Oral-Lever Resistance Exercise Device

Published date: March 14, 2017

Technology description

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

Additional Information

See WARF reference number P01398US for the inventors' previous device.
http://www.warf.org/technologies/summary/P01398US.cmsx

Application area

Strengthens the tongue to improve swallowing function

Advantages

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

Institution

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