Press release
Bosch Healthcare Solutions
Bosch Compact

World Asthma Day 2021: Asthma sufferers would welcome more digital solutions, Bosch survey suggests

Bosch home measuring device Vivatmo me uses digital treatment approach to help asthmatics

May 4, 2021
PI 11334 RB DW/Sekr

1. Asthma – a common disease

The Global Asthma Network estimates that there are some 339 million asthma sufferers worldwide, which makes this respiratory disease one of the most frequent chronic health conditions. Moreover, a further 100 million people are expected to contract this condition by 2025. In Germany alone, 3.5 million people are receiving medical treatment for asthma – 4.2 percent of the population. Asthma does not just mean restrictions in sufferers' private lives. Hospitalization, visits to physicians, and drugs, not to mention the loss of labor productivity, mean that the economic burden of such a chronic disease is considerable. Between 1999 and 2002, the total cost incurred by 15- to 69-year-old Europeans came to some 19.3 billion euros. According to the Global Asthma Network, treatment of this condition focuses on monitoring asthma symptoms and avoiding asthmatic attacks. The Bosch subsidiary Bosch Healthcare Solutions offers asthmatics support in the shape of its Vivatmo me breath-gas analyzer. This device allows them to monitor themselves at home and to detect a worsening of their condition at an early stage. By using what is known as FeNO or NO testing, the analyzer relies on a new examination method that allows patients to accurately determine the level of inflammation themselves. The findings can be documented in an app and shared with a doctor.

2. Asthmatics would welcome digital solutions for self-testing

More and more patients are demanding that digital solutions be used in medical treatment. The opinion research company Civey recently carried out a representative online survey of 1,000 respondents for Bosch Healthcare Solutions. More than half the respondents (52 percent) said that, in the case of asthma, they would welcome modern digital aids such as apps to help them keep track of the course of their condition. At 62 percent, the willingness to self-

Robert Bosch GmbH
Postfach 10 60 50
70049 Stuttgart

E-mail Doerthe.Warnk@de.bosch.com
Phone +49 711 811-55508
Twitter @d_warnk

Corporate Department
Communications & Governmental Affairs
Executive Vice President: Prof. Christof Ehrhart
www.bosch-press.com

monitor is particularly high among 40- to 49-year-olds. On average, the desire for more medical test devices for the home is also higher in this demographic.

3. FeNO or NO tests as a new monitoring method

What are known as FeNO or NO tests are a new method for monitoring the treatment of asthma. They allow patients to test the level of an inflammation marker in their lungs. The inflammation associated with asthma causes the production of nitric oxide (NO) in the mucus membranes of the respiratory tract. The amount of this gas can be measured as fractional exhaled nitric oxide (FeNO). The higher the NO level, the more severe the inflammation. In healthy adults, the FeNO level is generally less than 25 ppb (parts per billion). FeNO levels of more than 50 ppb are a symptom of an acute allergic airway inflammation: “We have been measuring FeNO levels in daily practice since the first measurement devices came onto the market. Our experience with allergic asthma patients has been very positive. In this context, self-testing improves compliance, and helps patients and physicians to understand each other better,” says the lung specialist Dr. Michael Barczok, who also co-founded the lung center in Ulm, Germany. Bosch Healthcare Solutions’ measuring device Vivatmo me allows asthmatics to measure their NO levels at any time and in any place. It is the world's first FeNO meter for home use.

4. FeNO and NO tests still relatively unknown in asthma treatment

For patients, NO tests are both stress-free and simple to perform. Although they are available to patients in Germany, they are not covered by statutory health insurance programs. The latest German national treatment guidelines also list the determination of fractional exhaled nitric oxide as part of the initial diagnostic procedure for asthma, and recommend repeated testing.

Nonetheless, many patients have never heard of this method for monitoring asthma. To their knowledge, only 20 percent of those who keep themselves regularly informed about asthma have had a FeNO test, the Bosch survey found. Half (49 percent) of the respondents have never been given a FeNO or NO test by their doctor. And when asked about this test, a further 31 percent gave no reply or had never heard of it.

5. Closely meshed treatment can positively influence course of disease

The Bosch survey suggests that half the respondents are satisfied with their medical care and value personal contact with their physician. Vivatmo me helps patient-physician communication by digitally managing test results in an asthma diary app and sharing them with the physician as required. The app has already won an award, the PneumoDigital quality seal, for its user-friendliness. “By using Vivatmo me to monitor their results themselves, asthmatics can regain control over their condition and get a better idea of what their ‘invisible enemy’ – airway

inflammation – is up to. For many asthma sufferers, this is a crucial step toward dealing better with their disease and getting a grip on it," says Dr. Michael Barczok, when asked about his experience with Vivatmo me and its digital treatment approach.
Close monitoring of inflammation levels via FeNO measurement has a positive impact on potential asthma in pregnant women's children as well. According to an Australian study, a medical diagnosis of asthma in these children was reduced by almost 50 percent by preschool age.

6. Nearly 40 percent of respondents have reservations about corticosteroids

The German national guidelines for asthma treatment set out a phased plan for the treatment of adult asthma. The use of inhaled corticosteroids (ICS) is common to each phase. Nearly 40 percent of those polled on behalf of Bosch expressed their reservations about the use of corticosteroids in asthma treatment. These reservations become stronger with increasing age. Vivatmo me gives patients a clear idea of the course of their illness. Deterioration can be detected early on and treated in time with their physician. "The fight against asthma will not be won with beta agonists and corticosteroids. I believe it makes more sense to intervene earlier and, through continuous treatment in close consultation with the patient, to prevent acute symptoms from appearing in the first place," says Barczok, summing up the benefits of close monitoring.

7. Vivatmo me available in Germany and Austria

Vivatmo me has been available in Germany and Austria since March 2020. In a next step, it is planned to obtain approval in other markets, such as the United States. The development of the Vivatmo system was able to draw on the Bosch Group's experience and core competencies in sensor and microsystems technology, miniaturization, algorithm development, smart connectivity, and the manufacture of highly precise, complex products that meet the company's exacting quality standards.

Press image: #dd80ef5f, #5033de21, #6e63ee2a, #3fcfbb65, #d774aec3, #975d349e

Contact person for press inquiries (Bosch Healthcare Solutions):
Thomas Berroth
Phone: +49 711 811-45599

Contact person for press inquiries (Bosch Group Medical Technology):

Dörthe Warnk
Phone: +49 711 811-55508
Twitter: @d_warnk

The Bosch Group is a leading global supplier of technology and services. It employs roughly 395,000 associates worldwide (as of December 31, 2020). The company generated sales of 71.5 billion euros in 2020. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. With its more than 400 locations worldwide, the Bosch Group has been carbon neutral since the first quarter of 2020. The basis for the company's future growth is its innovative strength. At 129 locations across the globe, Bosch employs some 73,000 associates in research and development, of which nearly 34,000 are software engineers.

The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant upfront investments in the safeguarding of its future. Ninety-four percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The remaining shares are held by Robert Bosch GmbH and by a corporation owned by the Bosch family. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust.

Additional information is available online at www.bosch.com, www.iot.bosch.com, www.bosch-press.com, www.twitter.com/BoschPresse.