

# Can the BONE rejuvenate perceived age?

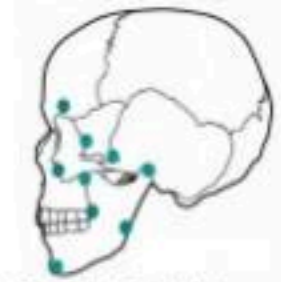
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## INTRODUCTION



Facial wrinkles and swelling give the impression of aging.



Stimulation of the bones along the fusion line secretes large amounts of hormones

Functional and structural changes in the facial epidermis, such as wrinkles and swelling, have been reported to accelerate with age beginning in the late 30s (Takahashi et al., 1988). The skull is made up of 22 bones fused together, and it was reported that acupuncture stimulation to the bones with an awareness of their suture lines increases hormones secreted from bones and blood flow, resulting in reductions in wrinkles and swelling (Nishime et al., 2018). We developed "BONE", which is a health exercise with music, based on Yuzaki Method (Yuzaki, 2017; 2023). The BONE effectively stimulates bones throughout the body significantly improves health indicators.

### The BONE (Building Osteo Neatly Exercise)

- Bone density, Walking ability (Yanaoka et al., 2020)
- Cognitive function (Takaura et al., 2019)
- Immune function (Kurosaka et al., 2020)



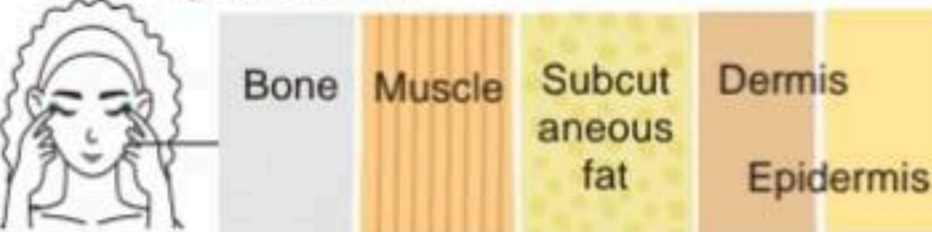
However, no evidence is available regarding that the effect of skull-specific BONE on facial conditions.

Therefore, the purpose of this study was to determine whether the BONE can eliminate facial wrinkles and swelling.

## METHOD

Twenty-two adult participants (age 40.5±4.5 years) were divided into two groups: the intervention group (n=11) and the control group (n=11). The intervention group underwent a 30-minute BONE on the face, while the control group did nothing for the same amount of time.

Table1. Components of the face approached by the BONE



BONE Video Scan here



Table2. The BONE

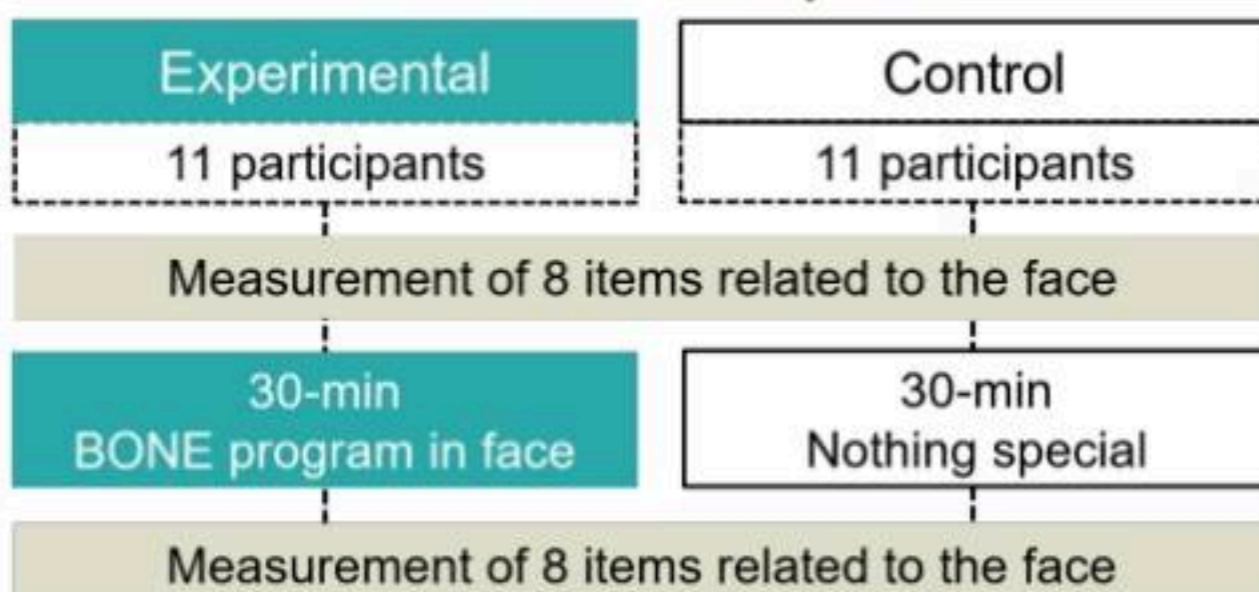
The BONE consisted of acupuncture on the skull sutures, jaw, cheek, eye socket, and nose. The 30-minute program consisted of a 25-minute acupuncture on the aforementioned areas, followed by a 5-minute acupuncture on the same areas with music.

Examples of the BONE



Both groups were evaluated by measuring eight facial parameters (face area, number of pores, spots, wrinkles, crows feet, wrinkles, dark circles, and redness) using HiMirror-Professional (Corefit Co., Ltd.) before and after 30 minutes. A two-way ANOVA (group × time) was conducted with a significance level of less than 5%.

Table3. Measurement protocol



## RESULT

It was showed that area of face (p=.000), number of face blemishes (p=.003), fine lines of the eyes(p=.003), fine lines of the face (p=.001) after BONE significantly decreased compared to before the BONE.

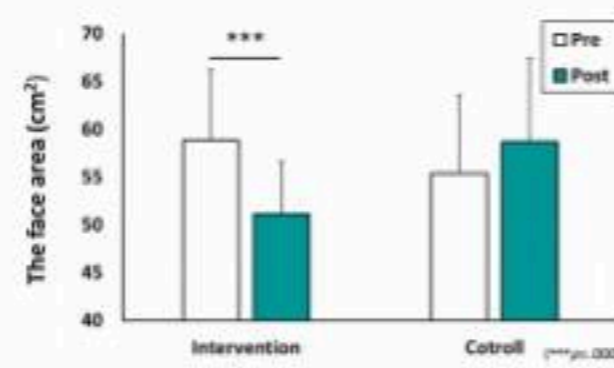


Fig1. The comparison of the face area

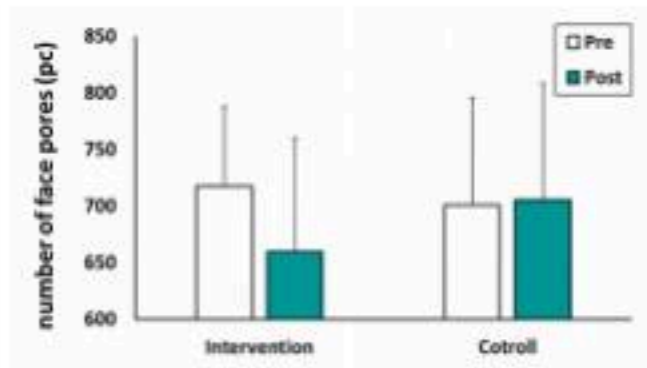


Fig2. The comparison of the number of face pores

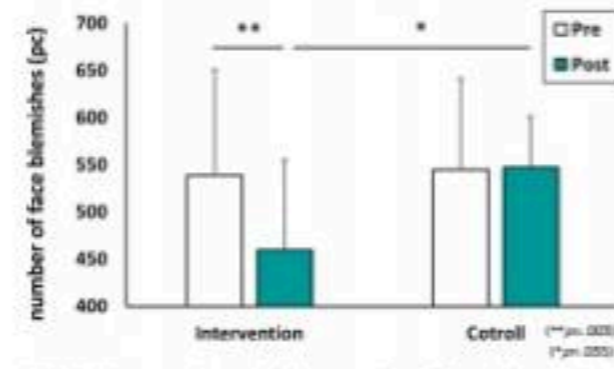


Fig3. The comparison of the number of face blemishes

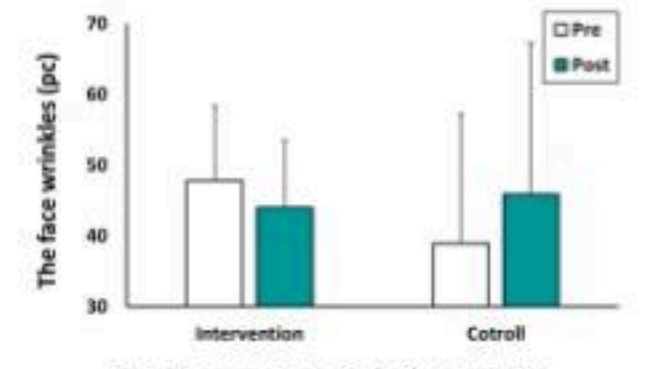


Fig4. The comparison of the face wrinkles

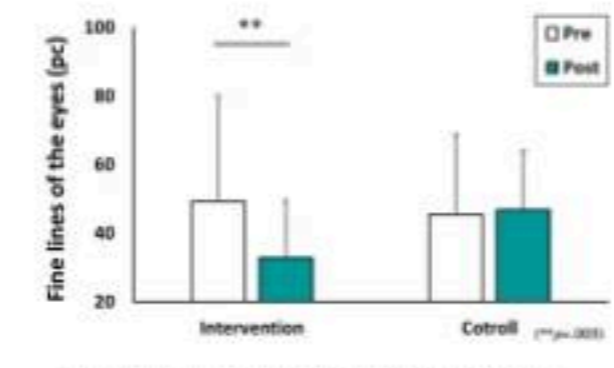


Fig5. The comparison of the fine lines of the eyes

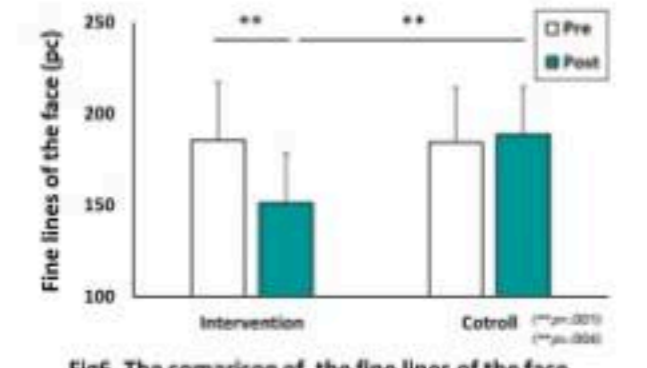


Fig6. The comparison of the fine lines of the face

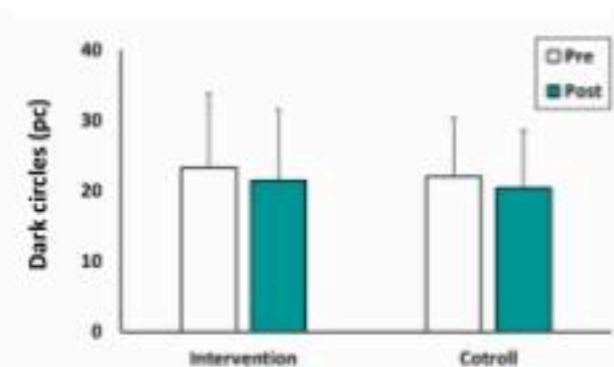


Fig7. The comparison of the dark circles

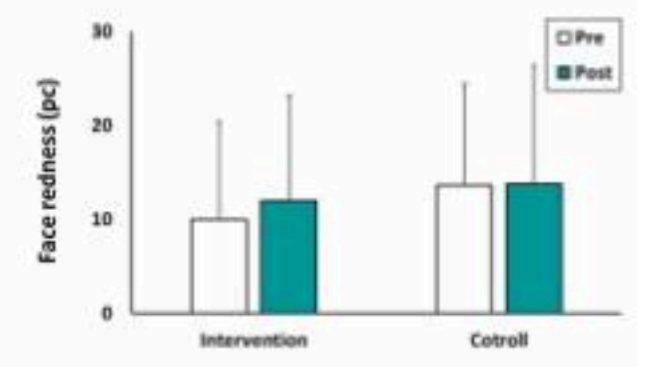
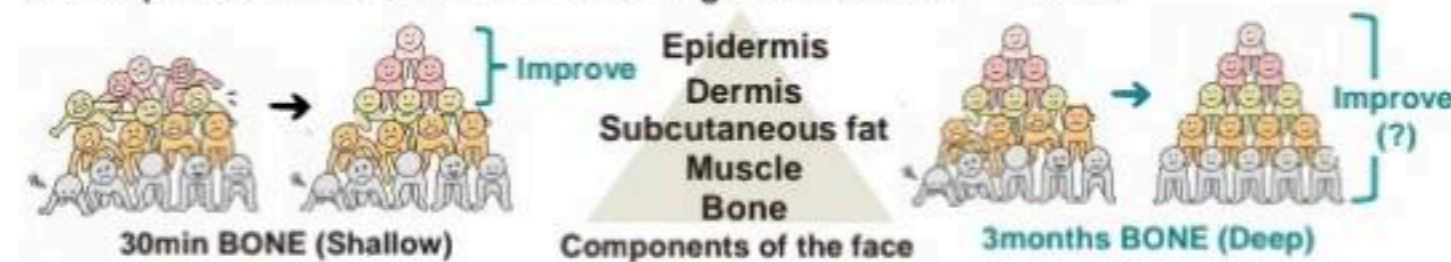


Fig8. The comparison of the redness

## DISCUSSION

Face wrinkles are formed by two types: deep-wrinkle and shallow-wrinkle. Deep-wrinkles are caused by 1) the decrease in facial bone density, which forms the contour of the face and 2) the decrease in the amount and strength of facial muscles, which form facial expressions. Shallow-wrinkles are caused by the decrease in blood flow to the dermis and epidermis, which prevents the skin from receiving the nutrients it needs.



The BONE used in this study provided a 30-minute facial stimulation, and, thus, potential mechanism of acute reductions in wrinkles, dark spots, and edema following the BONE is likely due to the increase in skin blood flow. It would be interesting to determine whether the BONE for long-term would reduce deep-wrinkles because we already demonstrated the BONE for two or three months can improve bone and muscle strengths (Kurosaka et al., 2019; Yanaoka et al., 2020; Kurosaka et al., 2021). Despite the intervention for short duration, the present study showed that BONE can reduce face wrinkles for people in their late 30s and beyond. Further studies are needed to investigate the effects of BONE for long-term on facial bone and muscle strength.

## CONCLUSION

