

New treatment concept for facial skin tightening: The Facial Makeover

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Summary

Facial Makeover is a new concept of a series of treatments with different non-invasive skin tightening devices. The Intense Pulsed Light (IPL) handpiece applies 580 nm, Infrared (IR) and Radiofrequency are also devoted. Combining the different devices all main signs of sun-damaged and aging skin can be improved by coagulating blood vessels, eliminating pigmented spots, improving skin texture. The results are a moderate to good lifting effect on cheeks and an overall improvement of the skin appearance.

The desire for "wellness" and an eternally youthful appearance is a sign of our times. But the years do not pass without leaving their traces. The signs of aging facial skin comprise various symptoms of progressive loss of elasticity, a loosening of the supporting connective tissue and gradually deepening wrinkles in the skin [1]. Genetic factors – which is known as chronological aging – and extrinsic factors such as ultraviolet rays, all contribute to the slackening of the skin [2].

Painful or pleasant?

There is an extensive range of products on offer to combat the signs of aging. Besides cosmetic surgery, a large number of minimally invasive procedures are available: injections of botulinum toxin or fillers and fractional laser techniques are



Fig. 1: Photographic documentation of the treatment with FotoFinder Systems (Photo: © FotoFinder Systems)

just some of the many options available. What all these methods have in common is that while the treatment is certainly effective, it still involves the use of a scalpel, needles or at least a painful laser beam.

The gentler and more pleasant treatments from the beautician are quite different, and people are happy to have them done. The fact that there is not such a pronounced before and after effect

pleasure.

Even the solarium, which will in the long term not only accelerate the aging of the skin but is even harmful to health, does however promote a feeling of wellness. Sometimes this may actually be the main attraction and is even more important for the user than the desire to get a tan.

Reducing the visible effects of skin aging

Therefore the question behind the present study is whether there is a treatment which is pleasant but achieves visible successes at the same time.

Encouraged by the results of various published studies [3,4,5], a treatment protocol for an own prospective study has been designed under the name "Facial Makeover". It uses a combination of different devices that serve to treat sagging skin. All the devices work with a similar mechanism: they apply heat to the dermis via radio-frequency energy (RF), infrared (IR) or intense pulsed light (IPL), in order to stimulate the renewal of collagen and initiate the smoothing of the skin. The heating of the dermis leads to the denaturing of the collagen so that it immediately contracts. Also there is a long-lasting transformation of the collagen [6].

The repeated application of these three techniques leads to an improvement by reducing the main symptoms of skin aging: the skin pores become finer, discoloured patches and wrinkles are reduced, and skin firmness is improved. The result is a taut smoothing and a slight lifting effect



Fig. 2: Laser platform OmniMax™ (Photo: © Sharplight™ Technologies Ltd.)

Details of the study concept

The participants in the unblinded Facial Makeover study were given eight treatments of about 50 minutes each over a period of three months. For each patient a total of one to three applications of IPL, eight of IR, and eight of RF were carried out. On request, the patients received a minimal-ablative fractional erbium treatment at the end of the series, which is similar to exfoliation (a chemical peel).

Ten Caucasian patients aged from 43 to 68 took part in the study. All showed the usual signs of skin aging: discoloured patches, some telangiectasias, wrinkles, and reduced skin elasticity. A photographic record of the participants in the study was made before the start of the treatment, after the eighth session, and two months after the end of the treatment using a videographic system (FotoFinder Systems, Germany, Fig. 1). The laser platform Omnimax™ (Sharplight™ Technologies Ltd., Fig. 2) was used for the treatments.

For the application of IPL the hand-held unit SR with the wavelength 580 nm was used. The dosage was adjusted to match the particular skin type of each of the participants in the study. 15 shots were applied to each side of the face.

The IR head emitted wavelengths from 850 to 1750 nm, and was 6.4 cm² in size. One treatment cycle lasted nine seconds, with 20 J/cm² being applied per cycle. 20 cycles were delivered to each side of the face (cheek, mandible and the area of transition to the neck).

The application of IR was followed by the treatment with RF. Here heat was applied in an even, circling motion to the cheek area and perioral area, as well as to the area where the mandibular region joins the upper neck, for ten minutes in each case. The surface temperature of the skin was measured every 60 seconds using an infrared thermometer. The idea was to maintain a temperature of 41 degrees Celsius for ten minutes. One had to avoid higher temperatures because of the possible danger of lipoatrophy.

The positive results of the treatment were assessed by using the said photographic documentation, and are summarised in the table above (Table 1). At the start of the study each participant was assigned to one of the following groups: patients with mild to moderate symptoms of skin aging, patients with significant symptoms of skin aging, and patients with severe symptoms of skin aging.

After the treatment the individual signs of skin aging, and the way they changed over time, were assessed again:

1. Skin surface / pore size
2. Pigmented spots / patchiness of the skin
3. Wrinkles
4. Firmness of the skin in the area of the cheeks/mandible.

Furthermore the condition of the skin as compared to the initial condition was divided into three categories: no change (0), slight improvement (+) and distinct improvement (++).

Results

All ten patients found the treatment to be pleasant and relaxing. All the participants in the study showed a slight to good lifting effect on the cheeks and a generally improved skin appearance with less discoloration, fewer telangiectasias and reduced pore size (Fig. 3-5).

In the following table one can see at a glance from the total number of points how each patient's skin appearance has improved by the Facial Makeover treatment.

Conclusions

The results of the Facial Makeover study give a positive answer to the initially posed question whether there is a treatment which is pleasant but achieves visible successes at the same time.

In general it was found that the least improvement occurred in the group who had been diagnosed with severe signs of skin aging at the start of the treatment. Conversely this means: slight to moderate signs of skin

Table 1: Summarised results of the Facial Makeover study

Patient	Pore size reduction	Pigmented spot reduction	Wrinkles reduction	Skin laxity reduction	Total points improvement
1	0	++	++	++	6
2	+	++	+	++	6
3	+	+	+	++	5
4	++	++	++	+	7
5	+	++	+	++	6
6	+	+	0	+	3
7	0	++	+	++	5
8	+	0	+	0	2
9	++	0	+	++	5
10	++	+	+	+	5

Legend: green = mild to moderate symptoms; orange = significant symptoms; red = severe symptoms

aging can be significantly improved by the Facial Makeover concept.

Therefore it is crucial to select the patients appropriately. Older patients with excessively sagging skin will as a rule derive less benefit than younger patients with mild to moderate symptoms of skin aging [7]. Furthermore, it is also important to make sure that the patient has realistic expectations, as one does in the case of cosmetic procedures. Before/after pictures are mandatory, as they are for all aesthetic procedures. They serve to document the improvements. Because the changes are of a gradual nature, and what is more the patients see themselves every day in the mirror, it is essential to hold a final discussion including an assessment of how successful the treatment has been.

Summing up, the Facial Makeover concept can be characterized as a safe combination of several minimally invasive treatments. The therapy does not involve any "down time", and it is possible to predict results to a great extent. The treatment can be performed by an as-

degree of acceptance by the patients thanks to its "wellness" effect.

Bibliography

1. Alexiades-Armenakas M: Assessment of the mobile delivery of infrared light (1,100 - 1,800 nm) for the treatment of facial and neck skin laxity. *J Drugs Dermatol* 2009;8:221-226.
2. Woolery-Lloyd H, Kammer J: Skin Tightening. In: Bogdan Allemann I, Goldberg DJ (eds): *Basics in Dermatological Laser Applications*. Curr Probl Dermatol. Basel, Karger, 2011, vol 42, pp 147-152.
3. Gold MH: Tissue Tightening: a hot topic utilizing deep dermal heating. *J Drugs Dermatol* 2007;6:1238-1242.
4. Alster TS, Tanzi E: Improvement of neck and cheek laxity with nonablative radiofrequency device: a lifting experience. *Dermatol Surg* 2004;30:503-507.
5. Fodor L, Carmi N, Fodor A, Ramon Y, Ullmann Y: Intense pulsed light for skin rejuvenation, hair removal, and vascular lesions: a patient satisfaction study and review of the literature. *Ann Plast Surg* 2009;62:345-349.
6. Zelickson BD, Kist D, Bernstein E, et al.: Histological and ultrastructural evaluation of the effects of a radiofrequency based nonablative dermal remodeling device. *Arch Dermatol* 2004; 140:204-209.
7. Dierickx CC: The role of deep heating for noninvasive skin rejuvenation. *Lasers Surg Med* 2006;38:799-807.



Fig. 3: Patient with mild to moderate symptoms of skin aging - before/ after (Photo: Dr. Rümmelein)



Fig. 4: Patient with significant symptoms of skin aging - before/ after (Photo: Dr. Rümmelein)



Fig. 5: Patient with severe symptoms of skin aging - before/ after (Photo: Dr. Rümmelein)