



# Weight-Adjusted-Waist Index in Relation to Liver Function and Non-Alcoholic Fatty Liver Disease

Sara Aref Hosseini<sup>1</sup>, Mehrangiz Ebrahimi Mameghani<sup>2\*</sup>

<sup>1</sup>Student Research Committee, Tabriz University of Medical Sciences, Tabriz, Iran

<sup>2</sup>Nutrition Research Center, Department of Biochemistry and Diet Therapy, Faculty of Nutrition and Food Sciences, Tabriz University of Medical Sciences, Tabriz, Iran

## OPEN ACCESS

### \*Corresponding Author:

Nutrition Research Center,  
Dept. of Biochemistry and Diet  
Therapy, Faculty of Nutrition  
and Food Sciences, Tabriz  
University of Medical Sciences,  
Tabriz, Iran

### Citation:

Aref Hosseini S, Ebrahimi  
Mameghani M. Weight-  
Adjusted-Waist Index in  
Relation to Liver Function and  
Non-Alcoholic Fatty Liver  
Disease. *Iranian biomedical  
journal* 2024; 28(7): 342.

## ABSTRACT

**Introduction:** Weight-adjusted-waist index (WWI), as a novel anthropometric index, has been suggested to reflect metabolic status in multiple disorders, especially in cardiometabolic and obesity-derived disorders. This study aimed to investigate whether WWI is related to liver function and non-alcoholic fatty liver disease (NAFLD).

**Methods and Materials:** The present cross-sectional study included 238 (105 male and 133 female) adults aged 18-70. Weight, height, and waist circumference (WC) were measured, and then, body mass index (BMI) and WWI were estimated. After 12-14 hours of fasting and taking blood samples, serum liver enzymes and ferritin levels were assessed. Furthermore, NAFLD was diagnosed using ultrasonography findings.

**Results:** The prevalence of NAFLD was 84.6%. Mean WWI was  $11.24 \pm 0.65$  and was more significant in women than men ( $p = 0.001$ ), although mean WC in men was significantly greater than women ( $p = 0.001$ ). Among all studied metabolic factors, WWI was significantly correlated with BMI. Moreover, by increasing the severity of fatty liver, mean WWI increased ( $p = 0.001$ ). However, WWI was not associated with the risk of NAFLD after adjusting for age, gender, and BMI (OR = 1.17; CI 95%: 0.76-1.82;  $p = 0.468$ ).

**Conclusion and Discussion:** While WWI was related to the severity of liver steatosis, it failed to predict NAFLD.

**Keywords:** Fatty liver, Liver, Non-alcoholic fatty liver disease