

# Insulin resistance as a risk factor for metabolic-associated fatty liver disease (MAFLD) in non-obese individuals

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## Abstract:

## Objective:

Metabolic associated liver disease (MAFLD) formally known as nonalcoholic fatty liver disease (NAFLD) affects about 20% to 30% of the global population and increases the risk for hepatic and extrahepatic complications, including cardiovascular disease, diabetes, and some types of cancer(1).

Although MAFLD is strongly associated with obesity, not all obese subjects will experience development of disease; conversely, a significant proportion of patients will have a normal body mass index (BMI) and are commonly referred to as having “lean MAFLD,” or MAFLD in a lean person. Aim of the study: determine insulin resistance as a risk factor in non-obese or lean MAFLD.

## Materials & Methods:

This is across sectional study conducted in tropical medicine department in cooperation with Endocrinology unit – internal medicine department Minia university hospital in the period from May to December 2021. It included 100 subjects, where clinical examination, anthropometric measurements, biochemical tests mainly fasting blood sugar, fasting insulin to detect HOMA IR,

ultrasonography and shear wave elastography were performed on the adult population ( $\geq 18$  years) with BMI  $\leq 25$ .

## Results:

Statistically significant difference in insulin resistance parameter which is HOMA-IR score by mean  $\pm$  SD between the 2 groups of MAFLD lean and non MAFLD lean subjects which was  $1.1 \pm 0.93$  in non MAFLD lean versus  $1.7 \pm 1.03$  in MAFLD which is statistically significant (P value = 0.05). Lean MAFLD more common in females, house wife and married.

## Conclusion:

Insulin resistance may be considered as risk factor in lean MAFLD patients.

## Keywords:

Insulin resistance, lean metabolic associated fatty liver disease, HOMAIR.