

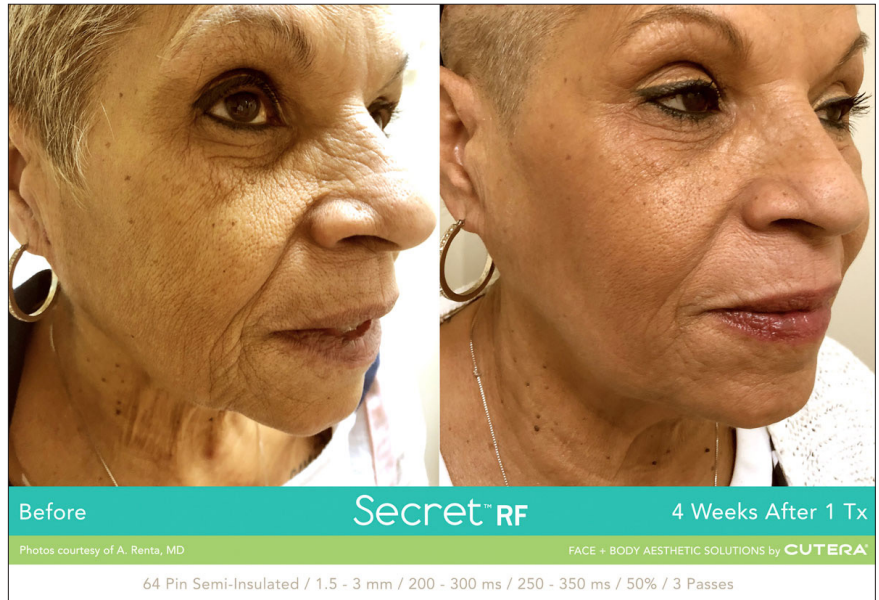
Photoageing treatment: RF microneedling

Microneedling is a process by which very small, sharp needles are inserted into the skin layers at various predetermined depths to cause micro-injury to the dermis. The epidermal layer is minimally disrupted and healing is achieved without inducing an inflammatory scarring process. Radiofrequency (RF) devices emit electrical energy that produce heat in the tissues in which it comes in contact. The heat induces cellular damage, which stimulates the healing cascade and collagen production.

Both microneedling and RF have been used independently in dermatology for treatment of photoageing and skin rejuvenation of the face and body. Indications include rhytides, acne scarring, and dyschromia, among others.

Combining bipolar RF energy with adjustable depth and RF intensity, as well as two needle types and tip sizes, the Secret RF from Cutera, Inc., provides comfortable, customisable microneedling skin treatments for fine lines, wrinkles, photodamage, acne scarring and striae.

The choice of needle arrays includes semi-insulated (focusing energy to deeper treatment zones) or non-insulated (for simultaneous delivery of energy to both deep and superficial zones). When using the semi-insulated needle tip, the RF energy is delivered to the desired tissue layer of the skin only when the needles have reached their target depth. This allows for 'cold' passage of the needles through non-targeted layers, and very precise application of the thermal energy of the RF. There is also the option of using the non-insulated needle tip, which allows heat to be evenly distributed to all layers of the skin that have been penetrated, allowing for correction of both epidermal and dermal conditions. In addition to modulating RF energy, you can adjust needle penetration between 0.5mm and 3.5mm. Depending on the treatment indication (scars, fine lines, etc.), depth can be adjusted accordingly to allow for multiple



passes, starting with the deepest zone and adjusting to treat shallower zones with each additional pass.

The smooth motor facilitates needle insertion, minimising damage to the epidermis. The mechanism of action is twofold. Outcomes will stem partially from the collagen stimulation effect of needle insertion, which is relatively atraumatic, plus collagen denaturation and stimulation of neocollagenesis caused by emitted bipolar RF energy.

Secret RF is safe for treating darker skin types with the semi-insulated needles treating darker skin very well. It also has a unique advantage over lasers when working around the eye, where photodamage from lasers to ocular structures is a risk. Because the RF energy can be targeted precisely to the level where treatment is needed, collateral damage to the dermo-epidermal junction can be avoided, allowing for higher energies to be directed to the predetermined depth.

The addition of the RF energy can cause more discomfort than with traditional microneedling, but standard pain management

protocols can be used to manage the pain successfully. Energy and duration of treatment can also be adapted for each patient to minimise discomfort. Bruising may occur if the microneedles puncture a superficial vessel, however, in our experience the coagulative effect of the RF energy seems to help minimise both bleeding and bruising. We have also seen fast closure of the epidermal wounds, which helps reduce the risk of infections. One important observation is that downtime for our patients for typical treatments is between 24 and 48 hours.

AUTHOR



Nestor Demosthenous,

Cosmetic Doctor, Dr Nestor's Medical Cosmetic Centre, Edinburgh; and Phi Clinic, London; Member of the British College of Aesthetic Medicine and Member of the Association of Scottish Aesthetic Practitioners.

nestor@drnestor.co.uk

@Dr_Nestor_D

Declaration of competing interests: The author is a KOL for Cutera Technologies, is regularly asked to speak at events and has received fees for this.

“One important observation is that downtime for our patients for typical treatments is between 24 and 48 hours”