

# HIGH-INTENSITY FOCUSED RADIOFREQUENCY

## Lutronic reveal how their HiFR device offers a new approach to facial and neck laxity, photoaged skin, and more



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**Y**oung skin can be maintained with appropriate epidermal and dermal care, but sadly, when the force of gravity causes the downward migration of subdermal fat under a lax skin, topicals are just not enough. Lutronic's INFINI™ system provides a novel answer to these and other ageing problems with High-intensity Focused Radiofrequency (HiFR), which delivers controlled fractionated coagulation selectively, safely, and effectively deep into the dermis. Tissue tightening for skin laxity is achieved through the natural wound healing and remodelling processes, and the clock is turned back.

### Background

According to the old maxim, 'Beauty is only skin deep'. In the younger face, that beauty can be maintained with topical skin care. In the older face, the ageing process affects not only the skin but extends to the subcutaneous fat which topicals cannot address. Under the relentless 10N/kg force of gravity, the subcutaneous fat of the face and neck gradually slips downwards under a skin whose firming and lifting power has been degraded by photo- and intrinsic ageing. In addition to deepening of lines and wrinkles, jowling occurs at the jawline and the skin of the neck sags with clearly-visible lines.

### Conventional treatment

Surgical lifting is possible, but even a full rhytidectomy may not be able to

fully address the jowling and neck laxity problems in the severely-aged face. Full-face ablative laser resurfacing, although still the gold standard despite long down-times, cannot be used on the neck because of the lack of pilosebaceous units. The use of fractional nonablative and ablative lasers has been reported, and they can be used on the neck but results in tightening lax skin have been mixed. Focused ultrasound has attracted attention, but to date is not indicated on the neck, can be painful, and takes over an hour to cover the face.

### Conventional external radiofrequency

The natural resistivity of the skin to an electric current oscillated at a very high frequency provides an electrothermal reaction in radiofrequency (RF) treatment for ageing skin, to rejuvenate and tighten. Deep-reaching treatment, however, is a problem. 'Hot-spots' form at the electrodes, so aggressive cooling is required to protect the epidermis, and pain is also an issue. Fractionating the RF energy has been developed, but does not solve the depth problem.

### High intensity focused RF

Insulated bipolar microneedle electrodes were developed to deliver the RF energy into the dermis, solving the depth problem. The Lutronic INFINI™ system allows delivery of high intensity focused RF energy deep into the dermis, focused at the needle tips with no epidermal thermal damage, hence the term high-intensity focused RF (HiFR). The adjustable needle depth

means that the deep reticular dermis can be specifically targeted in the first pass to ensure good collagenesis and remodelling in the deeper dermis. Through setting the needles at decreasing depths for subsequent passes, graded electrothermal damage can be delivered, resulting in 3-D remodelling, volumization, and tightening of the skin.

Over the past 4 years, HiFR with INFINI has been successfully reported in many hundreds of patients for the treatment of all aspects of mild to severe photoageing, for acne scar revision, and for effective tightening of various degrees of laxity in the face and neck in all skin types and in a large range of ages in both male and female patients, even with tanned skin. In the case of skin tightening, follow-up visits have shown that the results continue to improve up to several months after the final treatment session because of the remodelling process, and patient satisfaction is very high.

### Clinical experience

**Matteo Tretti Clementoni, MD**, is a consultant plastic surgeon at the Skin House, an aesthetic, cosmetic and dermatological practice in Milan, Italy. Dr Clementoni has developed a strong protocol over a large number of patients, giving consistent and excellent results in the ageing lower-third of the face and neck. Dr Clementoni usually delivers 2-3 passes per session, over 3 to 5 sessions with an inter-treatment interval of 4 to 6 weeks

depending on when the patient can attend. Following the application of topical anaesthesia, INFINI treatment is given.

Severe photoageing with overall laxity at baseline can be seen in *Figure 1 (A,B)* in a 57-year-old male. *Figure 1 (C,D)* demonstrates a very good result 12 weeks post-treatment, especially regarding the laxity. Of INFINI, Dr Clementoni said; 'INFINI is very easy to use and after the first couple of patients it is possible to perform full face and neck treatment in less than 15 minutes,' said Dr Clementoni. 'Finally we have a device that really allows us to obtain good results on the lower one-third of the face and the neck,' he stated.

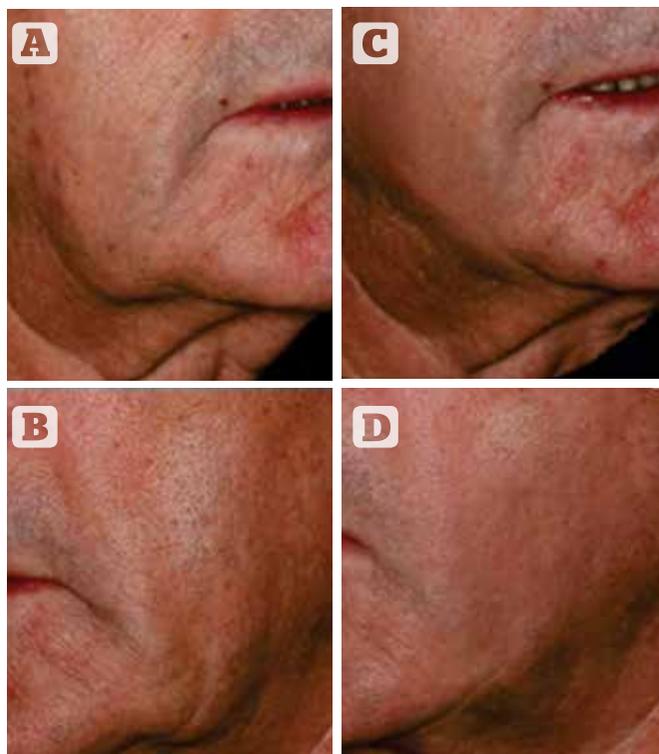
**Steven Weiner, MD,** is a plastic surgeon who has put aside his scalpel to found a comprehensive dermatological practice at The Aesthetic Clinique, Santa Rosa, CA, USA where he specialises in non- and minimally-invasive aesthetic cosmetic techniques. Dr Weiner was one of the first clinicians in the USA to adopt the INFINI into clinical practice, and has to date treated 350 patients with over 1000 treatment sessions for a variety of conditions, especially skin laxity in the jowls and neck. 'INFINI, with its high-intensity radiofrequency approach delivered intradermally with insulated microneedles, appears to have the right combination of the transmission of RF energy at variable needle depths taken together with the flexible balance between power levels and exposure times,' said Dr Weiner. 'I believe that this combination of attributes makes INFINI the ideal "RF Skin Tightener" at the present time,' he added.

Dr Weiner has developed a

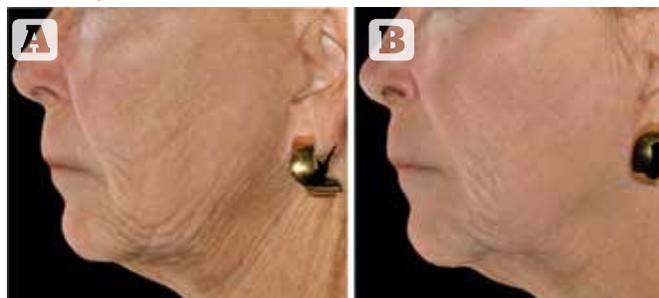
flexible, multi-pass protocol over 1 to 3 sessions based on the anatomical units of interest, which is tailored to the needs of individual patients depending on the degree of photodamage and laxity, and patient age. Following topical anaesthesia, INFINI treatment is given at the decided protocol. *Figure 2 (A)* shows a 50-year-old female at baseline with submental laxity, mild jowling and the formation of horizontal lines on her neck. *Figure 2 (B)* shows the very acceptable result 8 weeks after the single session with elimination of the mild lines and wrinkles, laxity at the jawline and the neck lines.

### Conclusions

It is clear from the experience of both Drs Clementoni and Weiner that each patient must be treated as an individual with a tailored approach to passes, parameters, and sessions. It is also clear that INFINI addresses laxity below the jawline and chin quickly and very effectively with minimal pain and downtime. Because of the remodelling process, the good results seen by patients a few weeks after their final session simply continue to improve, making INFINI the system of choice for laxity and lines in the neck and jowls, plus very efficient tightening and rejuvenation of the entire face. With INFINI, beauty becomes much more than skin deep, and the skin ageing clock is effectively turned back with lasting and natural-looking results.



**Figure 1** 57 year old male at baseline (A,B), and 12 weeks after 3 treatment sessions (C,D)



**Figure 2** 50 year-old female at baseline (A). A good result is seen in (B), 8 weeks post-Treatment