

lingWAVES Nasality

Nasality - Nasalance

lingWAVES Nasality is a new high technology module within the lingWAVES voice and speech system for professional users. It is non-invasive and measures and gives feedback about the presence of nasality in speech production. It measures the degree of velopharyngeal opening during voiced speech - also known as nasalance.

New Mask System

Compared to other traditional systems which have some form of plate separation between the mouth and nose, lingWAVES Nasality uses a new dual wall cushion nose mask with a lightweight durable flexi-tube for a higher acoustic separation between nose and mouth signal. It also uses an Na-

balance improved nasalance measurement algorithm.

The lingWAVES Nasality mask is simple and intuitive for patients to fit and comfortable to wear with an under-eye frame providing a clear line of sight. Self-aligning easy click clips secure the headgear easily. A removable cushion can be easily cleaned after each session and is available for different nose sizes.

Nasalance Measure & Display

The insufficiency of velopharyngeal closure during vowels and sonorants that causes nasal resonance can be estimated and displayed for evaluation or biofeedback in speech training of the nasalance of the voice, with nasalance defined as a ratio

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of acoustic energy at the nares or nostrils to that at the mouth.

lingWAVES Nasality offers both real time biofeedback and measurement and display of pre-post trends.

Biofeedback

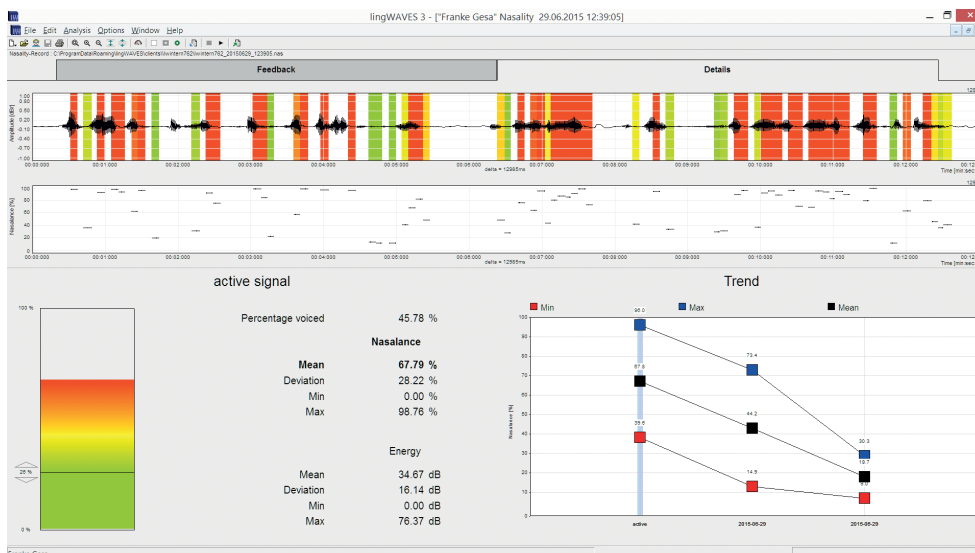
After starting the module, users can display clients' nasalance level in real time represented by colored bar graph and sagittal head view for biofeedback exercises. This gives an clear and intuitive display for monitoring velopharyngeal activity during speech.

Measurement & Trend

By switching to a measurement/trend display, users are able to record clients' speech (e.g. syllable/word repetitions, passages, SNAP test for kids or any other internationally used standardized speech norm



lingWAVES Nasality with real time biofeedback display of nasalance. The norm data levels for nasalance can easily be adjusted for users depending on individual language and clinical needs.



This picture shows a client's reading of a standard text with a higher degree of velopharyngeal opening. Colored label in time signal show the occurrence of nasalance. The results for the automatic nasalance calculation of the recent session as well as trend of different sessions can be seen at the bottom.

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data). The application automatically calculates an instant, easily interpretable and objective nasalance score for the whole recording or manually labeled parts of it. The nasal signal can be played back for clinical assessment.

Several recording sessions are displayed in a trend window to document patient's progress before, during and after therapy, surgery or prosthetic fitting.

Compared to other tools on the market, lingWAVES Nasality is created for international use - nasalance level can be set by language/country specific norms.

Hi-fi Recording Hardware

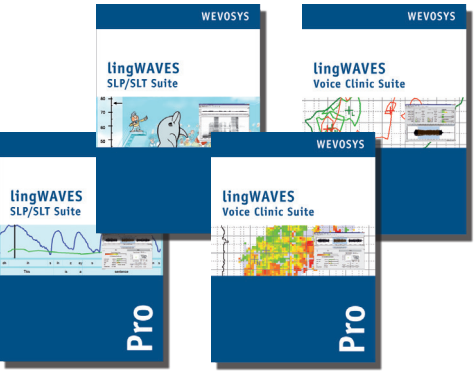
lingWAVES Nasality includes a nose mask with high quality recording hardware for best and most reliable analysis results. A hi-fi USB sound interface with two Lavalier microphones ensures best recordings.

System Requirements

Notebook/PC at least Intel iX processor, Windows Vista, 7, 8.1, 10, at least 4 GB RAM, PC loudspeakers, 2 x USB port. lingWAVES Nasality comes with USB recording hardware.

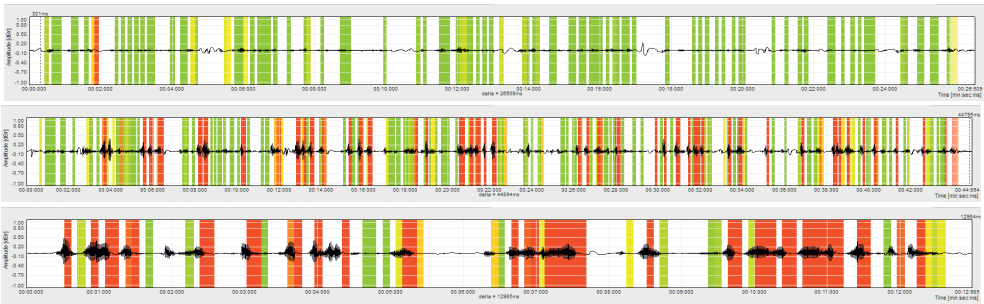
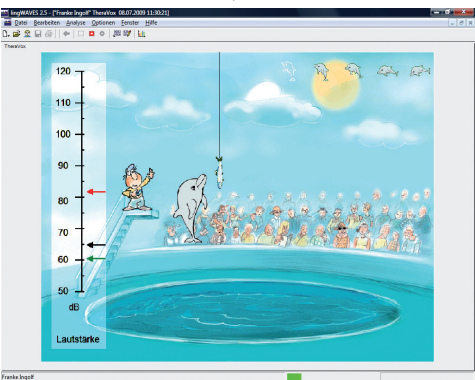
Sets and Suites

lingWAVES Nasality is available as a stand alone lingWAVES set or as an upgrade to lingWAVES suites. You'll find all information about sets and suites at: www.wemosys.com or ask your local distributor.

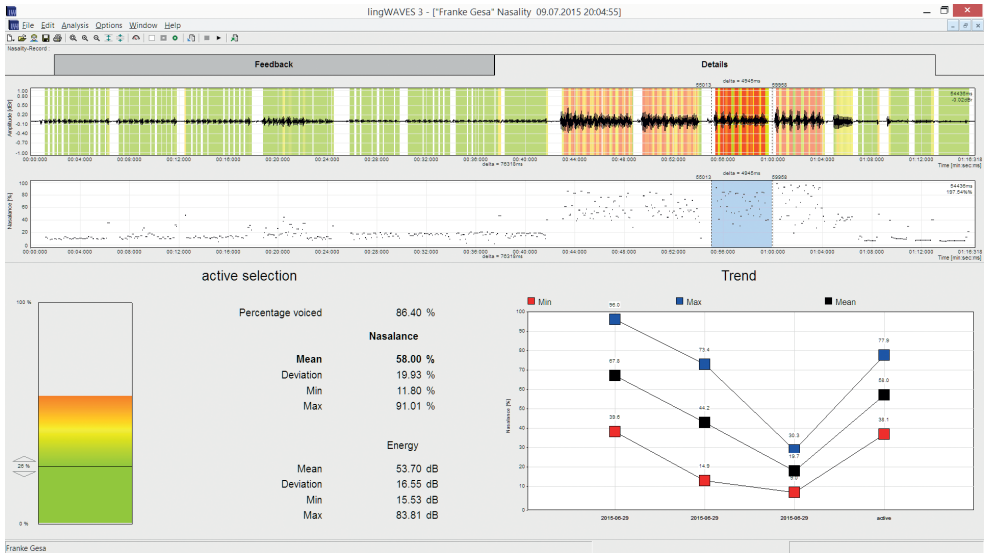


Additional Modules - Selection

lingWAVES TheraVox: Biofeedback for voice and speech - exercises for voiced/un-voiced, pitch, loudness, articulation, voice onset, co-articulation (co-articulation for US

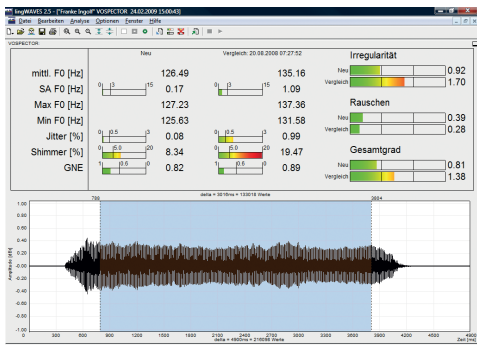


Recording tracks with different degrees of nasalance. Top: reading text without nasal sounds, in the middle: reading text with mixed sounds, bottom: reading with a high proportion of nasal sounds.

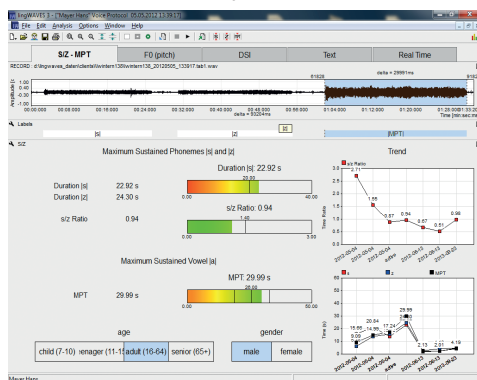


Ready for the world. lingWAVES Nasality can be used with any language in the world and any standard procedure for nasalance assessment. In the picture above, a complete SNAP test, mainly used in North America with syllables, prolonged sounds and passages.

& UK English, German, French, Spanish, Italian). lingWAVES Vospector: Quick and reliable voice quality assessment with new auditive related measurements irregularity & noise (roughness & breathiness).

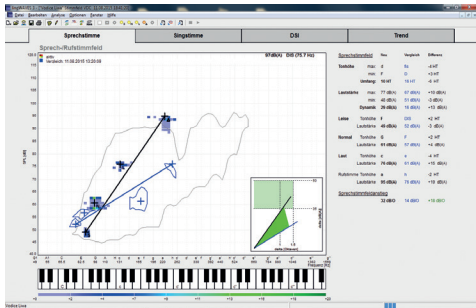


lingWAVES Voice Protocol: A must have for every clinic - whether you are a voice specialist or only see an occasional



voice or Parkinson's client. A quick and easy 10 minute Standard voice assessment protocol - gives reliable and objective measures for voice assessment tasks used worldwide.

lingWAVES Voice Diagnostic Center: Most modern and most advanced Voice Range Profile measurement made for professional users with speaking/shouting and singing profile combined with extended voice quality analysis and Dysphonia Severity Index.



There are many more lingWAVES modules and technology for a wide range of voice and speech applications. Get latest information on:

www.lingWAVES.com