

# 17<sup>TH</sup> GLOBAL DIABETES CONFERENCE & NURSING CARE

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## Fatty acid profile and genetic polymorphisms (FADS1, FADS2, ELOVL2) in diabetic patients

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Diabetes constitutes a real problem of public health. Both genetic and environmental factors are involved in the etiology of diabetes. Several genes have been associated with increased risk of diabetes such as those encoding proteins involved in the mechanisms of desaturation and elongation of fatty acids. To search for a possible association between these rs174556 of the FADS1, rs174617C>T FADS2 and rs3756963C>T ELOVL2 genes polymorphisms and diabetes in Tunisian population, a case/control study was conducted. The genotyping was performed by PCR-RFLP method in 130 diabetic patients and 186 normal subjects. Obtained results showed that the polymorphisms of the genes *FADS1*, *FADS2* and *ELOVL2* are diabetes predisposing genes. An association was found between *FADS1*, *FADS2* and *ELOVL2* polymorphisms and severity of the diabetes. Individuals who carried two risk genotypes and three risk genotypes had a higher risk of diabetes than those who did not carry any risk genotypes of the three genes. To search a correlation between the three polymorphisms and the fatty acid profile, no significant difference was found for the different fatty acids analyzed between diabetic patients and controls. On the other hand, fatty acids [vaccenic, linoleic, linolenic, Dihomo- $\gamma$ -linolenic (DGLA), Docosatetraenoic, Eicosapentaenoic (EPA), Clupanodonic (DPA) and Docosahexaenoic (DHA)] are significantly correlated with diabetes. An association was found between the three polymorphisms and fatty acids studied ( $p < 0.05$ ). In conclusion, further studies of the relationship between the polymorphisms of these three genes and the fatty acid profile are warranted, for better understanding their roles in diabetes.

### Biography

Raja Chaaba has completed her PhD in Biological Engineering in 2006 and is interested in research about lipids, diabetes and cardiovascular disease. She is a Member of research laboratory "Nutrition-Functional Foods and Vascular Health", Faculty of Medicine, Monastir, Tunisia. She is an Assistant Professor in Superior Institute of Applied Sciences and Technology, Mahdia, Tunisia.

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