

# Breathing treatment improves cardiac function and nerve health

June 11 2012

---

Many chronic heart failure patients struggle with not just strenuous activity but even the essentials such as moderate exercise and normal breathing. Research revealed at the Society of Nuclear Medicine's 2012 Annual Meeting presents an overnight breathing treatment called adaptive servo-ventilation as a potential protocol for energizing the heart by increasing activity in the sympathetic nervous system. An aspect of the nervous system, the main function of the sympathetic nervous system is to mobilize the body, commonly known as the "fight-or-flight" impulse.

Adaptive servo-ventilation (ASV) therapy is a method of treating disordered breathing with a monitoring unit that turns on airway pressure and continuously adjusts to optimize patient breathing patterns. The objective of this study was to determine whether ASV therapy is effective for improving symptoms of [chronic heart disease](#) and also the [sympathetic nervous system](#).

"The use of ASV therapy to increase sympathetic nerve activity represents a novel treatment in patients with [congestive heart failure](#)," says Takuji Toyama, M.D., lead author of the study at Gunma Prefectural Cardiovascular Center in Gunma, Japan. "Our research showed improvement of not only cardiac symptoms and function but also sympathetic nerve activity. These findings mean that ASV has the potential to become an excellent device for the treatment of cardiovascular disease."

Researchers applied two methods of molecular imaging, both using scintigraphy and either I-23I metaiodobenzylguanidine (MIBG) or Tc99m methoxyisobutylisonitrile (Tc99m sestamibi or just MIBI) as an imaging probe. Both imaging probes are a combination of radioisotope and a molecular compound that disperses and binds to active biological systems in the heart. Once injected, the probes emit [gamma rays](#), and patients are imaged with a gamma camera that takes 2D image-slices, which are reconstructed into a comprehensive image that highlights how the cardiovascular and sympathetic nervous systems are functioning.

A total of 30 patients with congestive heart failure were given treatment during the study. Half of the subjects received ASV, and the other 15 underwent conservative treatments, each for six months. Results of the study indicate that ASV was just as effective as for significant improvement of [chronic heart failure](#) symptoms and cardiac function as well as increased exercise capacity and sympathetic nerve activity in cardiac patients.

Provided by Society of Nuclear Medicine

Citation: Breathing treatment improves cardiac function and nerve health (2012, June 11)  
retrieved 24 April 2024 from

<https://medicalxpress.com/news/2012-06-treatment-cardiac-function-nerve-health.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--