of triacylglycerol and phospholipids were significantly decreased ($P < 0.001$) in rats treated with severely zinc deficient diet.

CONCLUSION:

These results suggest that a marginally zinc deficient diet does not play a significant role in altering rat lipid concentrations. However, the changes in serum lipid concentrations could be related to those changes in tissue lipid concentrations