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Performing the Acoustic Reflex Latency Test: a Guide to Controls and Settings

PRODUCT INSIGHTS

The Acoustic Reflex Latency Test (ARLT) provides a detailed analysis of the dynamics of the acoustic reflex by measuring the time-related characteristics of its onset and recovery. Unlike standard reflex testing, ARLT focuses on latency, rise, and fall times, offering valuable information about reflex functionality beyond amplitude and threshold.

This Product Insight describes the available controls and settings for performing ARLT on the Clarinet clinical middle ear analyzer, the only instrument in the Inventis line featuring this specialized test. The guide outlines how to configure and conduct the examination, interpret the key indices, and optimize test parameters for reliable and repeatable results.

ACOUSTIC REFLEX LATENCY TEST (ARLT)

To perform the Acoustic Reflex Latency Test (ARLT), press the OTHER TESTS button and select the option using the left-hand knob.

The interface layout is similar to the standard acoustic reflex test: on the left side, the screen displays information about the current stimulus, while the central and right sections are dedicated to graphs. Each ear has four available graphs, with two shown at a time on the test screen. Navigation between graphs is done via the right-hand knob.

The test procedure follows the same method as the acoustic reflex test in manual mode. Once the test begins, the following information is superimposed on the active graph: test number, Acoustic Reflex Threshold (ART) intensity linked to the selected stimulus, and the stimulus characteristics. As in the reflex decay test, the ARLT is generally conducted at 10 dB above the reflex threshold.

The stimulus duration can be set between 300 ms and 1700 ms (see Settings) and is visually represented by a green bar on the graph. If needed, the test pressure can be adjusted by pressing the PRESSURE button to access the dedicated adjustment screen.

At the end of the test, results are displayed alongside the corresponding graph, together with stimulus characteristics and calculated indices:

- **Reflex Amplitude** – Maximum compliance value (absolute) of the acoustic reflex.
- **Latency ON** – Time required for the reflex to reach 10% of maximum intensity, measured from the stimulus onset.
- **Latency OFF** – Time required for the reflex to decrease to 90% of maximum intensity, measured from the stimulus offset.

- **Rise Time** – Interval during which reflex values increase from 10% to 90% of the maximum while the stimulus is ON.
- **Fall Time** – Interval during which reflex values decrease from 90% to 10% of the maximum once the stimulus is OFF.
- **ON-rate** – Rate of compliance change during rise time (ml/s), calculated between 30% and 70% of the maximum amplitude.
- **OFF-rate** – Rate of compliance change during fall time (ml/s), calculated between 30% and 70% of the maximum amplitude.

If the test has not been performed or values cannot be calculated, indices will be displayed with the label "--".

The operator can also adjust certain settings directly from the ARLT interface via the dedicated function button. Options include defining the number of acquisitions used to calculate averaged results, and enabling or disabling the percentage indicators. Parameters are selected with the right-hand knob and fine-tuned using the left-hand knob. Additional configuration options are available through the main Settings menu.

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