



[JACC: Heart Failure](#)

[Current Issue](#)

[Just Accepted](#)

[Archives](#)

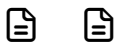
[JACC Journals](#) › [JACC: Heart Failure](#) › [Archives](#) › [Just Accepted](#)

[Previous](#)

[Next](#)

## NT-proBNP for Risk Prediction in Heart Failure: Identification of Optimal Cutoffs Across Body Mass Index Categories

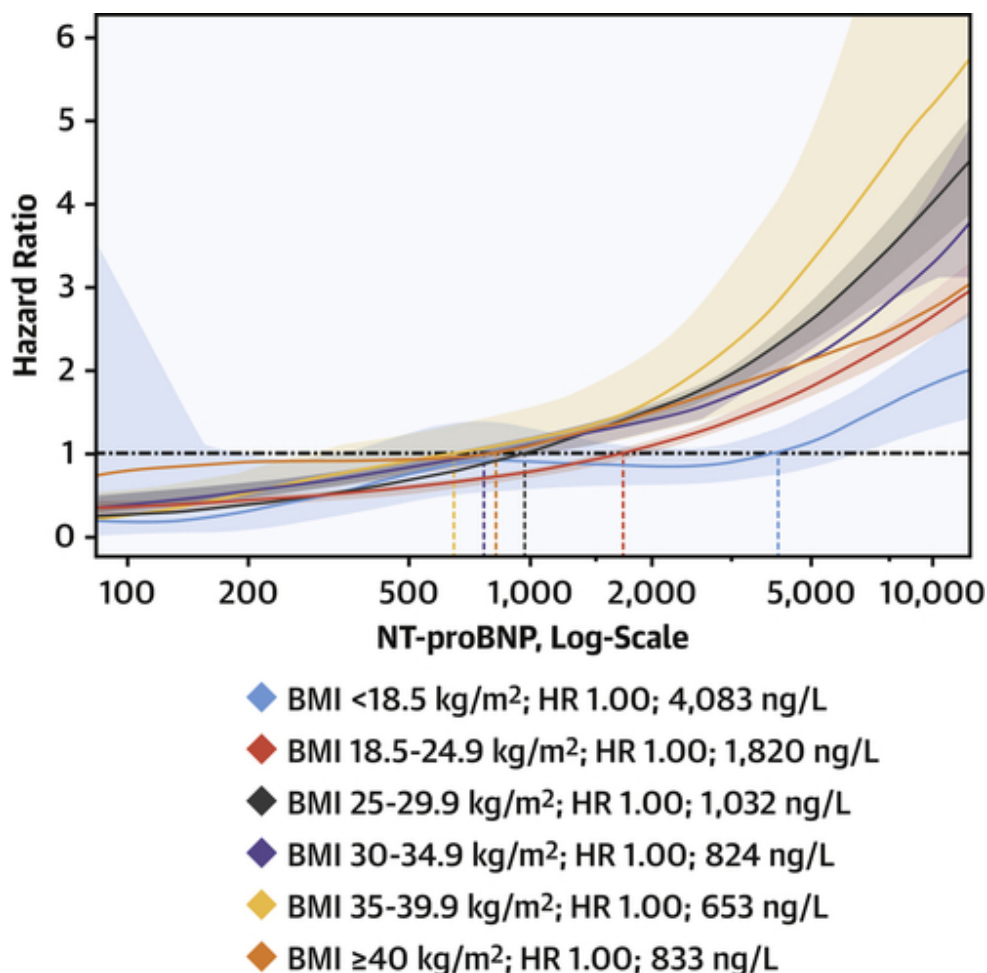
Giuseppe Vergaro, Francesco Gentile, Laura M.G. Meems, Alberto Aimò, James L. Januzzi, A. Mark Richards, Carolyn S.P. Lam, Roberto Latini, Lidia Staszewsky, Inder S. Anand, Jay N. Cohn, Thor Ueland, Lars Gullestad, Pål Aukrust, Hans-Peter Brunner-La Rocca, Antoni Bayes-Genis, Josep Lupón, Akiomi Yoshihisa, Yasuchika Takeishi, Michael Egstrup, Ida Gustafsson, Hanna K. Gaggin, Kai M. Eggers, Kurt Huber, Greg D. Gamble, Lieng H. Ling, Kui Tong Gerard Leong, Poh Shuah Daniel Yeo, Hean Yee Ong, Fazlur Jaufeerally, Tze P. Ng, Richard Troughton, Robert M. Doughty, Gerry Devlin, Mayanna Lund, Alberto Giannoni  
J Am Coll Cardiol HF. , 0 (0)



☰ Sections

☰ About

### Central Illustration



## Abstract

### Objectives

The goal of this study was to assess the predictive power of N-terminal pro-B-type natriuretic peptide (NT-proBNP) and the decision cutoffs in heart failure (HF) across body mass index (BMI) categories.

### Background

Concentrations of NT-proBNP predict outcome in HF. Although the influence of BMI to reduce levels of NT-proBNP is known, the impact of obesity on prognostic value remains uncertain.

### Methods

Individual data from the BIOS (Biomarkers In Heart Failure Outpatient Study) consortium were analyzed. Patients with stable HF were classified as underweight (BMI <18.5 kg/m<sup>2</sup>), normal weight (BMI 18.5-24.9 kg/m<sup>2</sup>), overweight (BMI 25-29.9 kg/m<sup>2</sup>), and mildly (BMI 30-34.9 kg/m<sup>2</sup>), moderately (BMI 35-39.9 kg/m<sup>2</sup>), or severely (BMI ≥40 kg/m<sup>2</sup>) obese. The prognostic role of NT-proBNP was tested for the endpoints of all-cause and cardiac death.

### Results

The study population included 12,763 patients (mean age 66 ± 12 y; 25% women; mean left ventricular ejection fraction 33% ± 13%). Most patients were overweight (n = 5,176), followed by normal weight (n = 4,299), mildly obese (n = 2,157), moderately obese (n = 612), severely obese (n = 314), and underweight (n = 205). NT-proBNP inversely correlated with BMI ( $\beta = -0.174$  for 1 kg/m<sup>2</sup>;  $P < 0.001$ ). Adding NT-proBNP to clinical models improved risk prediction across BMI categories, with the exception of severely obese patients. The best cutoffs of NT-proBNP for 5-y all-cause death prediction were lower as BMI increased (3,785 ng/L, 2,193 ng/L, 1,554 ng/L, 1,045 ng/L, 755 ng/L, and 879 ng/L, for underweight, normal weight, overweight, and mildly, moderately, and severely obese patients, respectively) and were higher in women than in men.

## Conclusions

NT-proBNP maintains its independent prognostic value up to 40 kg/m<sup>2</sup> BMI, and lower optimal risk-prediction cutoffs are observed in overweight and obese patients.

## Access content

This article requires a subscription or purchase to view the full text. For more information on subscriptions, please visit our [subscription information page](#).

## Sign In

If you have ACC member/subscription access to this content, please [Sign In](#).

## Purchase Access

**Single Article Purchase, Full Text/PDF access for 24 hrs**

**\$35.00**

[Add to cart](#)

Advertisement

## JACC: Heart Failure

[Home](#)

[Current Issue](#)

[Just Accepted](#)

[Archives](#)

[About](#)

[Editor-in-Chief Biography](#)

[Editorial Board](#)

## JACC Journals

About the Journals

JACC

JACC: Advances

JACC: Asia

JACC: Basic to Translational Science

JACC: CardioOncology

JACC: Cardiovascular Imaging

JACC: Cardiovascular Interventions

JACC: Case Reports

JACC: Clinical Electrophysiology

JACC: Heart Failure

## JACC International

About

JACC Chinese

JACC Portuguese

JACC Spanish

## Resources

Advertising

Help

Policies

Publication Committee

Reprints / Permissions

## Stay Connected

Email Alerts

Events

Contact Us

Subscribe

## Authors & Reviewers

For Authors

For Reviewers

FAQ

[Operating Policies](#)

## Explore

[CME/MOC](#)

[Guidelines](#)

[Podcasts](#)

[Topics & Collections](#)

[Videos](#)



## American College of Cardiology

### Heart House

2400 N.St. NW

Washington, DC 20037

Email: [membercare@acc.org](mailto:membercare@acc.org)

Phone: (202) 375-6000, ext. 5603

Toll Free: (800) 253-4636, ext.5603

Fax: (202) 375-7000

### Follow us



## Transforming Education to Knowledge

[ACC](#)

[Accreditation Services](#)

[Annual Scientific Session](#)

[Cardiosmart](#)

[CV Quality](#)

[JACC Journals](#)

[MedAxiom](#)

NCDR

[Privacy Policy](#) | [Registered User Agreement](#) | [Terms of Service](#) | [Cookie Policy](#) | [Media](#)

© 2021 American College of Cardiology Foundation. All rights reserved.