

Effects of oral neuromuscular training on swallowing dysfunction among older people in intermediate care – a cluster randomised, controlled trial (part of the SOFIA study)

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Introduction

Swallowing dysfunction is a growing health problem among older people [1] and is considered a geriatric syndrome [2] associated with an increased risk of:

- Malnutrition
- Dehydration
- Pneumonia
- Mortality
- Reduced quality of life [1].

Study Aims

To investigate the effect of oral neuromuscular training among older people suffering impaired swallowing after stroke and other neurological diseases.

Methods

- The study is a prospective, cluster randomized, controlled trial
- An intention-to-treat principle was followed
- Mixed-effects were used for data analysis with the clustered study design as a random factor

Measurement methods

At baseline, end-of-treatment and 6 months post-treatment:

- Timed Water Swallow Test (TWST) - (<10mL/sec being the pathological level)
- Signs of aspiration as shown by the TWST
- Swallowing Related Quality of Life (QOL)

Results

- 385 participants from 36 intermediate care units were screened
- 63% had swallowing difficulties
- 116 participants were randomly assigned to:

An intervention group:

(n = 49)

Median age 83 (range 72 – 87)

Treatment: IQoro neuromuscular training
90 sec./day x 5 weeks

A control group:

(n = 67)

Median age 85 (range 80 – 89)

Treatment: usual care x 5 weeks

At end-of-treatment in the intervention group:

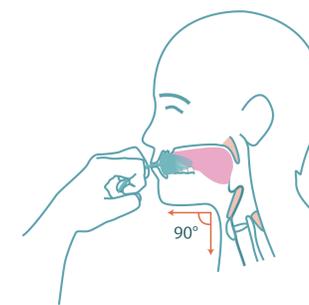
- Swallowing improved 60% more than that of controls ($p = 0.007$) as measured by the geometric mean of the swallowing rate
- Signs of aspiration significantly reduced ($p = 0.01$) compared with controls.

At 6 months follow-up in the intervention group:

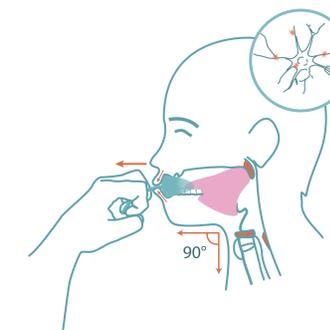
- The swallowing rate remained significantly better ($p = 0.031$) as measured by the geometric mean of the swallowing rate.
- No significant between-group differences were found for swallowing-related QOL.



IQoro neuromuscular training device.



IQoro placed behind the lips; at rest, before exercise.



Effect of IQoro training when pulled forward.

Conclusion

IQoro training is a new, promising swallowing rehabilitation method for older people suffering impaired swallowing after stroke and other neurological diseases.

It improves impaired swallowing and reduces signs of aspiration after just 5 weeks' treatment and has lasting effects 6 months post-treatment.

[1] Ortega O, Martin A, Clave P. Diagnosis and management of oropharyngeal dysphagia among older persons, state of the art. *J Am Med Dir Assoc* 2017; 18: 576–82. doi:10.1016/j.

[2] Baijens LW, Clave P, Cras P et al. European Society for Swallowing Disorders – European Union Geriatric Medicine Society white paper: oropharyngeal dysphagia as a geriatric.