

## Chapter

### Current Approach to Heart Failure

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# The Imaging of Right Ventricular Dysfunction in Heart Failure

- Elena Surkova
- , Denisa Muraru
- , Luigi P. Badano

## Abstract

In patients with heart failure, right ventricular (RV) function is an independent predictor of cardiovascular morbidity and mortality. However, non-invasive assessment of the RV is a challenging task due to its complex anatomy and location in the chest. Moreover, the high load dependency of RV function can also lead to inaccurate or misleading interpretation of intrinsic RV function parameters if they are taken in isolation from RV pre- and afterload conditions. No single imaging modality is able to provide a comprehensive assessment of RV global and regional functions, mechanics, shape and tissue structure. Accordingly, a multimodality and multiparametric approach is recommended.

The following chapter summarizes currently available data on the role of non-invasive imaging techniques in the assessment of RV performance, their advantages, limitations and pitfalls in heart failure patients, with an emphasis on the relative merits of newer imaging parameters and practical approach to data acquisition and analysis.

## Keywords

Right ventricle Heart failure Cardiovascular imaging Right ventricular function Three-dimensional echocardiography Speckle tracking echocardiography Cardiac magnetic resonance Computed tomography Nuclear imaging Reference values

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## Editor Affiliations

- 1. Emergency Clinical Hospital of Bucharest, UMF Carol Davila – Bucharest Emergency Clinical Hospital of Bucharest
- 2. Department of Cardiology, University Heart Center Department of Cardiology
- 3. Section of Cardiovascular Diseases, University of Brescia Section of Cardiovascular Diseases

## Authors

- Elena Surkova MD, PhD<sup>(4)</sup>
- Denisa Muraru MD, PhD<sup>(4)</sup>
- Luigi P. Badano MD, PHD<sup>(4)</sup>

## Author Affiliations

- 4. Department of Cardiac, Thoracic and Vascular Sciences, University of Padua, School of Medicine, Padova, Italy

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