



Editorial

Special Issue “Exercise-Induced Facial Rejuvenation and Orofacial Strength and Function”

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Received: 10 December 2020; Accepted: 11 December 2020; Published: 15 December 2020



The desire to stay young and beautiful forever is a common aspiration for everyone. Thus, there is no doubt that research is needed to achieve these desired outcomes. For example, it is well known that sagging skin and wrinkles can appear on the face of older men and women. Although there are several methods currently used for correcting signs of facial aging (e.g., the injection of botulinum toxin or dermal fillers), there is a growing interest in improving and/or delaying facial aging through facial exercises aimed at strengthening, moving and manipulating facial muscles [1]. These facial exercises and movements may also affect the prevention and improvement of swallowing disorders (dysphagia) and cognitive function.

Smith and colleagues [2] reviewed the literature to evaluate the efficacy of facial acupuncture and facial exercise on facial rejuvenation. They summarized that both facial acupuncture and facial exercises have the potential to improve skin laxity, wrinkle length, and pigmentary changes associated with aging. This facial rejuvenation may require the favorable effects of facial acupuncture and facial exercise on the soft tissues of the face, especially changes in muscle size and function [1]. Ultrasound is an affordable way to investigate these changes, but it is important to know their reliability. Abe and colleagues [3] examined the absolute and relative reliability of measuring facial muscles by B-mode ultrasound. The authors reported that the relative reliability was similar to that observed previously, but the absolute reliability had not been previously reported. The absolute reliability (error) associated with measuring muscle thickness of the face may be greater than that of the limb/trunk muscles. These results will contribute to the evaluation of measurements of complex and small-sized facial soft tissues.

Orofacial muscle (i.e., lip and tongue) strength and function are also expected to be enhanced when facial exercises are done. This is important because lip strength and function can influence daily activities such as facial expression, speech production, eating behaviors, and even indirectly influence swallowing capacity. Women who have lower lip strength levels compared to men and older adults (>80 years) who have lower lip strength compared to younger adults may be particularly interested in ways to enhance these orofacial muscles through exercise. One study by Viana and colleagues [4] systematically reviewed the effects of chewing gum training on orofacial strength and cognitive function in healthy adults. They concluded that chewing gum training improved some variables (e.g., maximal bite force) related to orofacial function, but there was no clear effect of chewing gum training on cognitive function. Besides using chewing gum to train orofacial muscles, orofacial muscle (lip and tongue) strength measurement devices, such as the Iowa Oral Performance Instrument (IOPI), can also be used for training. Wong and colleagues [5] summarized that a variety of devices are used for training interventions to improve lip strength and function, and that these interventions have been shown to increase lip strength in not only young and old healthy adults but also in patients with stroke and in patients with lip incompetence.

Evaluation of orofacial strength is difficult without the use of specialized equipment. Abe and colleagues [6] proposed a practical method for assessing lip strength using a water bottle in healthy

adults. The process used to evaluate lip muscle strength with a water bottle can also be used as a means of training to enhance lip compression strength. However, it is unknown what exercise intensity is most effective for improving lip strength [5]. Thiebaud and colleagues [7] investigated the differences in lip and tongue muscle strength and endurance and the ability to estimate various exercise intensities between instrumentalists and non-instrumentalists (control). The authors reported that lip and tongue strength and endurance are not impacted by years of instrumentalist training compared to healthy controls. Furthermore, they also reported that moderate intensities are better estimated with the tongue, while higher intensities are better estimated by the lip, although there was no difference between the two groups.

I hope these findings will contribute to the future development of this topic. Finally, I am very grateful to the authors of this Special Issue.

Conflicts of Interest: The author declares no conflict of interest.

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