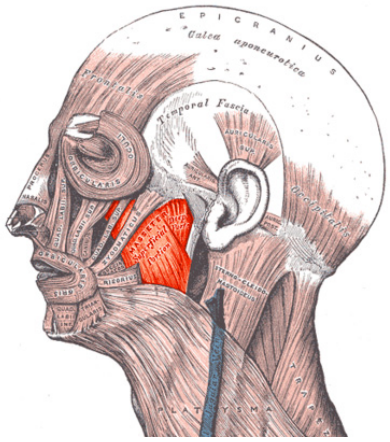
Lafayette Instrument

An Activity Sensor for the Masseter Muscle

The Masseter muscle connects the upper cheekbone to the jaw, crossing the molars on each side of the jaw and extending back nearly to the ear and is instrumental in chewing, biting, teeth clenching, and other movements involving the lower jaw. It will also move or flex in response to movement of the tongue, head, neck, and in some cases, even the eyes.



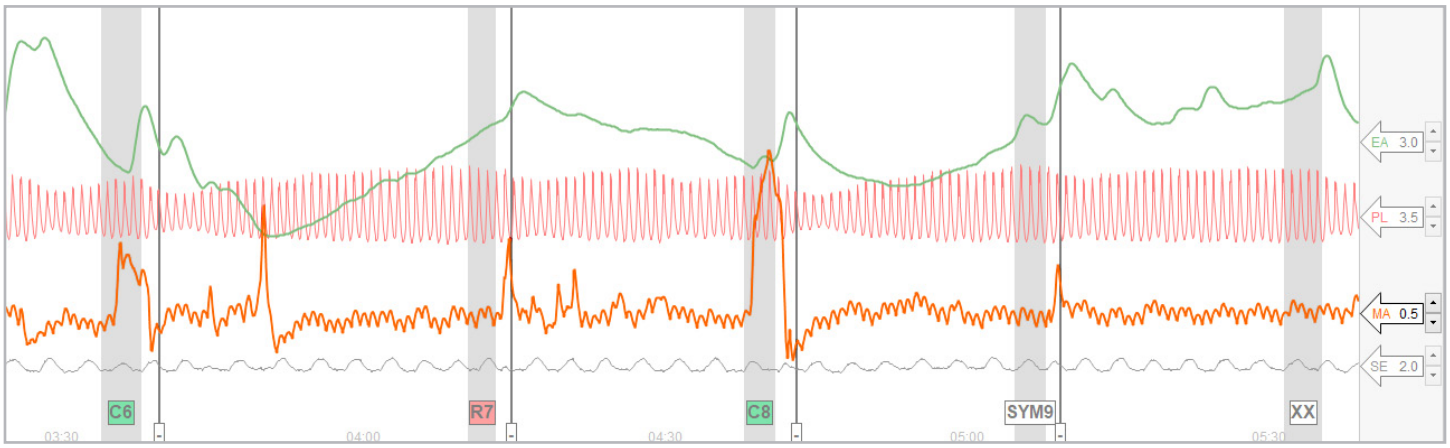
Masseter Muscle
(highlighted in red)

During polygraph testing, any movement or activity in the head and jaw area may affect the Masseter muscle to some degree. Activity during testing can be captured and recorded by an activity sensor placed directly over the Masseter muscle. Because it extends near to the ear, an over-the-ear headset provides a convenient device to position such an activity sensor in an optimal location. In addition to locating the sensor over the Masseter muscle, a headset would also provide audio and communications functions. It is from these ideas the Lafayette Masseter Headset was born.

The first iteration of the Lafayette Masseter Headset was released around 2012, and has been in use since then. The initial product design performed well in terms of locating the activity sensor, but had some limitations in terms of ease of use. An updated headset has been available since November 2019 and offers improvements in both ease of use and examinee comfort. Both audio and activity functions are combined into a single USB connection, providing simple plug-and-play convenience. The aviation-style headset features soft foam ear pads designed to be comfortable even when worn for a long period of time. The headset also offers 24dB of passive noise reduction, along with a noise-cancelling microphone, to help reduce ambient noise for the examinee, potentially reducing data artifacts that might occur due to environmental causes. This may also be useful in a classroom or training environment that may benefit from increased isolation of the examinee and examiner from others nearby.

LXSoftware receives data from the Masseter activity sensor and displays it in sync with data from an array of polygraph recording sensors. Because the Masseter Headset attaches directly to the computer via USB, it can be added to any Lafayette Data Acquisition System, including the LX6, LX5000, and LX4000 devices. The output from the Masseter activity sensor is displayed as a trace on the chart display, labeled by default as MA. This trace will allow an examiner to view recorded movements from the jaw area as they occur during an exam. Other artifacts, such as cardio, respiration, and verbal answer artifacts may also be observed.

AAPP Tech Talk: An Activity Sensor for the Masseter Muscle



Masseter Activity Tracing in LXSoftware 11.8.5

The headset can be enabled in LXSoftware by going to `Tools > Preferences > Administrator` and selecting the `Enable Masseter Headset` check box beneath the data acquisition settings.

Use of activity sensors has become an important part of the polygraph system. With the success and acceptance of activity sensors for the arms, feet and seat, the Masseter Headset addresses the remaining vulnerabilities involving movement or activity in the head and jaw area. The Masseter Headset can provide the examiner with insights into a variety of movements and activities, both regular and irregular, that can occur during a polygraph exam, and an increasing number of polygraph examiners have begun to adopt and implement its use.

As a companion to the Masseter Headset, we offer an examiner headset that does not include the Masseter activity sensor. Both headsets feature an adjustable boom microphone which allows two-way communication between the examinee and examiner.

Contact us to learn more about how the Masseter Headset can improve your polygraph examinations.

Lafayette Polygraph
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