Apparatus for Measuring Contact Pressure between the Tongue and Hard Palate

INVENTORS • JoAnne Robbins, Angela Hewitt, Elan Bomszyk, Christine Wurm, Aaron Kroner, Jon Kuchenreuther, David Meister,

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a mouth-supported device for treating dysphagia.

OVERVIEW

The tongue loses strength as individuals age, often resulting in loss of swallowing capacity (dysphagia) that in turn may lead to malnutrition in the elderly. Diagnosis followed by isometric tongue exercises can improve swallowing function; however, current devices for measuring tongue force cannot be reliably and reproducibly placed in a patient’s mouth, are not portable, only measure pressure at one point and may be too expensive for patients to buy and use for rehabilitation at home.

THE INVENTION

UW-Madison researchers have developed a mouth-supported device for treating dysphagia, which measures and reports the pressure exerted by the tongue against the hard palate. This apparatus can be used to assess swallowing function and to exercise the tongue muscle. It consists of conductive polymer pressure sensors mounted to a palate-contoured extension of a double mouth guard. The signal is sent through a compact circuit and the output can be displayed digitally or through the use of a tone generator. The device can also be set to signal when the tongue presses hard enough to reach a target pressure.

APPLICATIONS

• Diagnosing and treating dysphagia

KEY BENEFITS

• Reliable diagnosis – measures tongue/hard palate contact at two separate points
• Efficacious treatment – exercises tongue muscle to improve swallowing function
• Closely approximates natural configuration of the tongue and mouth
• Compact -- allows reliable and reproducible placement in a patient’s mouth
• Portable -- can be used by patients at home
• Inexpensive -- affordable for home use
• May be disassembled for cleaning of parts that contact the mouth

ADDITIONAL INFORMATION

Tech Fields
Medical Devices - Adaptive design

CONTACT INFORMATION

For current licensing status, please contact Jeanine Burmania at jeanine@warf.org or 608-960-9846.