

Study of improved oral function with oropharyngeal sound analysis

—Changes in swallowing function with a vertical vibration device—

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Abstract

The 2019 Statistics on the cause of deaths by the Ministry of Health, Labour and Welfare placed aspiration pneumonia as the sixth cause of death. Ninety nine percent of deaths caused by aspiration pneumonia are among elderly people. As society continues to age, the incidence of aspiration pneumonia will most likely increase as well. A cause of aspiration pneumonia is aspiration caused by dysphagia. It has been reported that aspiration pneumonia can be prevented by improving the swallowing function. Presently, in care facilities, swallowing training is being provided to improve swallowing function; however, elderly people need the support of a caregiver. To that end, with an anticipated increase in the number of patients and the need to reduce the burden of caregiving, a method to prevent the decrease in swallowing function suitable for elderly people is strongly desired. We focused on external stimulation with a vertical vibration device, of which the preventive effect of decreased muscle strength in lower limbs has been indicated. We hypothesized that the external stimulation could prevent a decrease in the strength of muscles related to swallowing and measured changes in the swallowing function by vertical vibration. The result did not confirm a significant difference in the swallowing interval by the external stimulation, but there was a decreasing tendency. The reason the difference was not significant may be that participants were healthy and in their 20s, thus having no decrease in their swallowing function; and thus, decrease in the swallowing interval by improved swallowing function was minor. Thus, we plan to include elderly people in the study, for whom a decrease in swallowing function is likely. Tottori J. Clin. Res. 13(1-2), 118-124, 2021

Key words: swallowing function, swallowing interval, vertical vibration, aspiration pneumonia, elderly medical care