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- Apyx Medical wants to present you with current scientific discourse. Specific usage outside of the cleared indications may not be safe or effective.

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- Risks associated with the use of the Renuvion Dermal System include but are not limited to hypertrophic scarring, milia/acne, telangiectasia (spider veins), skin discoloration/hypopigmentation, dormant infection reactivation, infection, bruising or bleeding. Warning: Application of more than one treatment pass in the perioral area, on the forehead, and along the jawline has been associated with hypertrophic scarring.

As with any procedure, individual results may vary. As with all energy devices there are inherent risks associated with its use, refer to the IFU for further information.

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Tesla Facelifting Using Energy Devices during Rhytidectomy

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Abstract

Tesla facelifting is the process of utilizing energy devices as surgical tools during rhytidectomy and neck lifting. Devices used for Tesla face and neck lifting include fiber lasers, radio frequency devices, high-frequency ultrasound, and plasma energy devices. Advantage of Tesla face and neck lifting include better visualization for surgical intervention due to reduced bleeding, better access to hard to access facial and neck locations, and long-term skin tightening from the subdermal energy treatment.

Keywords

- Tesla facelift
- energy-based devices
- Renuvion
- FaceTite
- Vaser

Aging baby boomers are a formidable demographic force in the United States with a person turning 60 years old every 10 seconds. Age demographic data in 2017 noted that between 30 and 40% of the total US population are over 50 years of age.¹ This represents over 115 million potential patients with skin and laxity of the face and neck. Excisional facial surgery such as a rhytidectomy has long been considered the gold standard of facial rejuvenation but recent years have seen the introduction of new technologies and energy-based devices (EBDs) for subdermal skin tightening whether used as a standalone treatment paradigm or used concurrently with rhytidectomy. These technologies and applications will be presented and critiqued in this article and will concentrate on current technologies being used concurrently with rhytidectomy. A common misconception is that using energy devices during rhytidectomy is simple aimed at superficial skin tightening. While this is somewhat true energy devices excel at sculpting and contouring heavy faces in patients who have developed jowls and submental fat usually in the deep subplatysmal region.

Introduction to Tesla Rhytidectomy

For the purposes of this discussion Tesla rhytidectomy (TR) is the use of EBDs subdermally in a manner that complements the rhytidectomy whether it is being used for hemostasis for contouring including soft tissue contraction and subdermal skin tightening. TR also refers to EBD use in standalone

procedures (device only) or when used concurrently with surgical techniques including nonexcisional and full excisional rhytidectomy (hybrid procedures). Thermal fibroliposculpting (TFLS) during the process of TR is referred to as "Sculpturing" and is the result of the thermal effects of these devices on adipose and collagen in the subdermal or interstitial space. Recent advances in these techniques also permit their use in the deep plane of the face and neck for subplatysmal or sub-superficial muscular aponeurotic system (SMAS) TFLS or "Sculpturing" capabilities when combined with surgery specifically established rhytidectomy techniques either full or limited are synergistic in affecting long-term results. The term thermoplastic describes the mode of action for TR and was initially used in plastic surgery and aesthetic dermatology to describe the beneficial effects of lasers and light being used in skin rejuvenation treatments on dermal collagen with the targeting of chromophores leading to a morphological change in collagen and biochemical effects that resulted in increased dermal collagen, elastin, and hyaluronic acid in the skin. Although penetration of laser or broadband light to the deep dermal layers is limited because of scattering of the light by epidermal melanin, recently the introduction of subdermal techniques to insert laser and energy devices under the dermis via fibers, cannulas, or microneedles has resulted in a more intense modification of the extensive network of fibrous tissue intermingled with adipocytes that is named the fibrous septal network (FSN; → Fig. 1). This process of thermal-mediated fibrous-adipose tissue remodeling is the predominant process

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- *The Renuvion® APR Handpiece is intended for the delivery of radiofrequency energy and/or helium plasma where coagulation/contraction of soft tissue is needed. Soft tissue includes subcutaneous tissue.*
- *The Renuvion APR Handpiece is intended for the coagulation of subcutaneous soft tissues following liposuction for aesthetic body contouring.*
- *The Renuvion APR Handpiece is indicated for use in subcutaneous dermatological and aesthetic procedures to improve the appearance of lax (loose) skin in the neck and submental region.*
- *The Renuvion APR Handpiece is intended for the delivery of radiofrequency energy and/or helium plasma for cutting, coagulation and ablation of soft tissue during open surgical procedures.*
- *The Renuvion APR Handpiece is intended to be used with compatible electrosurgical generators owned by Apyx Medical.*

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