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BIOTRONIK, Inc.  
6024 Jean Road  
Lake Oswego, OR 97035-5571 USA  
Tel +1 (800) 547-0394 (24-hour)  
Fax +1 (503) 635-9936  
www.biotronik.com

## Treating Heart Failure

“Heart failure” means the heart cannot pump enough blood to meet the body’s demands. It is usually caused by the lower heart chambers’ (ventricles) inability to contract or relax properly. Over time, heart failure causes fluids to build up (congest) in the body, which can lead to shortness of breath, fatigue, swelling and heart rhythm abnormalities. Heart failure is a serious condition, but it does not mean that the heart has stopped working.

### How common is heart failure?

Heart failure is very common, affecting 26 million worldwide,<sup>1</sup> or two to three percent of the adult population. The figure rises sharply with age. Ten to 20 percent of those between 70 and 80 years old have heart failure.<sup>2</sup>

### What health issues do patients face?

Heart failure patients are often in poor general health and most are over the age of 65. They frequently suffer from other chronic conditions. Forty percent have five or more non-heart-related conditions such as brain tumors, diabetes, arthritis, or have suffered a stroke.<sup>3</sup> Half of those with serious heart failure also have atrial fibrillation<sup>4</sup> – the most common abnormal heart rhythm – which is increasingly common with age.<sup>5</sup>

### Treatment options

Heart failure can be treated in many ways and is often managed with medication and lifestyle changes. Cardiac resynchronization therapy (CRT) can treat patients with certain types of heart failure, specifically those whose ventricles (lower heart chambers) beat out of sync.

CRT helps the ventricles beat properly. By improving blood flow through the body, CRT can reduce heart failure symptoms, improving patients’ quality of life and reducing mortality.<sup>6</sup>

Like a pacemaker or implantable cardioverter defibrillator (ICD), CRT devices are implanted in patients’ chests and connected to the heart with electrodes, called leads. CRT pacemakers and ICDs have a third lead that connects to the left ventricle, which pumps blood through the body. Heart failure pacemakers (CRT-Ps) prevent the heart from beating too slowly; heart failure ICDs (CRT-Ds) prevent the heart from beating too quickly and/or prevent the heart from beating too slowly. BIOTRONIK devices come with ProMRI<sup>®</sup> technology, allowing patients to undergo MRI scans under certain conditions. They are also equipped with BIOTRONIK Home Monitoring<sup>®</sup> technology, so physicians can monitor their patients remotely anytime, anywhere.

## References:

<sup>1</sup> Ambrosy PA et al. *JACC*. 2014(63).

<sup>2</sup> CDC Heart Failure Fact Sheet, 2016.

<sup>3</sup> Within 51 countries representing a population of 900 million. Dickstein K et al. *Eur Heart J*. 2008, 29.

<sup>4</sup> Braunstein J et al. *JACC*. 2003, 42(7).

<sup>5</sup> Anter E et al. *Circulation*. 2009, 119.

<sup>6</sup> Hindricks G et al. *Lancet*. 2014, 384(9943).