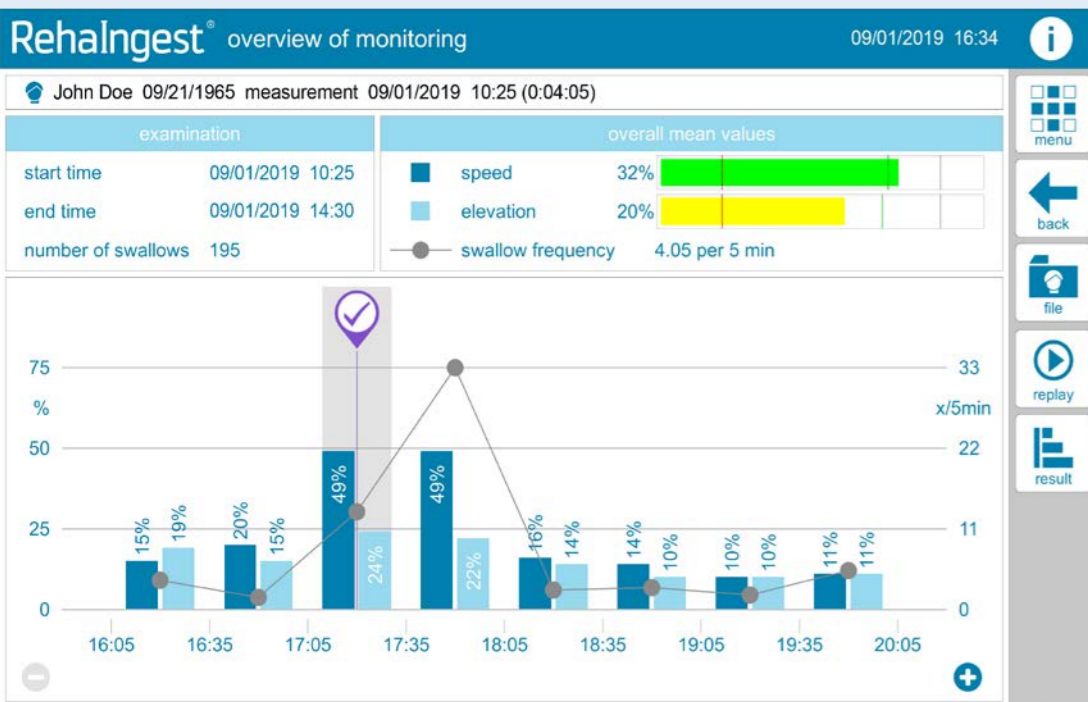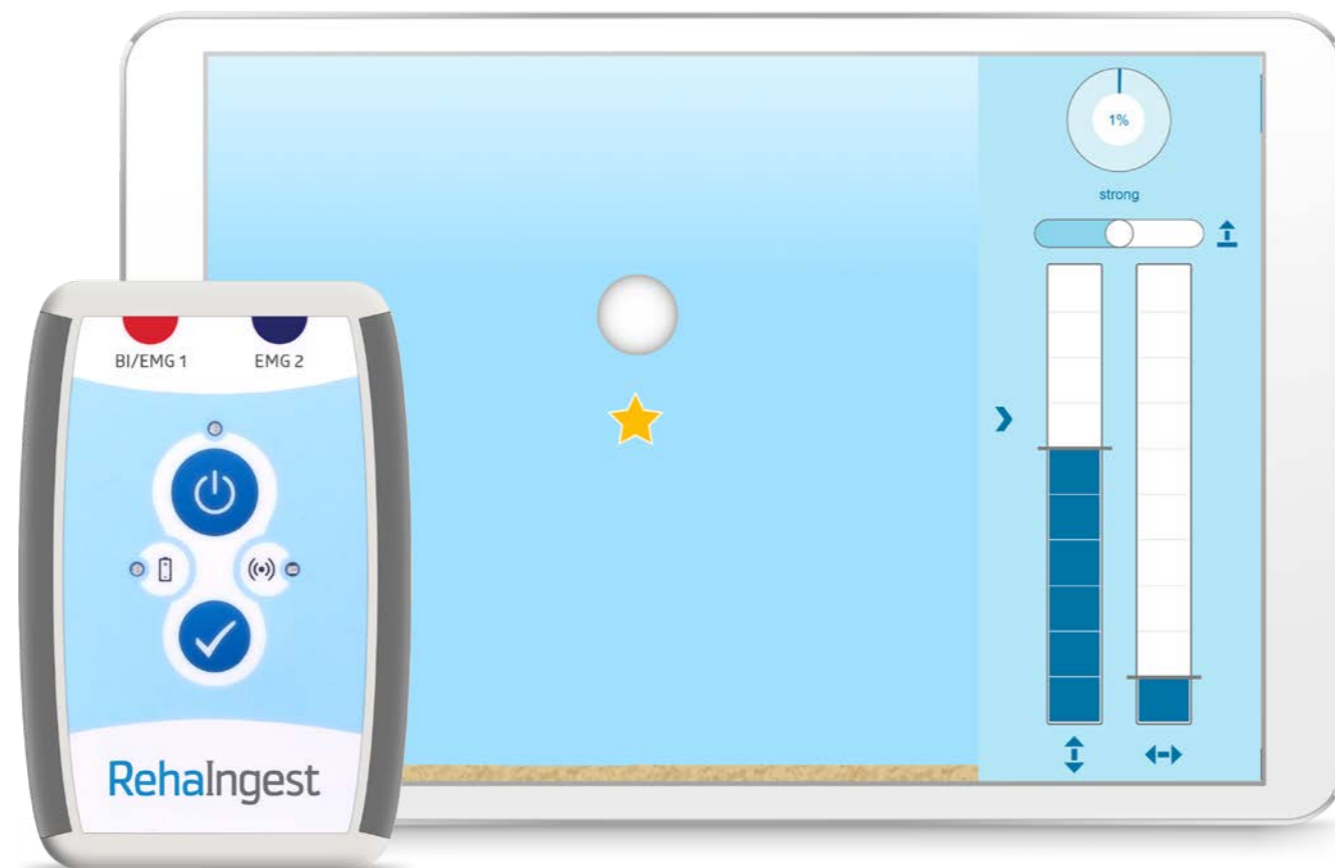# Long-Term Measurement

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

RehaIngest® overview of monitoring 09/01/2019 16:34

John Doe 09/21/1965 measurement 09/01/2019 10:25 (0:04:05)

examination		overall mean values		
start time	09/01/2019 10:25	speed	32%	
end time	09/01/2019 14:30	elevation	20%	
number of swallows	195	swallow frequency	4.05 per 5 min	

more information: **rehaingest.com**

Skill and Strength Training

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

Get in touch with us: +49 391 6107 645

RehaIngest®
Long-term Swallowing Measurement and Biofeedback

Real-time Swallowing Detection and Long-term Measurement

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

1 Identification of a swallow-specific change in impedance (BI)

2 Identification of muscular activities (EMG)

swallow

1

2

● BI (bioimpedance)   ● EMG (electromyography)
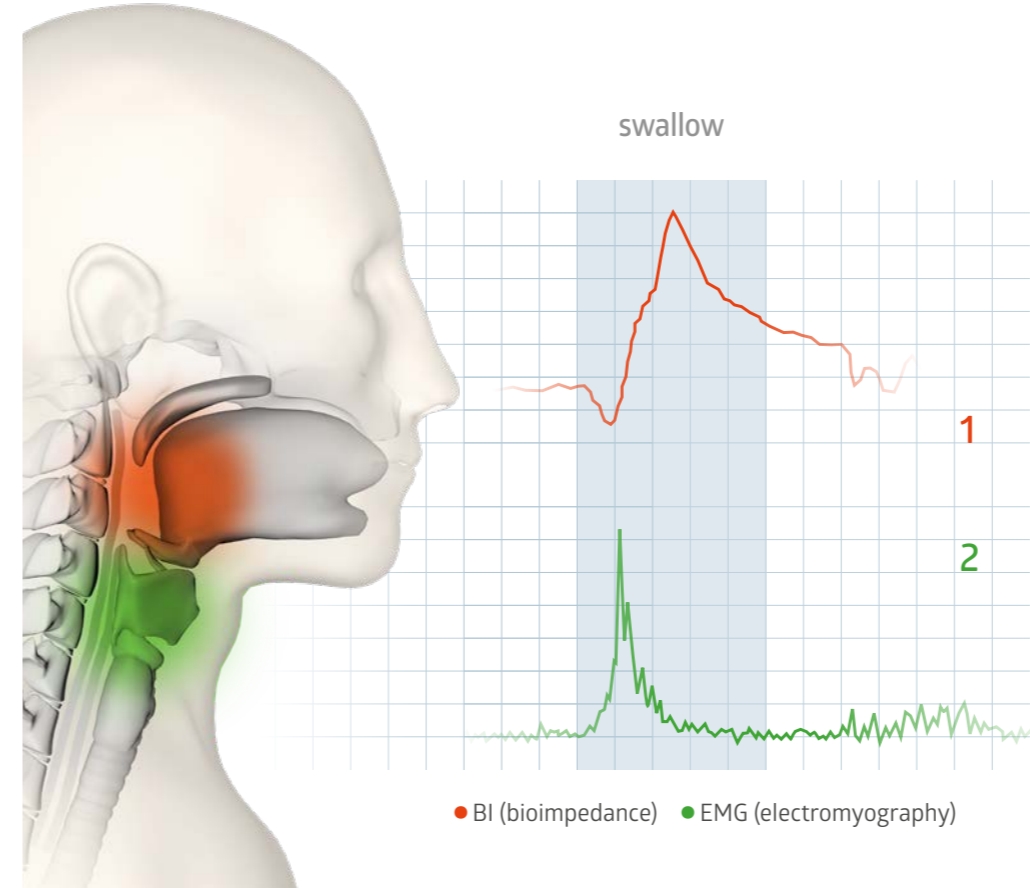
NEW: Biofeedback Therapy

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.

No laryngeal lifting = hot-air balloon flies low

Larynx elevation (swallow) = hot-air balloon rises up

Larynx moves down = hot-air balloon descends