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## Association of TCF7L2 gene polymorphisms with T2DM in the population of Pakistan

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### **Abstract**

**Objective:** The aim of this study was to investigate the association between the rs7903146 polymorphism in the TCF7L2 gene and type 2 diabetes mellitus, in Pakistani population. **Materials and methods:** The TCF7L2 rs7903146 polymorphism was genotyped in 400 type 2 diabetic patients and 100 non-diabetic subjects. The polymorphism was genotyped by Real-Time PCR using TaqMan probes. Odds ratios (OR) and 95% confidence intervals (CI) were calculated for additive, recessive, and dominant inheritance models. **Results:** Genotype and allele frequencies of the rs7903146 polymorphism differed significantly between type 2 diabetic patients and non-diabetic subjects ( $P = 0.001$  and  $P = 0.0001$ , respectively). The frequency of the minor allele was 32% in type 2 diabetes group and 25% in non-subjects, and this allele was significantly associated with type 2 diabetes risk (OR = 1.41, 95% CI 1.13 – 1.69 for the dominant model of inheritance). Moreover, the T/T genotype was associated with a higher risk for type 2 diabetes (OR = 1.79, 95% CI 1.1-2.1) than the presence of only one copy of the T allele (OR = 1.31, 95% CI 1.2-1.5). Both results were adjusted for age and gender. **Conclusions:** Our results confirm the association between the TCF7L2 rs7903146 polymorphism and increase risk for type 2 diabetes in Pakistani population.

**Keywords:** Diabetes, polymorphism, risk alleles

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