

Application of Nano-microneedle Therapy and Astaxanthin Repair Dressing for Lip Beauty

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Introduction:

Lips are an important physiologic and aesthetic component of the face. Young plump upper lip and bright lip color can enhance personal attractiveness. With age, the main manifestations of lip aging are deepening of lip wrinkles^[1] and diminishing of natural lip color^[2]. Non-invasive therapy, minimally invasive therapy and surgical therapy has been developed for lip beauty. Among them, non-invasive therapy includes laser, perioral dermabrasion and chemical peeling.

Carbon dioxide laser therapy is currently the most commonly used laser therapy in clinic, which can accurately ablate the target tissue level, it can induce the formation of small injury area and wound healing response in the dermis, promote collagen regeneration, improve lip wrinkles. At the same time, it can promote the expansion and regeneration of capillaries in the treatment area, increase lips blood circulation, add nutrient supply to lip cells, promote the renewal of lip tissue cells, improve lip color^[3].

Perioral dermabrasion therapy is mainly for superficial fine wrinkles, with high-speed injection of silicon oxide crystals on the surface of the mouth, use the mechanical effect of high-speed crystals to rub away the skin on the surface of the reticular dermis or papillary dermis. Although the cost of equipment required for clinical use of perioral microdermabrasion technology is low, it is easy to cause microbial contamination of treatment equipment to patients skin fragments and blood aerosols.

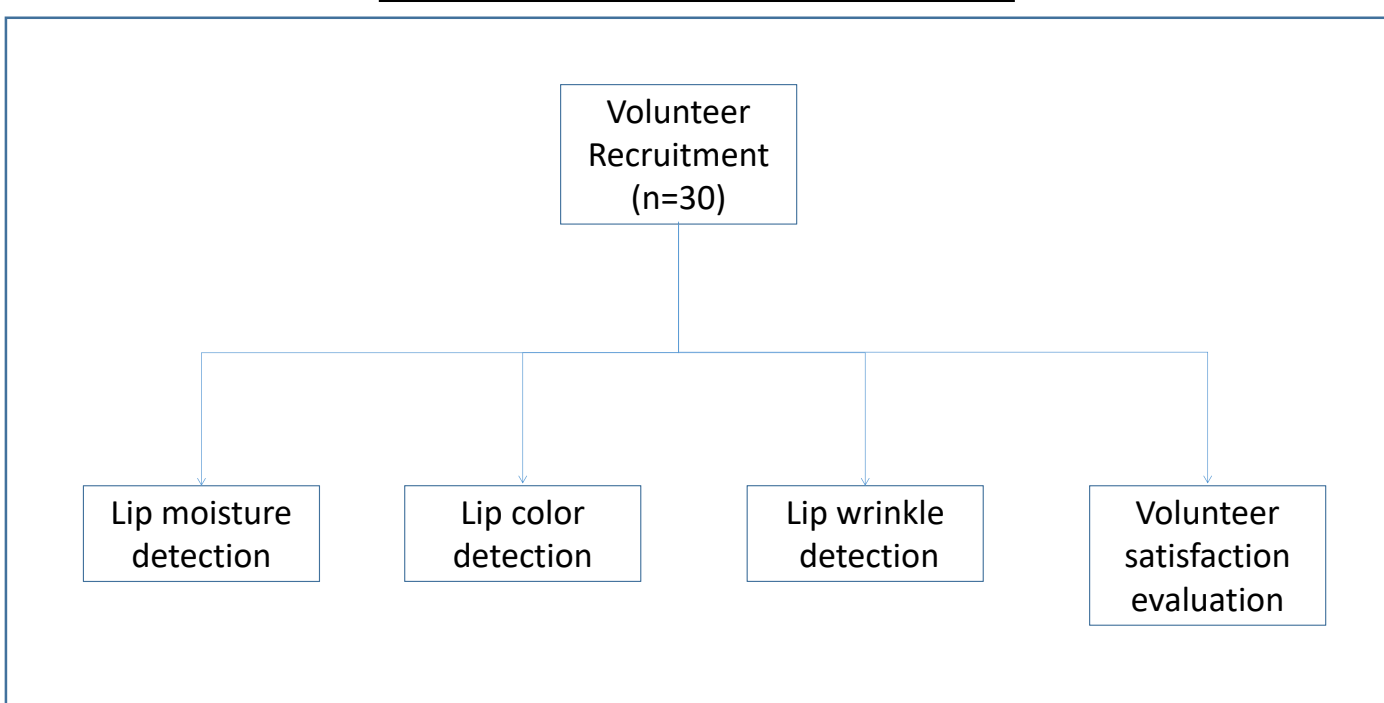
Chemical peeling is the use of high concentrations of chemical drugs to peel off aging skin to accelerate the renewal of keratinocytes and promote the increase of elastic fibers in the dermis. According to the depth of action, it can be divided into superficial chemical peels, moderate chemical peels and deep chemical peels. Chemical peels have a significant effect of wrinkle removal, but it is easy to cause local skin hypopigmentation after treatment.

Non-invasive has the advantages of less traumatic, short time and low cost, but it is easy to cause heat damage, hypopigmentation and hyperpigmentation^[1].

Nano-microneedle is an emerging transdermal penetration enhancement technology, it can open skin barrier channel, promote drug absorption and stimulate dermal fiber regeneration. Compared with ordinary microneedles, nano-microneedle have small needles and have a faster recovery of the skin barrier^[4]. Nano-microneedle therapy has the characteristics of small trauma, no heat damage and high safety.

This paper describes a new application for lip beauty using nano-microneedle therapy and astaxanthin repair dressing, observe its effect on improving lip color and lip wrinkles, expect to develop a new non-invasive therapy method for lip beauty.

Materials & Methods:



Results & Discussion:

Lip improvement

All 30 volunteers completed the test as required. After 4 nano-microneedle operations, combined with the use of astaxanthin dressings, Dermalab was used to test the moisture content improvement rate and color improvement rate of the lips before and after the operation using a camera (a* value of the lip represents lip color). Take pictures and analyze the improvement rate of lip wrinkles through software (middle value of upper lip and lower lip represents lip wrinkle). Volunteers' lip moisture, lip color, and lip wrinkles were greatly improved. The results are shown in Table 1, and typical cases are shown in Figure 1 and Figure 2.

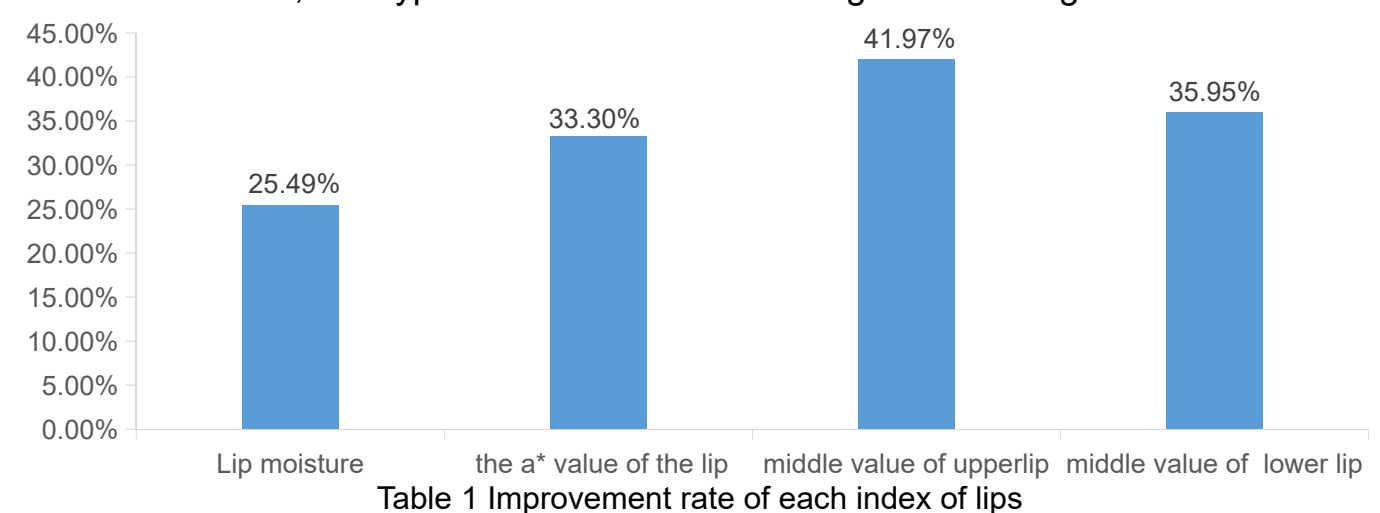


Figure 1 Typical case 1 Comparison before and after operation



Figure 2 Typical case 2 Comparison before and after operation

Volunteer satisfaction

All 30 volunteers completed the test in accordance with the process and conducted a satisfaction survey on the subjects. The results are shown in the table 2.

Table 2 Volunteers' satisfaction with the results

Very satisfied	satisfaction	general	Dissatisfied	Total	Satisfaction rate
20	9	1	0	30	96.7%

Conclusions:

Application of nano-microneedle therapy and astaxanthin repair dressing for lip beauty can effectively improve lip wrinkles and lip color, with high safety and no serious adverse reactions. It is a new non-invasive therapy method for lip beauty and has certain promotion value.

Aknowledgments:

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