

## **Family history is strongly associated with diabetes in the mixed ancestry population of Cape Town, South Africa.**

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International Diabetes Federation (IDF): 20th World Diabetes Congress Montreal, Canada 18 – 22 October 2009 <http://www.eubirod.eu/documents/papers/IDFMontreal09abstractbook.pdf>

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**Background and aims:** has been recognized as a global epidemic with its prevalence increasing at a rapid rate both in developed and developing countries. The mixed ancestry population has been shown to have one of the highest incidence of diabetes in South Africa. A positive family history has been hypothesized to be a significant risk factor in the development of type 2 diabetes.

**The objective of the study** was to determine factors that may contribute to the high prevalence of diabetes in the mixed ancestry population of South Africa.

**Methods:** In a cross-sectional study, 600 subjects within the age group of 35-65 years who were randomly selected through multistage random sampling within the Bellville South area of Cape Town underwent an oral glucose tolerance test. Diabetes, IGT and IFG were determined using the revised WHO criteria. Subjects underwent several anthropometric measurements and demographic, family, health, lifestyle data were extrapolated by use of a questionnaire. Smoking and alcohol consumption were assessed by means of a questionnaire. To validate subjects' responses, urine cotinine and serum GGT levels were measured for tobacco and alcohol consumption.

**Results:** Overall the crude prevalence of diabetes was 25.6 % of which half were newly diagnosed whilst the other half were self reported diabetics. IGT was present in 4.0% whilst IFG was in 3.5%. Self-reported smoking correlated with urine cotinine levels. Though alcohol consumption was significantly higher in females, gamma-GT levels of males were significantly higher than females,  $p < 0.05$ . Only 5.1% of individuals with a family history of diabetes did not have either diabetes, IFG or IGT. Females were significantly more obese than males in all age groups 35-45, 46-55 and 56-65,  $p = 0.002$  and  $0.000$  and  $0.031$  respectively. 57% of diabetic individuals were obese whilst 27.6% were overweight. In a multinomial logistic regression analysis that adjusted for factors such age, sex, family history of diabetes, nicotine and GGT levels, weight and lipid levels, the father's family history of diabetes was strongly associated with the development of diabetes (odds ratio = 2.092, 95% CI 1.109 – 3.949,  $p = 0.023$ ). HDL cholesterol levels and younger age were negatively associated with diabetes. **Conclusions:** Our results suggest that there has been a sharp increase in the prevalence of diabetes with many being undiagnosed. In view of the strong association between a positive family history and the number of undiagnosed diabetics it is suggested that screening for diabetes, particularly in those with a positive family history, at each and every primary health care visit, may result in earlier treatment thereby controlling diabetic complications.