

FITNESS OVER FATNESS: MULTIFACTORIAL FITNESS SCORE IS A BETTER PREDICTOR OF TYPE 2 DIABETES THAN BMI AND WHR

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Purpose: Morphometric indices of obesity such as body mass index (BMI), waist to hip ratio (WHR) are generally regarded as good predictors of type 2 diabetes. However, very small part of the variance in insulin resistance is explained by obesity. We tested whether components of fitness other than body weight and proportions are better predictors of T2DM in cross sectional data.

Methods: We sampled 273 non-diabetic and 56 type 2 diabetic mellitus (T2DM) patients from a fitness center attached to a general hospital in Pune, India. At this center every participant routinely undergoes a fitness test consisting of 15 different tasks which are graded to get a net fitness score. The total score reflects different components of fitness namely body proportions, body balancing ability, endurance, flexibility, nerve-muscle coordination, muscle strength, core strength and agility. **Results:** In the sample, the odds ratio of T2DM in the highest BMI quartile in comparison with the lowest was 2.06 whereas that across the lowest and highest fitness score quartiles was 9.52 after correcting the fitness scores for age. Cases of T2DM were well spread through most BMI range except the lowermost class whereas it occurred mostly in the lower half of the distribution of fitness scores. Different components of fitness were marginally correlated with each other and no single component predicted T2DM better than the total score. **Conclusions:** The multidimensional fitness score was a much better predictor of T2DM than obesity parameters in cross sectional data in the population sampled.