

## Rejuvenation Therapy- Current Trends

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As we age, the scaffolding dermal facial skin, as well as the fat component, weakens. This is attributable to the fact that the connective tissue of the skin becomes thinner and elastic fibers undergo a collapse.<sup>1</sup> This dermatochalasis of the tissues, including the superficial muscular aponeurotic system (SMAS) and the muscular tissue, is the cause of the distinctive aging signs of the face.

The restoration of a youthful appearance is called rejuvenation. Facial **rejuvenation** is a cosmetic treatment or a series of treatments, which aims to restore a youthful appearance to the human face. It can be achieved through either surgical<sup>2</sup> and/or non-surgical options. Procedures can vary in invasiveness and depth of treatment.

Rejuvenation is distinct from life extension. Life extension strategies often study the causes of aging and try to oppose those causes in order to slow aging. Rejuvenation is the *reversal* of aging and thus requires a different strategy, namely repair of the damage that is associated with aging or replacement of damaged tissue with new tissue.

There have been tremendous developments in various procedures used for rejuvenation and most commonly used are Botulinum Toxin, Soft tissue fillers, Chemical peels, Microdermabrasion, Microneedling, Laser therapy, HIFU, Thread face Lifting and Radiofrequency

**Botulinum Toxin:** Botulinum Toxin is a purified neurotoxin produced by the bacterium *Clostridium botulinum*, used as a safe and effective way to reduce facial wrinkles without surgery.<sup>3</sup> It is targeted directly at specific facial muscles that are causing dynamic wrinkles to form. It blocks transmission of electrical impulses to a targeted muscle. In the face, the resultant muscle weakening relaxes wrinkles and leads to a smoothing and rejuvenation of the skin.<sup>4</sup> The best candidates for treatment are people who are physically healthy, with no history of neuromuscular diseases. Contraindications include existing weakness in the targeted muscle, persistent

drooping eyelids, deep facial scars and marked facial asymmetry

An insulin syringe is used for injecting the toxin. It takes effect in 7-14 days. Gradually, over three to four months the effects of the treatment fades, and the muscle action will return and wrinkles will reappear. When expression lines start to reappear, a simple retreatment is all that is necessary to maximize the desired results.

**Soft Tissue Fillers:** A new and innovative way to compensate for the breakdown and restore youth and fullness is to inject filler substances into the skin. These fillers, which include hyaluronic acid,<sup>5</sup> fat, collagen, and other materials, are used to plump up wrinkled, creased and sunken areas of the face, and to add fullness to the cheeks and lip areas. But filler substances are not for everyone and should be avoided if there is a history of keloid formation. Bruising, swelling or redness at the injection sites sometimes follows injections. Temporary puffiness and tenderness around the treated areas can also be expected. Fillers are not permanent and over time degrade and be absorbed by the body. Re-injections are usually performed after 1 year. Complications are infection, skin necrosis, keloid Formation & blindness.<sup>6</sup>

**Chemical Peels:** Chemical peels improve the appearance of wrinkled skin by using a chemical solution to remove the outer layer of old skin. The new skin that replaces it is usually smoother and less wrinkled in appearance. The process creates a controlled wound, allowing new skin to grow in place of wrinkled skin. The materials used are Glycolic Acid,<sup>7</sup> Trichloroacetic Acid, Salicylic Acid, Lactic Acid and Carbolic Acid

**Microdermabrasion:** An abrasive instrument<sup>8</sup> is used to gently sand the skin, removing the thicker, uneven outer layer. This is used to treat light scarring, discoloration, sun damage, stretch marks, pox marks, and scars from accidents or disease, it can also improve age spots and black heads. It

makes subtle changes, causing no skin color change or scarring. After treatment, skin is temporarily pink but fully recovers within 24 hours.

Approximately 8 to 10 treatments spaced 4 weeks apart are usually necessary to reap full microdermabrasion benefits. Convenient and virtually painless, the procedure takes only 30 to 60 minutes and is commonly referred to as the "lunch hour facial."

**Microneedling:** Also known as collagen induction therapy, Microneedling<sup>9</sup> is a procedure that uses small needles to prick the skin. The purpose is to generate new collagen and skin tissue for smoother, firmer, more toned skin. Microneedling may treat various scars, wrinkles, and large pores. It is minimally invasive, requiring no downtime. It's considered safe for most people who are in overall good health. Total preparation and procedure time is about 20 minutes. At least 6-8 sessions are required for the best results. It's considered effective in treating minor scarring related to acne, wounds, and aging.

**Lasers:** CO2 Lasers<sup>10</sup> are generally ablative lasers used to treat wrinkles and other deeper skin flaws. Erbium Lasers can be ablative or non-ablative. They promote collagen remodeling, making them popular options for treating fine lines, wrinkles, skin laxity, and age spots.

**High Intensity Focused Ultrasound (HIFU):** HIFU is a skin lifting technique which uses Ultrasound technology, by delivering precisely focused beams of ultrasound energy at three different depths in the skin's layers. The body's natural wound healing response results in the formation of new collagen which leads to a long term tightening of the skin.<sup>11</sup>

The high frequency of the ultrasound wave results in heating under the skin, effectively destroying the fat cells and tightening the skin in the area treated. The treated cells are flushed away via lymphatic system and process continues for up to 3 months after treatment. There is no downtime. Skin toning and tightening can be performed on the face (except for the nose and eyes), neck, décolletage, arms, buttocks and abdominal area. The results are long lasting, and the treatment is precise without affecting unintended areas or layers of tissue during treatment.

The HIFU delivery hand is placed on the skin and held there for approximately 2 minutes, this is repeated 3 times per treatment area. Patient feels the warmth of the hand piece and slight vibration and tingling sensation. Three treatments are recommended of skin tightening to begin with, the number of follow up treatments depends on the client and their laxity rating. Results may be seen immediately after the first treatment, maintenance treatment is required after 4 and 8 months.

**Thread Face Lifting:** Thread lifts involve the use of threads or sutures made from the same materials used in surgery to close wounds.<sup>12</sup> When placed under the skin, they can be used to tighten and volumize areas of the skin that are loose or sagging. Much like suspension cables, they are designed to hold up the skin in place, and provide a supportive structure that defies the effects of gravity and aging. Results last from 18 months to 5 years.

**Radiofrequency Facial Rejuvenation:** Monopolar radiofrequency (RF)<sup>13</sup> is emerging as a gentler, nonablative skin-tightening device that delivers uniform heat to the dermis at a controlled depth. Six sessions at 2 weeks intervals are done. Over time, as a thermally mediated healing response, fibroblasts are stimulated to enhance new collagen deposition and remodeling, resulting in collagen tightening, and an overall increase in collagen content.

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