Breakthrough in the fight against lung diseases

Launching the X-halo at the
EUROPEAN RESPIRATORY SOCIETY ANNUAL CONGRESS
October 4th-8th, 2008, Berlin, Germany

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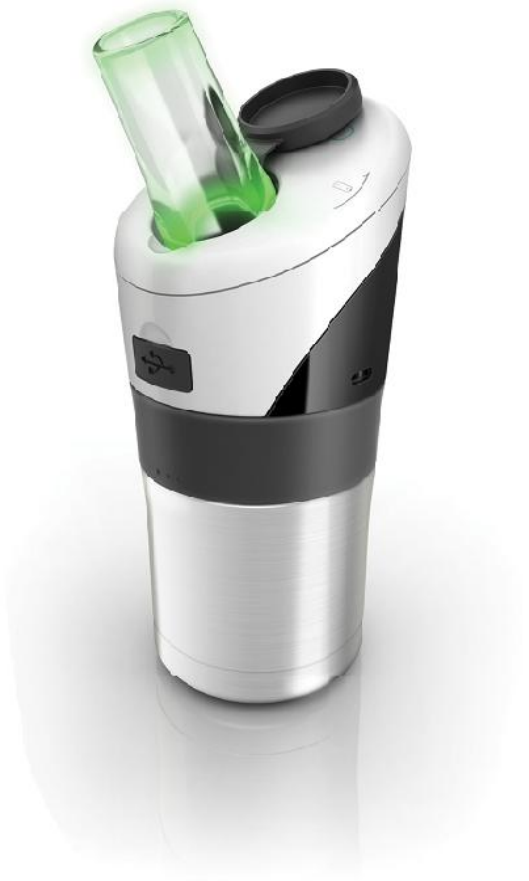
SINGAPORE, SEPTEMBER 25th, 2008. As many as 300 million people worldwide suffer from asthma and its prevalence is on the rise as societies become increasingly urbanised. The Global Burden of Asthma Report, released in 2004, warns there could be an additional 100 million diagnosed asthmatics by 2025. Worldwide, deaths from asthma have reached more than 250,000 a year and its economic cost is estimated to exceed those of tuberculosis and HIV/AIDS combined.

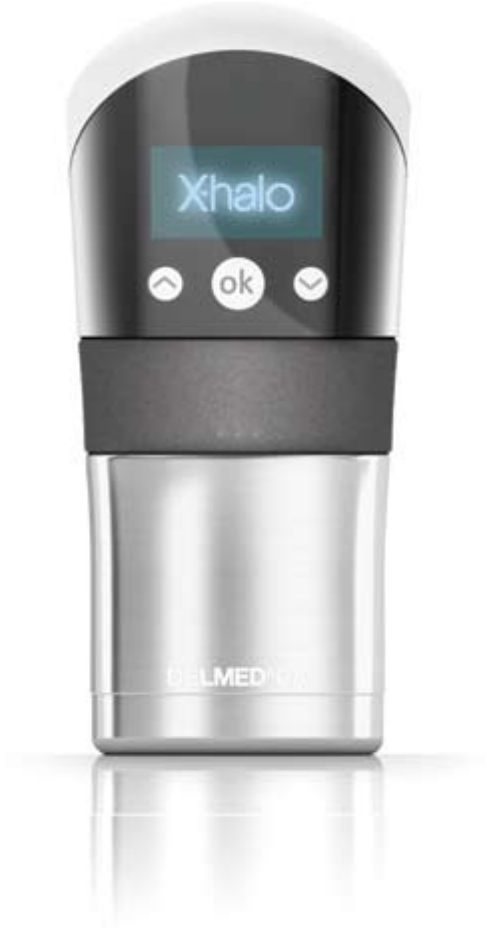


Now, in an effort to improve the management of asthma and other respiratory diseases, Delmedica Investments of Singapore introduces a device that easily and accurately measures the temperature of a patient's exhaled breath. Already used by a number of internationally respected researchers and clinicians, it offers a breakthrough in the treatment of lung diseases.

In a number of recent medical studies, specialists have concluded that an asthma sufferer's exhaled breath temperature is related to the degree of airway inflammation. Further, exhale breath temperature is different to core body temperature, as determined by otic or axillar thermometers.

"In asthma there is increased vascularity of the airway mucosa, altering heat loss in the airways," write Dr Paolo Paredi and fellow researchers at Imperial College London's National Heart and Lung Institute, in a study published in the American Journal of Respiratory and Critical Care Medicine in 2002.

“Exhaled breath temperature is related to the degree of airway inflammation in asthma,” conclude researchers at the University of Verona in a paper in the British journal Clinical & Experimental Allergy in 2007.



“Inflammation ⋯ is characterised among other things by increased heat production,” write Todor Popov and fellow researchers at the Medical University of Sofia. Their study, published in Respiratory Medicine in 2007, concludes: “Exhaled breath temperature is increased in uncontrolled asthmatics and decreases under anti-inflammatory treatment.”

The concept that airway inflammation underlies the wide clinical spectrum of asthma has been a cornerstone of medical understanding for the past 20 years. It was first established using bronchoscopy and, later, less invasive methods of assessing inflammatory ma rkers. Evaluating sputum samples was followed by measuring the level of nitric oxide and other markers of inflammation in exhaled breath condensate.

While these approaches are beneficial, they are too sophisticated and expensive to use in routine clinical practice. Some eight years ago, Dr Popov and fellow researchers began working on an inexpensive and user-friendly device to measure exhaled breath temperature. The result is the device designed by Philips Electronics Singapore for Delmedica and manufactured by Delmedica in Singapore.

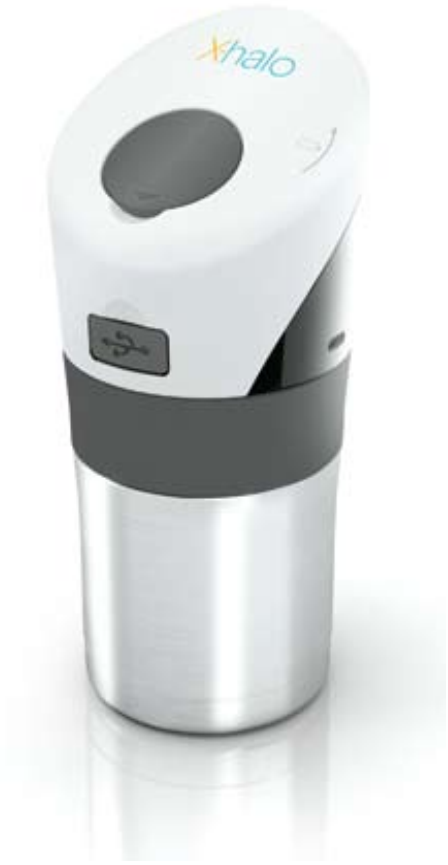
The essence of the invention is an environmental chamber with a thermal core heated by exhaled air. Each exhalation increases the temperature inside this reservoir until equilibrium is reached and measured by a thermal sensor. To use the instrument, a patient inhales through the nose and exhales into the device.

The thermal sensor in the device is accurate to 0.03 degrees Celsius. It has been observed that exhaled breath temperature can rise up to 1.2 degrees before an asthma attack, and that this rise is distinct and measurable in both adults and children.

The device automatically displays and stores the final temperature. A maximum of 122,400 individual data points can be stored and then downloaded via a USB port from the device to a computer. The device is powered by two AAA batteries and can run continuously for 11 days.

Due to limited initial production, Delmedica is now offering the device exclusively to researchers and clinicians. It will secure FDA approval early next year.

The ability for doctors, patients and/or family members to accurately measure changes in exhaled breath temperature in a non-invasive and user-friendly way offers a new way of controlling respiratory illness before the patient presents with acute symptoms. It also offers the opportunity to treat patients with different anti-inflammatory and anti-microbial medicines at doses depending on how critical the illness is as measured by exhaled breath temperature.



Delmedica says the device could also be used in the diagnosis and management of viral and bacterial infections including tuberculosis, pneumonia and severe acute respiratory syndrome (SARS). Further scientific work needs to be done to confirm this.

Writes Popov: “The temperature of the exhaled breath turns out to be an unexplored area on the map of human physiology and disease. There are preliminary reports that increased exhaled breath temperature could be a marker for viral and bacterial infections of the respiratory system, but there is a vast territory to systematically cover in order to figure out the utility of this simple and cheap approach.”

ABOUT DELMEDICA INVESTMENTS

Based in Singapore, Delmedica Investments are a specialist funding company offering investors access to the immense potential of the global biotechnology industry. Via their impressive resources and network of health care professionals, Delmedica identify new opportunities with tangible commercial potential, opportunities that represent low risk, high-growth and clear exit strategies. Recently the healthcare industry replaced technology as the fastest growing sector in the U.S., now accounting for 12% of the total U.S. economy. Find out how Delmedica offers the investor access to innovations that represent the future of the healthcare industry.

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