

An Empirically Derived Definition of Metabolically Healthy Obesity Based on Risk of Cardiovascular and Total Mortality

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Background: Obesity is considered an essential criteria to define Metabolic syndrome [MS]. However, there are individuals who have metabolic derangements despite a normal Body mass index [BMI] and vice versa. In this study of 2 cohorts, authors tried to find out factors defining metabolic risks beyond BMI.

Methods: Two cohorts, namely NHANES-III [12341 participants] and UK-Biobank [374079 participants] were included. Participants were categorized into BMI groups: normal weight (18.5-24.9), overweight (25.0-29.9), and obesity (30.0). Anthropometric and blood pressure (BP) measurements were conducted comparably in both cohorts. Blood samples were analyzed for triglyceride, total cholesterol, high-density lipoprotein cholesterol, glucose, and hemoglobin A1c levels. Insulin sensitivity was estimated with quantitative insulin sensitivity check index [QUICKI]. Metabolic health [MH] was defined as waist: hip ratio [<0.95 and 1.03 in females and males], systolic BP <130 or no use of BP medicines and no diabetes.

Main outcomes and measures: Cardiovascular disease mortality and total mortality.

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet



Can obese individuals be metabolically healthy?

Results:

1. Anthropometric and/or metabolic parameters significantly associated with cardiovascular diseases and total mortality were waist circumference, waist: hip ratio, QUICKI, diabetes, systolic BP >130 , use of antihypertensives, elevated fasting sugar/HbA1c/SGPT or CRP.

2. CVD mortality of individuals with metabolically healthy obesity [MHO] was not significantly increased compared with metabolically health normal weight participants.

Conclusion: This study developed a **new definition of metabolic health** to identify individuals with **MHO**, based on **self-reported diabetes, use of BP medication, systolic BP, and Waist-hip ratio.**

People with Metabolically healthy obesity (MHO) classified by this definition are not at increased risk for CVD or total mortality. Metabolically unhealthy individuals have a substantially higher risk, which is not explained by other conventional definitions of MH.

Key Message: Metabolic health in adults needs to be assessed independent of BMI, as **obese individuals may be metabolically healthy, and normal weight / over-weight persons may be metabolically unhealthy.**

EXPERT COMMENT

“Assessment of cardiovascular risk based on BMI is flawed. The proposed new definition of metabolic health in adults is simple, and correlates with the risk of cardiovascular mortality better than the BMI. Indians being ethnically at higher risk for metabolic syndrome; a large proportion may be suffering from metabolically-unhealthy-normal-weight. This study from adult population seeks attention from researchers in pediatric obesity to review the definition of metabolic syndrome and health.”

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With warm regards,

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Reference

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