



# Assessing the benefits of PaceWave™ ASV therapy on patients with heart failure and sleep-disordered breathing (SDB)?

Sponsored by ResMed (www.resmed.com), SERVE-HF is, to date, the largest randomised controlled study in the field of sleep-disordered breathing (SDB) related to chronic heart failure.

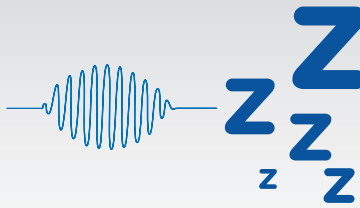
Results, expected in 2016, could have a big impact on the future management of heart failure patients.

## SLEEP-DISORDERED BREATHING IN HEART FAILURE – THE FACTS

There are an estimated

**14million**

patients suffering from heart failure in Europe<sup>1</sup>

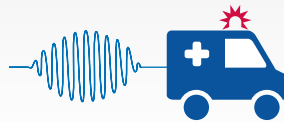


SDB is the **most common** heart failure co-morbidity. However, it remains one of the **least recognised** by cardiologists<sup>2</sup>

Central SDB is estimated to be present in up to



**30-50%**  
of heart failure patients<sup>3,4,5</sup>



In heart failure patients, central SDB is associated with:

- **increased mortality**
- **cardiac hospital readmissions**
- **lower quality of life**<sup>6,7,8</sup>

### Effective treatment of

central SDB using PaceWave™ ASV improves cardiac function and may increase survival in HF patients<sup>7,8,9,10</sup>



**SERVE-HF** is the first large-scale randomised trial assessing the benefits

## SERVE-HF

The trial is assessing **the benefits** of PaceWave™ ASV therapy on heart failure patients and **the cost/benefit ratio**



**1,325 Patients** are now enrolled in this trial, which is taking place in **80 centres** across Europe and Australia

Patients will be followed up on average for a period of ~ **54 months** (24 months–84 months)

The first patient was randomised in 2008 and the study is likely to complete in June 2015, with

**results in 2016**

## KEY AREAS OF FOCUS IN SERVE-HF ARE:

- Time to death
- Unplanned heart failure related hospitalisation
- Impact on health economics
- Quality of life
- Cardiac function
- Exercise capacity

**SERVE-HF could change how we manage SDB in heart failure patients**

#### References:

1. Data on heart failure in Europe is sketchy. One common estimate is '14 million Europeans' (J Am Coll Cardiol, 2009; 53:1960-1964), which would be ~3.3% of the population of the EU27 over 14. A comparison of population-based heart failure prevalence in Framingham, Ma (NHLBI, 2006 Chart Book on Cardiovascular and Lung Diseases, Table 5-42) and in the Dutch city of Rotterdam (see European Heart Journal. 1999 Mar;20(6):447-55) which suggests roughly comparable rates of heart failure prevalence (~3.5%).
2. Javaheri. Basics of Sleep Apnea and Heart Failure. Sleep Apnea and CV Disease – A CardioSource Clinical Community. Available online at <http://apnea.cardiosource.org/Basics/2013/02/Basics-of-Sleep-Apnea-and-Heart-Failure.aspx> (last accessed, June 2013).
3. Akiko Noda et al. Therapeutic Strategies for Sleep Apnea in Hypertension and Heart Failure. Pulmonary Medicine, (Volume 2013), Article ID 814169.
4. Olaf Oldenburg et al., Sleep-disordered breathing in patients with symptomatic heart failure, European Journal of Heart Failure (2006), doi:10.1016/j.ejheart.2006.08.003.
5. Paulino et al. Prevalence of sleep-disordered breathing in a 316-patient French cohort of stable congestive heart failure. Archives of Cardiovascular Disease (2009). 102, p169-175.
6. Pina et al, Pathophysiological and clinical relevance of simplified monitoring of nocturnal breathing disorders in heart failure patients. European Journal of Heart Failure (2009) 11, 264–272 doi:10.1093/eurjhf/hfp006.
7. Sharma et al. Adaptive servo-ventilation for treatment of sleep-disordered breathing in heart failure: A systematic review and meta-analysis. Chest. 2012 Nov;142(5):1211-21.
8. Carole Philippe et al. Compliance with and efficacy of adaptive servo-ventilation (ASV) versus continuous positive airway pressure (CPAP) in the treatment of Cheyne-Stokes respiration in heart failure over a six month period. Heart 2006 Mar;92(3):337-42. Epub 2005 Jun 17.
9. Carmen Carmona-Bernal et al. Quality of life in patients with congestive heart failure and central sleep apnea. Sleep Medicine (2008), Volume 9, Issue 6, Pages 646-651.
10. Olaf Oldenburg. Cheyne-Stokes Respiration in Chronic Heart Failure – Treatment With Adaptive Servoventilation Therapy. Circulation Journal (October 2012) Vol.76.
11. Martin Cowie et al. Rationale and design of the SERVE-HF study: treatment of sleep-disordered breathing with predominant central sleep apnoea with adaptive servo-ventilation in patients with chronic heart failure. "<http://www.ncbi.nlm.nih.gov/pubmed/?term=Rationale+and+design+of+the+SERVE-HF+study%3A+treatment+of+sleep-disordered+breathing+with>" "European journal of heart failure." Eur J Heart Fail. 2013 Aug;15(8):937-43. Epub 2013 Mar 27.