

Facial Cosmetic Acupuncture - An Alternative Theory for the Mechanisms behind its Effectiveness

By: Anthony
Kingston

Keywords:
Cosmetic
acupuncture,
acupuncture
research,
micro-needling,
facial cosmetic
acupuncture,
facial
acupuncture,
facial
rejuvenation
acupuncture.

Abstract

The purpose of this paper is to explore recent research into facial cosmetic acupuncture (FCA), which suggests that positive results from the treatment may be due to the effects of relatively deep needle insertion into the facial muscles rather than solely due to collagen induction from needling into the more superficial dermis. These results suggest that FCA may operate through a wider variety of biological processes than previously thought.

Background

Ancient techniques for the application of Chinese medicine for cosmetic purposes are still taught in many modern teaching institutions. The University of NSW in Australia, for example, includes the techniques of 'circling the dragon' for scars and the use of plum blossom needles (seven star needles) to benefit various forms of alopecia in its curriculum. However, facial cosmetic acupuncture (FCA) has come to mean much more in modern clinics. It typically refers to the application of acupuncture needles to the face to benefit signs of ageing such as wrinkles, sagging and discolouration. However, the practice of FCA has become increasingly divorced from traditional theory. Original treatments like 'circling the dragon' were important for cosmetic reasons but were also important to treat health problems that can arise due to effects of scars cutting across acupuncture channels. This is commonly applied to scars from gynaecological surgery, due to the importance of the channels that traverse the lower abdomen. Many modern approaches to FCA treatment ignore such considerations of acupuncture channel theory all together.

main organs of the body. Therefore, treating a wrinkle on a certain part of the face can benefit the associated organ in a similar way to ear acupuncture. To improve the cosmetic results of the treatment the same organ is also typically treated by needling acupoints on the body as well as prescribing herbs in order to benefit this particular part of the face. In the experience of the author, this connection between the underlying health and constitution of the patient and the appearance of the face is important and improves the clinical results of FCA. However, in order to obtain superior clinical results it is vitally important to understand the scientific evidence of how FCA actually works.

Historical perspective

The first concrete evidence of research into FCA did not appear until 1996 with a study of 300 cases.¹ The methodology was based on subjective patient feedback and overwhelmingly supported the efficacy of the treatment. Other English-language studies supported these subjective conclusions,² but it was not until Korean researchers showed an interest in FCA that more objective measurements began to be applied to measuring the efficacy of FCA, while other studies began to evaluate the biological mechanisms involved in these results.

In order to obtain superior clinical results it is vitally important to understand the scientific evidence of how FCA actually works.

Does FCA achieve results through collagen induction?

The FCA explanatory mechanism most commonly cited in the online advertising of FCA practitioners is collagen induction. However, currently no studies have been done to measure the increase in collagen induction following a treatment with FCA using

Some forms of FCA retain their connection to traditional theory, according to which there are connections between certain parts of the face and the

traditional filiform acupuncture needles. However, studies of other forms of skin needling can shed light on this subject.

Micro-needling is the use of small hand-held rollers that usually contain 192 tiny needles between 0.5 and 1.5 millimetres long.³ When a micro-needle roller is rolled across the skin 15 times it produces an average of 215 punctures per square centimetre.⁴ To measure collagen induction skin biopsies are taken and collagen content in the skin measured before and after treatment. Following treatment with micro-needling an average increase in collagen of approximately 206 per cent has been recorded.⁵ It is understood that this collagen is produced as a result of the mild trauma of the needling activating a physiological cascade involved in wound healing.⁶ This clearly demonstrates that needling can increase collagen production in the skin. Unfortunately the number of punctures made by a micro-needling roller makes it difficult to speculate how much collagen a single filiform acupuncture needle can produce. If the wound-healing cascade is indeed the cause of the collagen induction then this suggests that more punctures will induce more collagen. Thus FCA treatments employing between six and 20 facial needles would be far less effective than treatments such as micro needling at inducing collagen.

Studies using micro-needling rollers with needles up to 1.5 millimetres long have shown that collagen induction only takes place up to 0.6 millimetres into the skin at the border between the epidermis and the dermis.⁵ However, most TCM practitioners of FCA tend to insert needles much deeper than this. Even shallow needle-threading techniques that pass under wrinkles tend to penetrate the skin by at least several millimetres. The question then becomes whether practitioners who employ deeper needling techniques on the face are missing the beneficial effects, as collagen induction only takes place when needling much more shallowly. Longer needles will of course induce some collagen as they pass through the superficial levels of the skin, but penetration beyond 0.6 millimetres into the skin seems to be unnecessary if the only goal is collagen induction.

Recent research on deeper needling: alternative mechanisms of action

A 2013 literature review included 27 papers on the topic of FCA from the last 15 years.⁷ Several of these studies suggest alternative mechanisms for FCA's effectiveness - that FCA influences the muscles in ways not previously studied and that penetration of needles into these muscles may be the key to achieving optimal results. Of the 27 papers mentioned in this study, those that specifically deal with the potential mechanisms behind FCA are investigated below.

Research on acupuncture for Bell's palsy has shown that acupuncture needles can improve muscle tone in the

face. A 2015 review included 14 randomised controlled trials and concluded that acupuncture can assist both the paralysis and the muscle weakness caused by Bell's palsy.⁸

Loss of elasticity or muscle weakness in the facial (mimetic) muscles are widely considered an inevitable part of ageing and thus thought to contribute to the appearance of ageing on the face.⁹ What is often not understood is that the facial muscles gradually shorten and straighten with age due to increased resting muscle tone.⁸ A 2007 study effectively used FCA to restore mimetic muscle tone as measured by MRI scans of changes in the contour of the facial muscles.⁹ This idea was explored further in 2013 by a study which employed sessions of FCA over several weeks to improve mimetic muscles and facial elasticity. Moire topography was used to measure changes after the FCA sessions,¹⁰ and a small but noticeable difference was recorded.¹¹ These studies suggest that FCA may be able to restore muscle tone to a more 'youthful' state and change the facial shape.

What is often not understood is that the facial muscles gradually shorten and straighten with age due to increased resting muscle tone.

Several further studies suggest that relaxing the muscles in the face may have other beneficial effects. In 2008 a study speculated that age-related dryness of the skin on the face may be caused by heat generated by tight facial muscles.¹² This heat increases with age as the resting muscle tone increases. This study showed that FCA may be able to reduce this heat and in this way slow or even reduce the signs of ageing caused by dryness of the skin. This idea was supported by a 2013 study showing that FCA using acupuncture points on the face increased oil and water content on the face after treatment.¹³

Thus it appears that FCA can reduce the resting muscle tone of the facial muscles that naturally increases with age, and thus changes the shape of the face. By increasing relaxation and elasticity of these muscles it may also reduce heat produced by the facial muscles, thus reducing skin dryness that is associated with wrinkle formation. Importantly, if at least part of the mechanism of the effectiveness of FCA lies in penetration of the deeper muscles of the face, then needling that passes through the superficial layers of the skin has a distinct advantage over more superficial cosmetic techniques that focus solely on collagen induction.

Conclusion

Collagen induction has often been assumed to be the principal biological mechanism through which FCA achieves results. The research discussed in this article suggests that a second mechanism - caused by stimulation of the muscles of the face, below the depth where collagen induction occurs - may also be involved.

Anthony Kingston studied Acupuncture in Sydney, Australia, graduating with a Masters of Health Science. He jointly founded the first specialist cosmetic skin-needling clinic in the Southern Hemisphere. He is author of the International Best selling book *Holistic Microneedling* and is expert skin-needling advisor to BABTAC, the UK's largest beauty association. To learn more please visit www.whitelotusantiaging.co.uk.

References (Endnotes)

- 1 Zhang, Q. & Zhu, L. (1996). "Meridional Cosmetology: Report of 300 Cases with Discussion of Underlying Mechanism". *International Journal of Clinical Acupuncture*, 7(4): 401-405.
- 2 Barrett, J. B. (2005). "Acupuncture and Facial Rejuvenation." *Aesthetic Surgery Journal*, 25: 419-424
- 3 Kingston, A. (2012). *Holistic Microneedling - The Manual of Natural Skin Needling*. Bright Pen: Sandy, UK
- 4 Anastassakis, K. (2005). "The Dermaroller™ Series". Private Paper.
- 5 Liebl, H. (2006). "Abstract reflections about collagen-induction-therapy (CIT). A hypothesis for the mechanism of action of collagen induction therapy (CIT) using micro-needles." Available at <<http://www.genuinedermaroller.com.au/science/how-it-works>> (accessed 28/08/2014)
- 6 Fernandes, D. (2005). "Minimally Invasive Percutaneous Collagen Induction." *Oral Maxilla Facial Surg Clinical*. 17:51-63
- 7 Kim, T. Y. (2013). "Trend Analysis of Facial Cosmetic Acupuncture Study based on the Korean Traditional Medicine". *The Acupuncture*. 30(5): 125-137.
- 8 LI, P., Qiu, T. & Qin, C. (2015). "Efficiency of Acupuncture for Bells Palsy: A Systemic Review and Meta Analysis of Random Controlled Trials." *PLoS ONE* 10(5): e0121880. doi:10.1371/journal.pone.0121880
- 9 Louarn, C.L., Buthiau, D., Buis, J., (2007). "Structural aging: the facial recurve concept," *Aesthetic Plastic Surgery*, 31(3): 213-218.
- 10 Younghee, Y. Sehyun, K. Minhee, K et al. (2013). "Effect of Facial Cosmetic Acupuncture on Facial Elasticity: An Open-Label, Single-Arm Pilot Study". *Evidence-Based Complementary and Alternative Medicine*, Article ID 424313, doi:10.1155/2013/424313
- 11 Moire topography is a technique used to evaluate topographical changes in the human body. In this study it was employed to evaluate the changes in contour lines of the cheek and perioral regions.
- 12 Hwang, D.S., Song, J.H., Kim, Y.S., et al. (2008). "The Changes of Facial Temperature by Miso Facial Rejuvenation Acupuncture: A Case Study". *The Journal of Korean Acupuncture & Moxibustion Society*. 25(1): 89-95.
- 13 Kim, M. S. (2013). "A Study on Cosmetic Acupuncture Through Anatomy and Physiology Interpretation". *Korean Journal of Acupuncture*. 30(3): 171-177