Oral-Lever Resistance Exercise Device

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WARF: P05037US
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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a mechanical device that can be used for tongue exercises.

OVERVIEW

The tongue loses strength as a result of aging, illness or injury, often resulting in loss of swallowing capacity (dysphagia) that in turn may lead to malnutrition, dehydration or pneumonia. NIH-funded research has shown that isometric tongue exercises can improve swallowing function. UW-Madison researchers previously described an electro-mechanical device that can be used to exercise the tongue muscle (see WARF reference number P01398US).

THE INVENTION

The researchers have now developed a simpler and cheaper mechanical device that can be used for tongue exercises. The device consists of two levers that fit in the mouth and are connected by a spring or pin joint. During exercise, the user compresses the levers between the tongue and hard palate. Resistance is provided by springs or circular rubber belts similar to o-rings. To make the device more comfortable, the upper lever is custom fit to the hard palate, while the lower lever is adapted to the user’s tongue.

APPLICATIONS

• Strengthens the tongue to improve swallowing function

KEY BENEFITS

• Simple – all mechanical
• Inexpensive – may be semi-reusable, much like a toothbrush
• Portable – not connected to external instrumentation
• Small – can fit in a purse or pocket
• User may set resistance without external equipment
A feedback element may be included on either the upper or lower lever
Compatible with imaging instrumentation, particularly magnetic resonance imaging equipment

ADDITIONAL INFORMATION

Related Technologies
See WARF reference number P01398US for the inventors’ previous device.

Tech Fields
Medical Devices - Adaptive design

CONTACT INFORMATION

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