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Ministry of Higher Education  
& Scientific Research  
University of AL-Muthanna  
College of Science  
Department of Biology



## Relationship between some Hormones and Biochemical Parameters in Diabetes Mellitus Type 2 patients in AL-Muthanna province -Iraq

### A Thesis

submitted to the Council of College of Science University of  
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for the Degree of Master of Science in Biology / Zoology.

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## **Abstract**

This study aimed to evaluate the relationship between serum leptin, T3, T4, TSH, Insulin hormones levels, and lipid profile levels in type 2 diabetes mellitus patients.

Study was performed in the Diabetes and Endocrine Center at Al-Husain Teaching Hospital. The patients and control groups were with age ranged between (40-83) years. Study was carried out on 60 patient with type 2 diabetes mellitus (28 male and 32 female) and 20 apparently healthy subjects (10 male and 10 female) with as control group. Total cholesterol, TG, high density lipoprotein cholesterol (HDL-C), and FBS, were measured spectrophotometer.

Leptin, T3, T4, TSH, and insulin measurements were carried out using ELISA technique. Both patient and control groups were classified according to obesity, age, and gender .

Results of the present study show that leptin hormone was significantly high in serum of type 2 diabetic patients group compared with control group ( $P < 0.05$ ),

also there was a significant gender difference (female more than male) and significant positive correlation with body mass index and body fat. Results also show that mean value of serum insulin , TSH hormones and FBS were significantly high ( $P < 0.05$ ), while T3 and T4 decrease significant ( $P < 0.05$ ) in type 2 diabetic patients group and compared with control group.

Serum LDL-cholesterol and TG were significantly high in type 2 diabetic patients group compared control group ( $P < 0.05$ ) for LDL-cholesterol and ( $P < 0.05$ ) for TG , while serum HDL-cholesterol level was lower in NIDDM patients group compared with control group but shows no significant difference., also cholesterol and vLDL-cholesterol were

higher in NIDDM patients group compared with control group but both these shows no significant difference.