

# The Present Situation and Reflection on the Development of Chinese Medical Cosmetology Industry

Yinrui Sun<sup>1,\*</sup>, Xiaoyue Yang<sup>2</sup>

<sup>1</sup>School of Basic Medicine, Shenyang Medical College, Shenyang, China

<sup>2</sup>Shenyang Heping Yuanchen Medical Beauty Clinic, Shenyang, China

\*Corresponding author

**Abstract:** This paper takes medical beauty as the research object. Firstly, the development history of medical beauty industry in the world and in China is sorted out. On this basis, the functional classification of medical beauty technology products is carried out according to the development status of medical beauty technology products, and the three most popular mainstream products, namely, fruit acid skin rejuvenation, injection therapy and photoelectric technology, are emphatically discussed. Finally, this paper analyzes the future development direction of China's medical and beauty industry based on the data of consumer attitude changes, and proposes that practitioners in the medical and beauty industry should help customers establish a correct aesthetic concept, explore, find and adhere to the unique beauty of each individual.

**Keywords:** Medical beauty industry, Fruit acid skin change, Injection therapy, Photoelectric technology, Development direction

## 1. Introduction

With the gradual improvement of material living conditions and the continuous progress of social civilization, people's desire for beauty has become increasingly strong. Medical beauty and plastic surgery have become important means for people to pursue beauty. In practice, a variety of beauty technologies have been updated and beauty products have emerged in an endless stream, and their development speed has far exceeded the pace of theoretical research in this field. In order to better promote the guiding role of theory on beauty projects in practice and help the public form a correct understanding of beauty projects, this paper takes medical beauty as the research object, studies the current situation of the development of China's medical beauty industry, and reflects on the development of the industry in combination with the changes in consumer attitudes. The value of this paper is reflected in two aspects: Firstly, systematic popularization of medical beauty, increasing the attention of the academic community to this field, and helping the public to understand the medical beauty industry more comprehensively and scientifically. The second is to put forward some views and suggestions on the rapid development of the domestic medical and beauty industry.

## 2. Tracing the development of medical beauty industry

### 2.1. Development pattern of medical beauty industry in the world

Medical beauty originated in Britain during the first World War and was used to repair and reshape the damaged face during the war. The skin transplant operation of Harold Gillies, a British doctor, pioneered the modern plastic surgery in the real sense of human history. Since then, people can use technical means to solve various physiological defects such as scars and deformities that have plagued them for a long time. People's desire and conception of beauty are no longer empty talk.

Then, with the change of the world economic and political situation, the medical and beauty industry in the United States also emerged. In 1931, the world's first association of plastic surgeons was established. In 1962, the world's first silicone prosthesis breast augmentation operation was also successfully completed in the United States. In 1969, plastic surgery was included in general surgery. In 1992, the world's first medical botulinum toxin was born. In 1996, he invented the first laser hair removal

technology. At present, the medical and beauty industry in the United States has gradually entered a mature stage of development. The function of medical cosmetology has gradually changed from repairing defects to pursuing perfection or catering to mainstream aesthetics.

In addition, South Korea is also a rising star in the medical beauty industry. After the economic development of South Korea, the medical and American industry began to develop gradually, and medical and American institutions were established one after another. With the support of the South Korean government, the medical and beauty industry has gradually developed into a pillar industry in South Korea.

## 2.2. Development history of Chinese medical beauty industry

Compared with the above-mentioned countries, China's medical cosmetology industry developed later and originated after the founding of the people's Republic of China. Its development has gone through the embryonic stage and the initial stage, and it is now becoming mature.

From 1949 to 2008, China was still in the embryonic stage of medical aesthetics. The development scale is small and the start is slow. It is mainly public hospitals, such as the plastic surgery department set up by the Third Hospital of Peking University, Beijing Badachu and Shanghai 9<sup>th</sup> Hospital. At that time, people had no concept of medical cosmetology, and the degree of acceptance and demand were not high. The main content of industrial practice at this stage was passive plastic surgery such as wound repair and correction.

From 2008 to 2014, the medical beauty industry entered the initial stage in China, and the medical beauty industry began to develop rapidly. The organizations that carry out medical cosmetology are no longer limited to the traditional hospital system. Private institutions have begun to emerge. Well known foreign enterprises have broken ground in China, and local enterprises have also mushroomed. At this stage, the medical content of medical beauty gradually shifted to commercialization, and consumers had more demands and choices.

With the advent of the Internet era, the medical beauty industry has ushered in unprecedented development. Since 2014, "Internet + medical beauty" has become a new development trend. The appearance of medical beauty o2o platform has pushed the popularity of medical beauty to a new climax. The medical beauty industry is constantly infiltrating in the direction of low age and micro plastic surgery.

## 3. Functional classification of medical beauty industry

Table 1: Basic situation of functional classification and corresponding technical products of medical and beauty industry.

Purpose and demand	Scope of action	Specific technology
Facial rejuvenation	Skin improvement	Fruit acid skin rejuvenation, botulinum toxin injection, soft tissue filler injection, optoelectronic technology - laser, optoelectronic technology - radio frequency, optoelectronic technology - strong pulse light
Enhance the beauty of the facial features	Improve the beauty of facial features and eyes	Double eyelid surgery, correction of inner canthus or outer canthus, pouch removal, eye liposuction, correction of ptosis, eyebrow lifting, eyebrow cutting, periorbital comprehensive plastic surgery, and eye plastic repair
	Nasal improvement	Bulging (silicone) rhinoplasty, autologous / allogeneic cartilage rhinoplasty, thread embedding rhinoplasty, dermal rhinoplasty, injection rhinoplasty, nose head reduction, alar rhinoplasty, nasal cover plastic surgery, nostril reduction, nasal column lengthening, nose correction, hump nose correction, Eagle nose correction, crooked nose correction, nasal base plastic surgery, nasal column plastic surgery, alar rhinoplasty, failed rhinoplasty and re repair
	Face improvement	Filling operation of temporal depression, zygomatic augmentation or symmetry operation, mandibular angle reduction or extension operation, chin augmentation or extension operation
	Lip improvement	Hyaluronic acid / fat lip augmentation, thick lip thinning, lip bead reconstruction, lip peak plasty, lip arch plasty, lip angle elevation, m lip plasty, lip comprehensive plastic surgery, cleft palate repair
	Ear improvement	Auriculoplasty, ear reconstruction, and auricular plasty
Change and correct posture	Breast augmentation	Injection breast augmentation, autologous fat breast augmentation and silicone breast augmentation
	remove excess fat from under the skin by suction	Micro plastic liposuction, hydrodynamic liposuction, laser liposuction and frozen liposuction
	Hip plastic surgery	Hip augmentation operation and hip lifting operation
	Limb plastic surgery	Upper limb lifting, lower leg implantation, lower limb lifting, thigh lifting, upper body lifting

According to the purpose and demand of consumers in choosing medical and beauty projects, the medical and beauty industry can be functionally divided. In general, medical beauty projects mainly meet the three major needs of consumers, namely, to maintain the younger face, improve the beauty of the facial features and change the corrected posture. Each type of project corresponds to a variety of technologies, and the product R & D is updated rapidly. Table 1 lists the corresponding medical and aesthetic technical means under different types of purpose needs.

Among the above three types of needs, the pursuit of younger faces is most popular among consumers, and its corresponding technologies and products occupy the mainstream of the current Chinese medical and beauty market. It is not only the old people who want to "return to youth", but also the young people who want to "stay in age". This paper focuses on the important classification of the pursuit of facial rejuvenation and makes a thorough and systematic analysis.

### **3.1. Fruit acid rejuvenation**

Fruit acid rejuvenation, that is, through the use of high concentration of fruit acid to help consumers achieve a series of goals such as skin smoothness, skin color improvement, and scar reduction.<sup>[1]</sup> The so-called fruit acid, as the name implies, is a variety of organic acids extracted from fruits and is an effective skin care ingredient in yogurt or fruits. Among them, glycolic acid extracted from sugarcane is widely used. The known fruit acids can be divided into three categories:  $\alpha$  - Hydroxy acid  $\beta$  - Hydroxy acid and  $\alpha\&\beta$  - Hydroxy acid.

The main mechanism of this therapy is to accelerate the exfoliation of keratinocytes, activate the metabolism of keratinocytes, and renew or rebuild the epidermis; At the same time, it can promote the elimination of melanin particles, improve skin color and reduce pigmentation; Release the keratinocytes accumulated at the opening of sebaceous glands, correct the abnormal keratinization of hair follicle epithelium, make the secretion and excretion of sebaceous glands smooth, and inhibit the formation of acne.<sup>[2]</sup> Therefore, it has a very good effect on removing pimples, lightening acne spots and acne marks. In terms of dermal effect, it promotes the generation of collagen, the renewal of elastic fibers and the formation of base materials. Fruit acid itself has certain antioxidant capacity, so it is also effective in preventing skin aging and reducing fine wrinkles.

### **3.2. Injection therapy**

Injection therapy injection therapy has become an important treatment means of modern medicine. In the medical and beauty industry, injection therapy mainly injects exogenous or endogenous substances into the body to eliminate wrinkles and enrich the face and body. Botulinum toxin and soft tissue filler are common exogenous injection substances.

Botulinum toxin (BTX-A), also known as botulinum toxin, is a neurotoxin. Botulinum toxin injection for wrinkle removal can block the release of acetylcholine, thus blocking the conduction of nerve to muscle. The first step of botulinum toxin injection for wrinkle removal is that the toxin binds to the Neurogen and then enters the cytoplasm of the nerve cell. Finally, the toxin inhibits acetylcholine from acting on the neuromuscular connection to paralyze the muscle. This process is called neuromuscular function denervation.<sup>[3]</sup> Therefore, botulinum toxin injection is often used to remove wrinkles on the face. It can remove common crow's feet, forehead lines, brow lines, nasolabial groove lines and neck wrinkles, especially early and less obvious active wrinkles. The effective time of botulinum toxin injection is about 4 months to half a year. To be effective for a long time, it needs to be injected 3 to 4 times a year. Currently, the commonly used BTX-A products for injection mainly include Botox in the United States, Dysport in the United Kingdom, Xeomin in Germany and Hengli in China.<sup>[4]</sup>

Soft tissue filler is another common injection substance in cosmetic medicine practice. It can immediately and effectively help consumers achieve the goals of improving wrinkles and facial shaping. "Perfect" fillers need to have long-lasting curative effect, semi-permanent, high tolerance, delicate and natural effect, no adverse reaction after filling and no adverse surgical outcome to make them reversible. At present, the fillers that consumers can contact are divided into two categories: biodegradable and non biodegradable. The choice of the product depends on the preference of the injection method, the expected effect and the injection site. At present, the most widely known filler is hyaluronic acid. Hyaluronic acid has the advantages of natural appearance, convenient use, reversibility and low incidence of adverse reactions. Hyaluronic acid is a high molecular polymer, which is often injected into the skin or under the dermis and widely used in various facial fillings. The effect can last for four months to one year, and eventually the body will take blood. At present, the two popular hyaluronic acids are hyaluronic acid and

Qiao Yadeng. Hyaluronic acid is the first non-animal anti-wrinkle product approved by FDA in 2003. Qiao Yadeng was approved for use as a buccal filler in 2013. Qiao Yadeng has stronger resistance and stickiness than hyaluronic acid, so the capacity carrying capacity is also stronger. Consumers can choose more suitable products for injection according to their needs and injection sites.

### 3.3. Photoelectric technology

Photoelectric technology, also known as energy source medical cosmetology, usually refers to the application of strong pulse light, laser, radio frequency and other photoelectric technologies to the skin, so as to significantly improve the texture of the skin, tighten and tender the skin, reduce wrinkles, eliminate skin surface defects, and even play the role of weight loss and body shaping.<sup>[5]</sup>

Intense pulsed light (IPL) is known as "photon rejuvenation". Of course, photo rejuvenation is only one of the effects of intense pulsed light. The intense pulse light is a multi-wavelength light, which is the light filtered by the filter, which is greater than or less than 500 nm and less than or more than 1200 nm. It is a kind of light with a spectrum range from more than 500 nm to near-infrared light. Because different wavelengths act on the skin in different depths, when using intense pulsed light, the operator will select different filters for treatment according to the individual conditions of the patient. Compared with laser, intense pulsed light has higher accuracy and is usually used to solve individual skin problems. Photons have more gentle characteristics and are more suitable for daily skin care. Therefore, it is named "photon skin rejuvenation", which highlights its skin rejuvenation characteristics and has more "affinity". At present, the very popular "headlamp" is also a kind of pulse light.

There are many functions of laser, including laser nevus removal, laser speckle removal, dot matrix laser and so on. The essence of the laser is to burn and destroy the target cells. Laser can effectively remove freckles, chloasma, senile spots and nevus of Ota. The dot matrix laser can peel off the epidermis to make the epidermis proliferate, or stimulate the dermis to promote the dermal proliferation, which is mainly. It is used to solve various problems such as scars, facial aging, relaxation and stretch marks. The advantages of laser are simple operation, no scar, short recovery period and remarkable effect. However, the laser also has some disadvantages, such as erythema when used in large areas, high compliance requirements for patients, and unbearable pain caused by some lasers. Table 2 shows the basic characteristics, advantages and disadvantages of intense pulsed light and laser.

Table 2: Comparison of characteristics between intense pulsed light and laser.

	Intense pulsed light	Laser
Conventional Wavelength	500nm-1200nm	Single specific wavelength
Optical Characteristics	Multi wavelength, non-parallel	Single wavelength, parallel
Working Principle and Scope of Application	Photolysis, sheet output light, suitable for large area treatment	Photo pyrolysis, shock wave damage, small action area of point output light
Function Characteristics	Treat a variety of skin diseases	Limited treatment
Course of Treatment	Long	Short
Body Feeling	Slight pain, no anesthesia required	The pain is obvious and sometimes anesthesia is required
Recovery Duration	Local redness and swelling subsided after several hours	Local damage and scab formed after operation and recovered after one week
Adverse Reaction	Rare, occasionally pigmented	More common, pigmentation or scar

Hot Maggie, hot lati, radio wave skin pulling, dark blue radio frequency and so on belong to the radio frequency range. This kind of technology heats the dermis in a certain temperature range through electromagnetic wave, and acts on the collagen tissue to denature and regenerate the collagen tissue (electric energy is converted into heat energy, and heat energy acts on the collagen tissue to generate thermal denaturation), thus improving the skin condition. Collagen tissue shrinks and fuses, remodels, and thickens the dermis, so that the skin will be compact and elastic, thus rejuvenating. It can also promote the regeneration of collagen, stimulate fibroblasts and promote the formation of new collagen, so as to achieve the wrinkle removal effect, make skin wrinkles lighter and skin surface smooth.

## 4. Conclusions

The development of China's medical beauty industry is related to consumers' acceptance of medical beauty and their understanding of beauty. With the development of the times, the purpose of medical aesthetics has gradually changed from the initial "cosmetic repair" to "fashion aesthetics". With the development and innovation of domestic economy and technology, medical and beauty projects have

"flown into the homes of ordinary people", from luxury goods exclusive to the rich and stars to standardized products that ordinary people can own. Medical cosmetology in people's mind has completed the transformation from being difficult to speak, to being open to accept, and then to being willing to share. More and more people are inclined to use technical means to make themselves more beautiful and confident, so as to improve their quality of life. According to the information statistics of 35 million users and 1 million sample orders, and the field visits of 138 medical and beauty institutions, the new oxygen produced and released the white paper on the medical and beauty industry. The survey results on the attitude of Chinese consumers towards medical and beauty show that by the end of 2018, the proportion of people who completely do not understand medical and beauty is about 16%, and the proportion of people who hold a neutral attitude is 18%, More than 60% of the rest hold a positive attitude towards medical beauty, as shown in Figure 1.

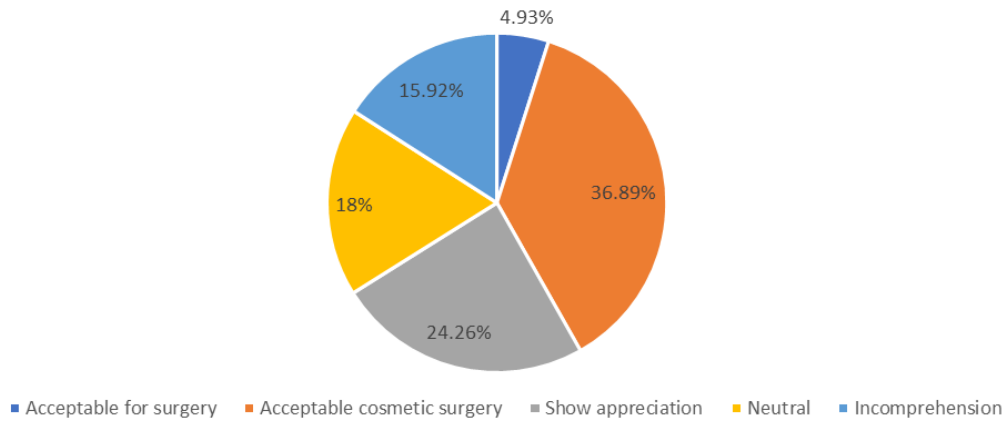
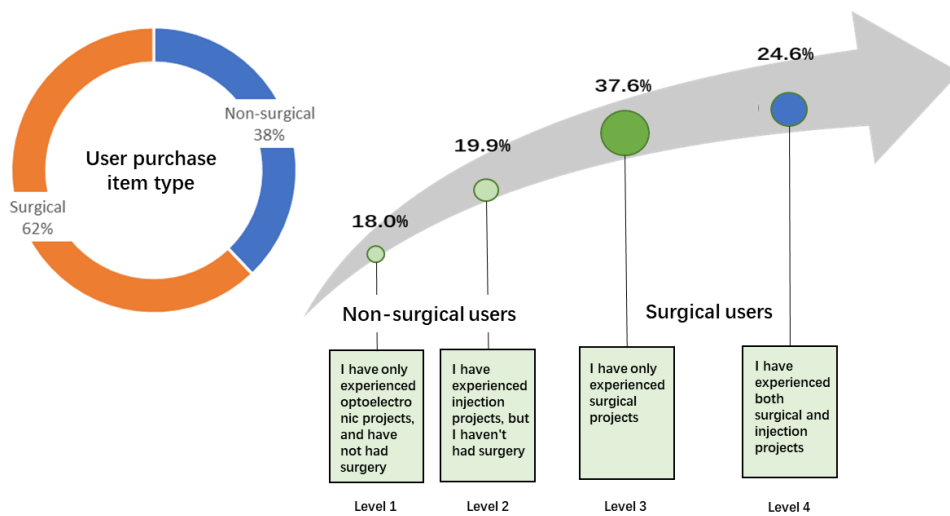


Figure 1: Chinese consumers' attitude towards medical cosmetology.

According to the results of the survey on the types and acceptances of Chinese medical beauty users' purchase projects in the white paper on China's medical beauty industry insight released by iResearch consulting in 2020, the acceptances of medical beauty users for medical beauty projects can be divided into four levels according to the types of medical beauty projects that their dogs have bought: the first level is that they have only experienced optoelectronic projects, and have not undergone surgery or injections, accounting for 18%; The second level refers to those who have experienced injection projects, may have done photoelectric projects, but have not done surgery, accounting for 19.9%; The third level refers to the projects that have experienced surgery, and may have done optoelectronic projects, but have not received injections, accounting for 37.6%; The fourth level refers to those who have experienced surgical projects, also injection projects, and may have experienced photoelectric projects, accounting for 24.6%. As shown in Fig. 2.



Sample description: the sample is the existing users of medical beauty, n = 700, obtained by iResearch consulting and Research Institute through online research in 2020  
 Note: combined with all your beauty and body care experience, which description do you think is in line with your actual situation? Single choice

Figure 2: Type and acceptance of purchase items of Chinese medical cosmetology users medical.

We believe that in the future, with the further progress of society and the improvement of people's living standards, people's pursuit of beauty will become higher and higher, and their desire to change their appearance or shape through cosmetic surgery or beauty technology will become stronger. However, medical cosmetology is a perfect combination of medicine, aesthetics and art. It should not arbitrarily define beauty and ugliness, nor should it bring danger and irreversible results to consumers. It is very important to establish a correct aesthetic view that suits oneself. Blindly pursuing "white" and "thin", slender legs, plump breasts, double eyelids and high nose bridge will one day be eaten by the beauty pursued. The value that practitioners in the medical beauty industry should follow is to help customers strive to find and adhere to their own beauty, rather than to cater to the beauty of the public. Everyone is a different individual, and should shine their own glory.

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