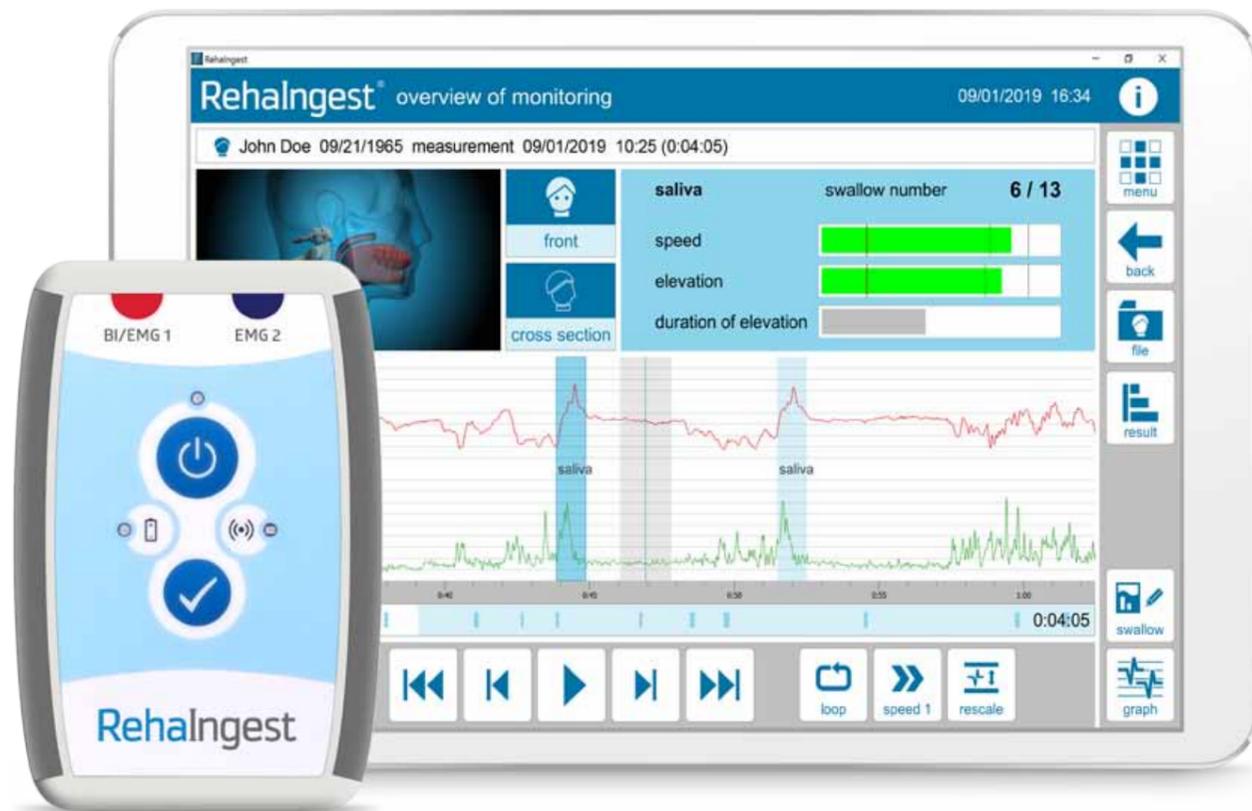


# Long-Term Measurement

RehIngest schedules swallowing activity for up to eight hours. Swallowing frequency gives therapists information about patients swallowing activity over time.



more information: [rehaingest.com](http://rehaingest.com)



**Biofeedback**  
Objective swallow detection in real time  
Direct control of success during therapy  
Long-term measurement for up to 8h  
3D animation replay of swallows  
Evaluation and report function  
Breathing measurement (optional)

Get in touch with us: +49 391 6107 645

HASOMED GmbH  
Paul-Ecke-Str 1  
D-39114 Magdeburg

Tel.: +49 (0)391 6107 645  
Fax: +49 (0)391 6230 113  
Mail: [info@hasomed.com](mailto:info@hasomed.com)

**HASOMED**

Ver. 2019-01

# Long-term Swallowing Measurement and Biofeedback for Dysphagia

Skill and Strength Training



**RehIngest**

# Real-time Swallowing Detection and Long-term Measurement

Rehalgest is the world's first system for measuring swallowing performance through signals from electromyography (EMG) and bioimpedance (BI) at the same time. The pharyngeal swallowing phase can be displayed and evaluated objectively.

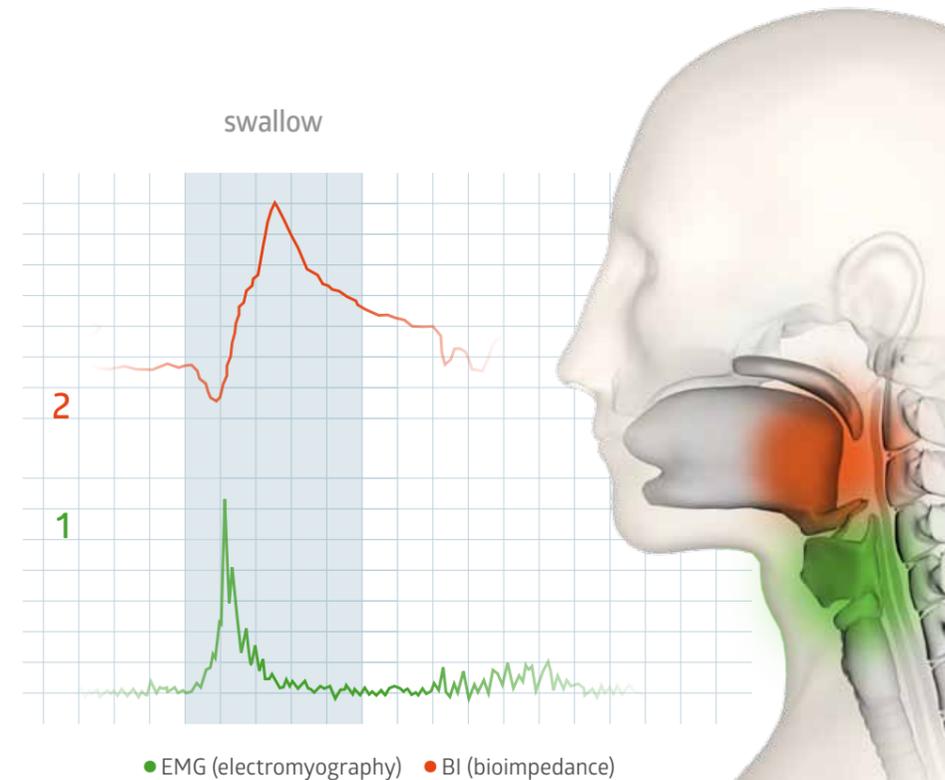
The values are derived via adhesive electrodes attached to the neck. A template makes the precise positioning easier. A measuring module, which serves as an interface between the electrodes and the software, collects the data.



Markings on the result curves provide online annotations on the success of the swallowing process. For evaluation, each swallow recorded is evaluated with consistency-specific reference values for the extent and speed of laryngeal elevation. A 3D animation replay makes the course of the swallow visible. Measurement results can be compared, displayed and exported.

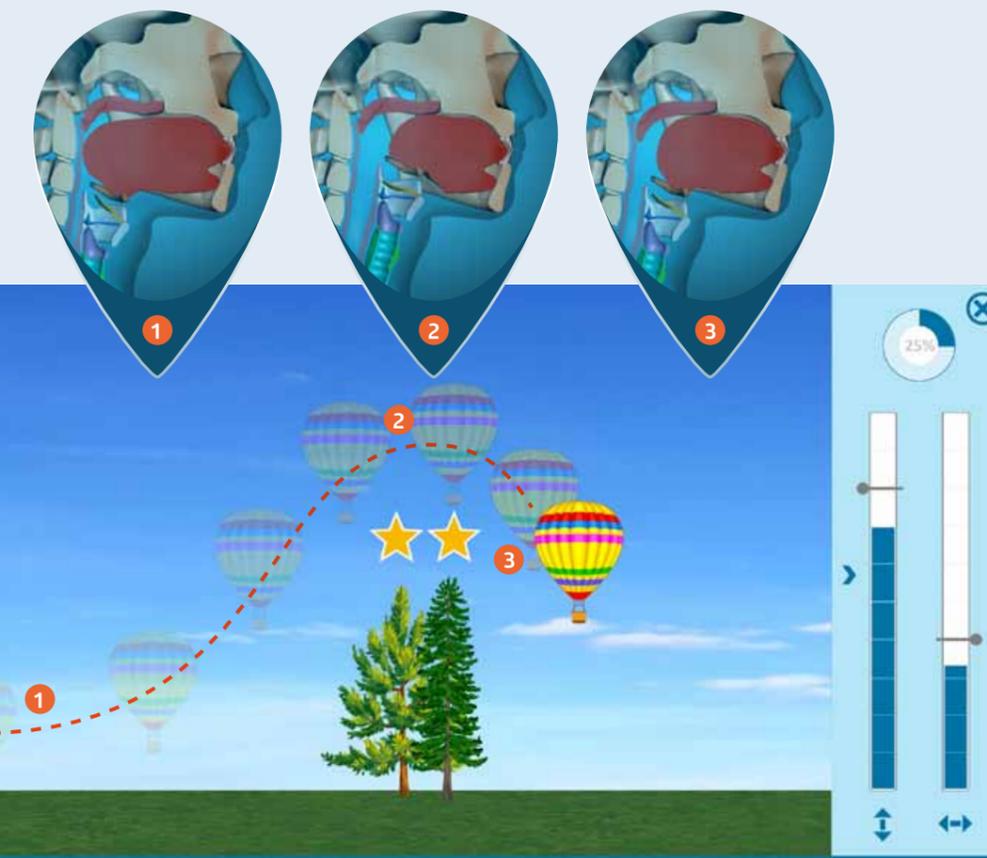
For automatic swallowing detection, Rehalgest combines a two-step procedure. The first step uses **EMG**, which determines the activity of the suprahyoid muscle **while the larynx is lifted**. The simultaneous change of resistance caused by lifting tongue base and thyroid cartilage leads to a shift in **bioimpedance** (step two). Rehalgest identifies the resulting changes in bioimpedance and logs it as swallow.

- 1 Identification of muscular activities (EMG)
- 2 Identification of a swallow-specific change in impedance (BI)



## NEW in 2019: Biofeedback

Individually adaptable biofeedback modules visually support the awareness of the swallowing process. Biofeedback trains the patient's swallowing skills based on **neuroplasticity**. Continuous processing improves and strengthens the swallowing of the patient. The biofeedback training provides **motivation** and **rewards** the patient.



- 1 No laryngeal lifting = hot-air balloon flies low
- 2 Larynx elevation (swallow) = hot-air balloon rises up
- 3 Larynx moves down = hot-air balloon descends