WHY GANSHORN?

For 40 years GANSHORN has been manufacturing a complete state-of-the-art portfolio of pulmonary function testing systems for spirometry, bodyplethysmography, diff usion, bronchial provocation and cardiopulmonary stress testing. With its technological innovations, the company has been a leader in the diagnostics market since 1982. Many of these are now perceived as gold standards. In order to meet our high quality standards, it is important to us that all key components are made in Germany. Our devices are created in modern processes in Bavaria, from the initial idea to distribution. In the meantime GANSHORN is represented worldwide, with strong markets in Europe, Asia, North and South America.

PowerCube Body+

Bodyphlethysmography

Vivatmo pro

FeNO monitoring

SpiroScout

Spirometry

tremoflo®

Airwave oscillometry

PowerCube Diffusion+

Diffusion measurement

EucapSys

EVH provocation

Provo.X

Provocation testing

AltiTrainer

Hypoxic challenge testing, hypoxia training

PowerCube Ergo

Cardiopulmonary exercise testing (CPET)

GANSHORN Medizin Electronic GmbH
Industriestr. 6-8 | 97618 Niederlauer, Germany

sales@ganshorn.de
+49 9771 6222 0
www.ganshorn.de

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SCHILLER GROUP

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Vivatmo *pro* FENO-MEASUREMENT

in cooperation with
BOSCH
Invented for life

FeNO as quick, painless and noninvasive biomarker for eosinophile airway inflammation

Ergonomic, portable, cordless

Spare part free

High usability: easy handling

Touchscreen for fast interaction and controlling

Adjusted to high measurement frequency

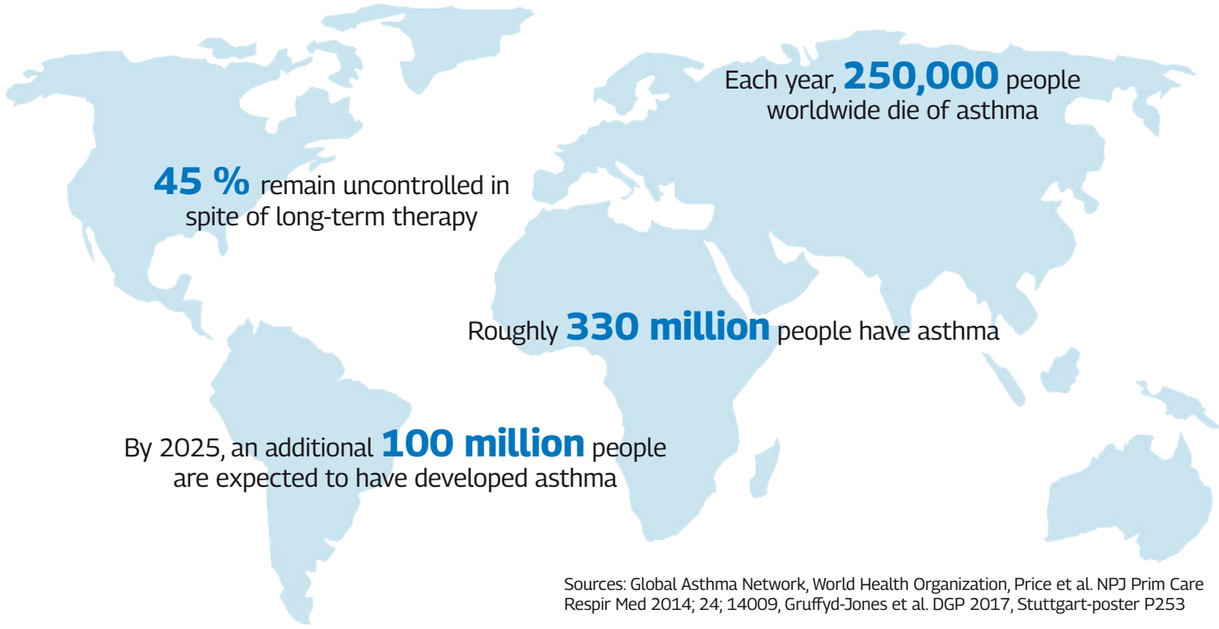
Roughly 330 million people have asthma, a chronic inflammatory disease of the airways that can lead to airway limitation or obstruction. The number will increase with urbanization and adaption to western lifestyle. This makes correct diagnosis and individual follow-up therapy with regular monitoring all the more important.

FeNO (fractional exhaled nitric oxide) is a biomarker for eosinophile airway inflammation and reflects the inflammatory activity of allergic bronchial asthma.Vivatmo *pro* determines the level of the NO in exhaled air and shows the results immediately to confirm the diagnosis or to monitor the applied therapy.

Asthma - a global problem

Asthma is a long-term condition where the lungs become narrow due to inflammation and tightening of muscles around the small airways. This causes symptoms such as cough, wheeze, shortness of breath and chest tightness. Approx. 330 million people worldwide suffer from asthma.

One newer method of asthma therapy management is the measurement of the nitric oxide concentration in exhaled breath. This so-called FeNO measurement is these days frequently used in many lung specialist practices.



Sources: Global Asthma Network, World Health Organization, Price et al. NPJ Prim Care Respir Med 2014; 24; 14009, Gruffyd-Jones et al. DGP 2017, Stuttgart-poster P253

The FeNO value

FeNO is formed in the respiratory tract by inflammatory cells. The NO concentration in the exhaled air therefore reflects the degree of inflammation in the respiratory tract – the more inflammatory cells there are, the more NO is produced. According to the asthma guidelines, increased FeNO values indicate allergic inflammation and thus support the diagnosis of allergic asthma.

Measurement method

Measurement of the FeNO value has become an established method for determining the acute level of respiratory inflammation quickly and reliably. This involves measuring the concentration of nitric oxide (NO) in the exhaled breath.
The patient breathes calmly into the handheld through the disposable mouthpiece and the result is available within a few seconds.

Benefits at a glance

Easy and intuitive user guidance with shown measurement procedure and stored measured values

Results are available immediately following the measurement

Smart algorithm based translation of measured NO values in parts per billion (ppb)

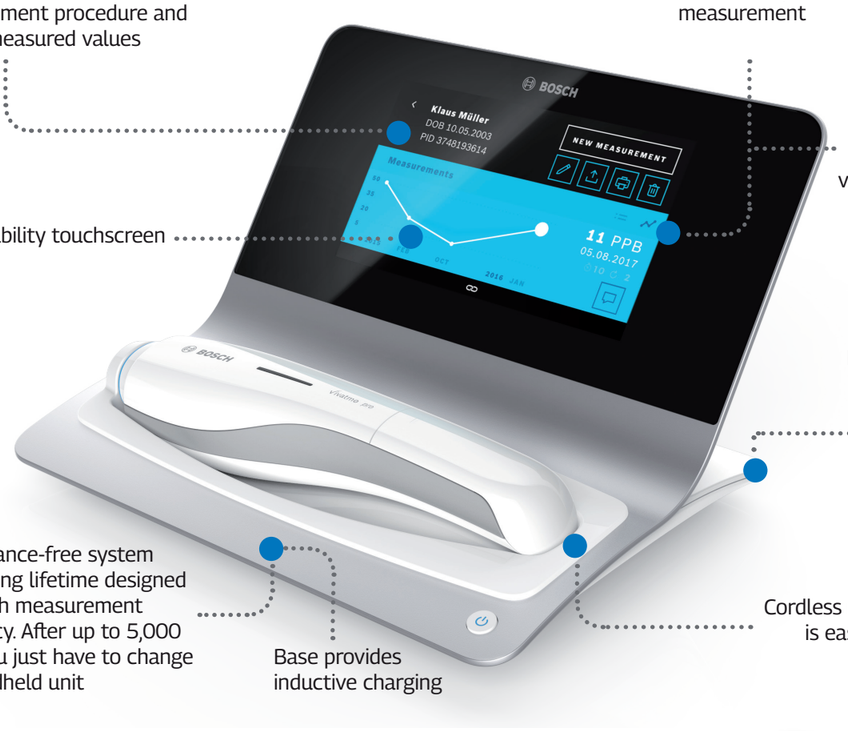
High usability touchscreen

Integration into practice or clinic IT via HL7 or GDT interface

Maintenance-free system with a long lifetime designed for a high measurement frequency. After up to 5,000 trials you just have to change the handheld unit

Base provides inductive charging

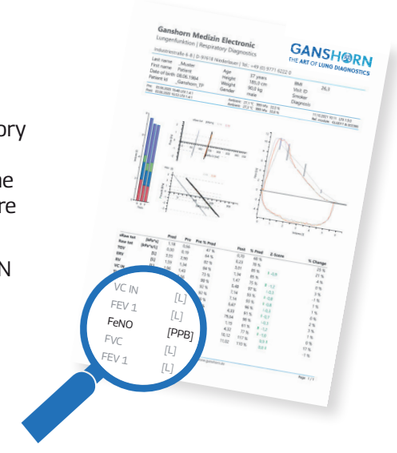
Cordless measuring device is easily transportable



Benefits for doctors and patients

Using the FeNO value, doctors can detect allergic inflammation of the respiratory tract in patients and closely monitor the progression of the inflammation, also during therapy. Increased FeNO values indicate a worsening of the course of the disease even before a conspicuous pulmonary function test result and therefore allow early therapeutic countermeasures to be taken.

Furthermore, it is possible to transfer the measured values into the GANSHORN software LFX. This allows users to create bundled reports from spirometry, bodyplethysmography, FeNO and many more.



Advantages of mouthpiece

The complex chemical layers of the mouthpiece filter the exhaled breath sample by removing interfering substances and gases, reducing the humidity of the sample, and converting the nitric oxide to nitrogen dioxide. Further it provides protection from cross contamination.

The design allows to close lips around the mouthpiece in a relaxed and natural way. This supports velum closure and provides a correct reading.

The resemblance of the mouthpiece to a flute subconsciously encourages the user to exhale in a controlled manner.