

# Screening of young Adults for Future Risk of Type 2 Diabetes Mellitus - A Big Concern for Society & Nation

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Type 2 Diabetes Mellitus (D.M.) is a leading cause of morbidity and mortality in developing countries like India. It comprises of a group of common metabolic disorders and is characterized by a state of chronic hyperglycaemia due to a defective production or action of insulin.

The rising prevalence of type 2 D.M. is closely associated with industrialization and socio-economic development. The recent World Health Organization report suggests that over 19% of the world's diabetic population currently resides in India. This translates to over 35 million diabetic subjects and this number is projected to increase to nearly 80 million by 2030.

Type 2 diabetes, which was a disease of the middle-aged and the elderly previously, has recently escalated in all the age groups and is now being identified in the younger age groups. It is of great concern as to how to prevent this "new epidemic" from destroying the future generations which include adolescents and children, especially in high-risk populations.

Unfortunately, more than 50% of the diabetic patients in India remain unaware of their diabetic status, which increases the risk of the development of diabetic complications in them. This underscores the need for mass awareness and screening programmes to detect diabetes at an early stage. For this purpose, we have used a simplified Indian Diabetes Risk Score (IDRS) [1] for the prediction of diabetes in undergraduate medical students. IDRS requires answers to three simple questions and a waist measurement.

In our study [2], we found that among 126 students, 8%, 79% and 13% were in high, moderate and low risk groups respectively for the development of type 2 D.M. This underscores the need for further investigations to detect diabetes at an early stage and to overcome the disease burden of diabetes in the future.

Environmental factors play a key role in the development of type 2 diabetes. Globalization and industrialization lead to an increase in the prevalence of obesity and the metabolic syndrome in adults and particularly, in children. The main causes are - increasing urbanization, nutrition transition and reduced physical activity.

Most of the children who develop type 2 diabetes have a family history of type 2 diabetes. It was found that 45–80% children had a parent with type 2 diabetes [3]. Upto 60%–90% of the youth who develop diabetes have acanthosis nigricans, a thickening and

hyper pigmentation of the skin at the neck and the flexural areas, which is due to insulin resistance. This manifestation is common at younger ages than at adulthood and so it can be used as a marker for the youth [4] who are at risk for type 2 diabetes.

The available data on the long-term complications of type 2 diabetes such as nephropathy microalbuminuria, hypertension, dyslipidaemia, atherosclerosis, polycystic ovarian syndrome and poor blood glucose control [5,6]. In young people underscores the severity of the disease. The persistence of obesity interferes with the patients' response to the treatment and it exacerbates the comorbidities .

This can be prevented in youth by addressing the epidemic of childhood obesity, as the economic cost of obesity and related diseases in the developing countries have meagre health budgets. Thus, there is an urgent need to initiate large-scale community intervention programs which focus on increasing the physical activity and healthier food options, particularly for children. The international health agencies and the respective government should intensively focus on primordial and primary prevention programs for obesity and the metabolic syndrome in children and young adults .

## REFERENCES

- [1] Mohan V, Deepa R, Deepa M, Somannavar S, Datta M.A simplified Indian Diabetes Risk Score for screening for undiagnosed diabetic subjects. *J Assoc Physicians India*. 2005 Sep;53:75.
- [2] Apoorva SV, Pranita A, Joshi AR. Evaluation of the risk for type 2 diabetes mellitus in medical students by using the Indian Diabetes Risk Score – step I. *Asian Medical Student Journal* .2012;11:2-12.
- [3] Liese AD, D'Agostino RB Jr, Hamman RF, Kilgo PD, Lawrence JM, Liu LL et al., The burden of diabetes mellitus among US youth: prevalence estimates from the SEARCH for Diabetes in Youth Study. *Pediatrics* 2006; 118; 1510-8.
- [4] Dean HJ, Flett B. The natural history of type 2 diabetes which was diagnosed in childhood: long term follow-up in the young adult years [abstract]. *Diabetes* 2002; 51: A24.
- [5] Eppens MC, Craig ME, Cusumano J. The prevalence of diabetes complications in adolescents with type 2 diabetes, which was compared with that in type 1 diabetes. *Diabetes Care* 2006; 29: 1300-6.
- [6] Krakoff J, Lindsay RS, Looker HC. The incidence of retinopathy and nephropathy in youth-onset diabetes, which was compared with that in adult-onset type 2 diabetes. *Diabetes Care* 2003; 26: 76-81.

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