



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 Intellectual Property

- [View Continuation Patent in PDF format.](#)

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