NSW Speech Pathology
Evidence Based Practice Interest Group

Critically Appraised Paper (CAP)

CLINICAL BOTTOM LINE:
In health elderly people with 20 or more teeth, daily oral musculature and swallowing exercises (including tongue exercises) can result in improved oral function. However, a direct link between tongue strengthening exercises and an improvement in the swallow function cannot be made from this paper as there were a variety of oral and swallowing exercises completed as part of the exercise program.

Clinical Question [patient/problem, intervention, (comparison), outcome]:
Do tongue strengthening exercises affect the oropharyngeal swallow?

Citation: Ibayashi, H., Fujino, Y., Pham, T.M., & Matsuda, S. (2008). Intervention Study of Exercise Program for Oral Function in Health Elderly People. *Tohoku J. Exp. Med. 215*, (237 - 245).

Design/Method: Randomised Controlled Trial

Participants: 54 healthy elderly (aged 65 or more) people living in the Fukuoka Prefecture community, Japan. All participants underwent pre and post intervention assessment of bite force, Repetitive Saliva Swallowing Test (RSST), and salivary flow rate.

Experimental Group: 26 of the 54 subjects were assigned to the experimental group. An exercise program for oral function was devised which consisted of four exercises: exercises for expression muscles, tongue, salivary glands and swallowing. The experimental group carried out the exercise program at the local community hall once a week and were given written information describing each exercise to complete at home daily. The participants were enrolled in the program for 6 months.

Control Group: 28 of the 54 subjects were assigned to the control group. There were no significant differences in age, sex, and number of remaining teeth between the control group and the experimental group.

Results: All oral functions investigated significantly improved after six months in the intervention group, while the control group showed no improvement.
A second unexpected finding was also made between participants with 20 or more teeth and less than 20 teeth. In the intervention group, participants with more than 20 teeth showed significant improvement in oral functions, whereas participants with less than 20 teeth showed no significant improvement. In the control group, no improvement was observed regardless of dentition.

Comments

- Strength of the paper include: randomised controlled trial; multiple measures used to assess oral functions.
- Weaknesses of the paper include: smaller sample size than anticipated (460 were approached to participate); tongue strength not a specific measure of the oral functions measured, and no objective evaluation of swallowing / aspiration status was conducted.

Level of Evidence (NH&MRC): II

Appraised By: NSW Adult Swallowing EBP Group

Date: May 2010