



Ventica

Breathe easier

Support clinical decisions with data

A smart and simple tool detecting bronchial obstruction in
children under six years with recurrent wheeze

Nocturnal lung function measurement done at home



Improve a child's quality of life and get symptoms under control with data

Ventica® enables routine testing of lung function in children under six years. It is a novel tool to control asthma symptoms in young children using objective data.

As a nocturnal home lung function test, Ventica offers the possibility to assess the situation during the night, when asthma symptoms typically worsen.

Ventica is quick for clinicians to train, easy for parents to use, and comfortable for the child. The test can easily be repeated. Ventica is an ideal supporting tool for any clinic.

Ventica helps you make clinical decisions:

- Does the child have recurring bronchial obstruction or not?
- To treat or not to treat with controller medication?
- To continue, change, or stop asthma medication?

"Lung function tests should be used more universally than before, also for small children."

Bush A, Pavord AD. The Lancet commission: towards the abolishing of asthma? EMJ 2018; 3: 10-5

Benefits for physicians

- Reliable quantitative results to support treatment decisions
- Better communication with parents
- Improved long-term asthma management

Benefits for parents

- Engagement in the assessment process
- Empowerment through at-home measurement
- Convenient and hassle-free test

Benefits for children

- Unobtrusive and comfortable method
- Safe at-home test performed by the parents
- Improved quality of life

How Ventica works

Impedance pneumography taken to the next level

Ventica measures the electrical impedance of the thorax. Changes in lung volume are directly derived from changes in impedance. Data is collected from four skin-friendly single-use electrodes applied across the child's chest during sleep overnight.

Data analysis with a sophisticated algorithm

Ventica automatically discards distorted signals caused by crying, coughing, talking, heartbeat, or other movements. The algorithm processes over 20 million data points during a night's measurement and generates a simple EVI[®] value.

EVI – a marker of bronchial obstruction

The Ventica analysis of tidal breathing reports a single numerical value, the Expiratory Variability Index (EVI). The color-coded reference bar is easy to interpret. The EVI results support healthcare professionals as part of the overall clinical assessment of a child.

The accuracy of the Ventica tidal flow measurement is validated against direct pneumotachograph in: [a] preschool children, [b] infants with wheeze measured during a methacholine challenge test and [c] healthy adults during mechanical loading.

[a] Seppä, J Appl Physiol 2013; [b] Malmberg, Eur Respir J 2017; [c] Seppä, Proc IEEE EMBS 2013

NORMAL EVI > 14.0

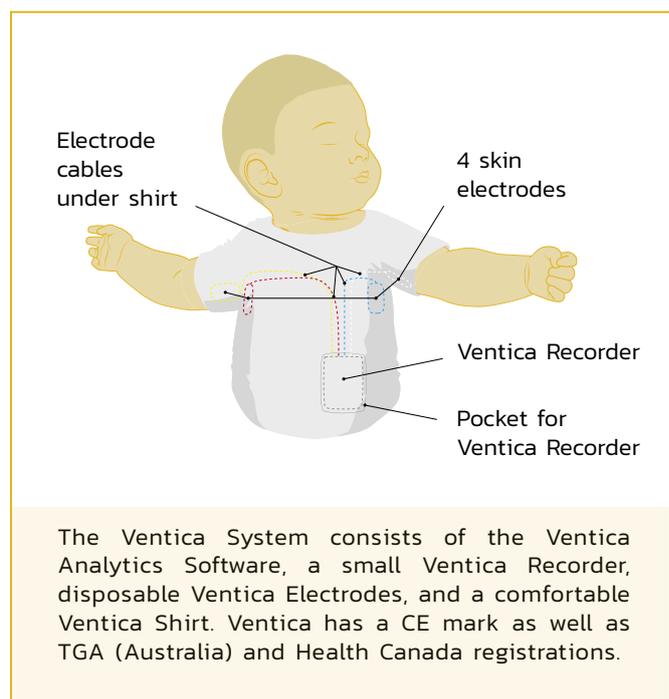
Bronchial obstruction unlikely

LOW EVI ≤ 14.0

Bronchial obstruction highly likely

Ventica is straightforward and easy to use:

1. The clinician examines the child and talks to the parents
2. The clinician gives the parents a brief training
3. The parents do the prescribed measurements at home
4. The parents return the device to the clinic
5. The software analyzes and reports the collected data





Recent clinical research studies

Reduced expiratory variability index (EVI) is associated with controller medication withdrawal and symptoms in wheezy children aged 1-5 years. Seppä V-P, Paassilta M, Kivistö J, Hult A, Viik J, Gracia-Tabuenca J, Karjalainen J; Pediatric Allergy and Immunology, 2020.

Expiratory variability index (EVI) is associated with the severity of acute bronchial obstruction in small children: a proof of concept study. Seppä V-P, Turkalj M, Hult A, Maloča Vuljanko I, Plavec D; Pediatric Allergy and Immunology, 2020.

Expiratory variability index is associated with asthma risk, wheeze and lung function in infants with recurrent respiratory symptoms. Seppä V-P, Gracia-Tabuenca J, Kotaniemi-Syrjänen, A, Malmström K, Hult A, Pelkonen AS, Mäkelä MJ, Viik J, Malmberg, LP; ERJ Open Research 2020.

Ventica

Ventica is developed and marketed by Revenio Research Oy, part of the Finnish health tech group Revenio Group Corporation listed on Nasdaq Helsinki. Today Revenio Group is well-known for iCare tonometers and imaging devices used in ophthalmology. Our vision is to become the provider of choice for unique healthcare solutions.

Revenio Research Oy

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