Ann Saudi Med. 2010 Jul-Aug;30(4):257-64.

# Estimation of insulin resistance in non-diabetic normotensive Saudi adults by QUICKI, HOMA-IR and modified QUICKI: a comparative study.

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## Abstract

### BACKGROUND AND OBJECTIVES:

Identification of insulin resistance (IR) in the general population is important for developing strategies to reduce the prevalence of non-insulin-dependent diabetes mellitus (NIDDM). We used the original and a modified version of the Quantitative Insulin Sensitivity Check Index (QUICKI, M-QUICKI), and the Homeostasis Model Assessment of Insulin Resistance (HOMA-IR) to divide non-diabetic normotensive adults into high- (HIR) and low-insulin-resistant (LIR) subgroups to investigate similarities and differences in their characteristics.

### SUBJECTS AND METHODS:

Three hundred fifty-seven healthy adults aged 18-50 years were recruited randomly from health centers in Jeddah in a cross-sectional study design. Anthropometric and demographic information was taken. Insulin, glucose, lipid profile and free fatty acid were determined in fasting blood samples. M-QUICKI, HOMA-IR and QUICKI were calculated. Reported cut-off points were used to identify HIR subjects, who were then matched for age and sex to others in the study population, resulting in 3 HIR and 3 LIR subgroups.

### RESULTS:

Two hundred nine subjects satisfied the selection criteria. M-QUICKI correlated significantly (P=.01) with HOMA-IR and QUICKI values. Increased adiposity was the common characteristic of the three HIR

subgroups. HIR subgroups identified using M-QUICKI (97 subjects) and HOMA (25 subjects), but not QUICKI (135 subjects), had statistically different biochemical characteristics compared to corresponding LIR sub-groups.

## CONCLUSION:

Adiposity, but not sex, is a risk factor for IR in the studied population. Further studies are needed to choose the most appropriate index for detecting IR in community-based surveys