

## **Radiofrequency and the use in health and beauty**

The use of electric currents in medicine has been documented almost since electricity itself was discovered. Radiofrequency (RF) has a long history in surgical and non surgical procedures. Low frequency alternating currents are used in physiotherapy for their ability to cause contractions in muscles. RF utilizes a wave of electrons to cause frictional heating of tissues to targeted areas.

RF energy is the newest addition to the treatment options available for cellulite and fat reduction. With this new technologies and combined with other elements it is possible to deliver RF energy to the deep dermis and sub-dermal layers of the skin, whilst protecting the epidermis. Heating in this area, without damaging the outer layers of skin, causes microscopic changes to the tissues and collagen contraction, with subsequent collagen remodeling with just a few treatments. .

Considering Body Contouring treatment, if so the following information can give you a basic understanding of the procedure and answer some of the questions you might have. Please ask our practitioner about anything you don't understand.

### **What is radiofrequency?**

Technically speaking, radiofrequency is the number of oscillations (or waves) per second of the electric and magnetic fields within the radio waves portion of the electromagnetic spectrum.

It is lowest of the electromagnetic radiation frequencies within the spectrum. These include such things as radio waves, microwaves, infrared, optical (visible light), ultraviolet to x-rays.

By feeding an alternating current through an electrode, electromagnetic waves can be generated, these are called radio waves. Radiofrequencies, or radio waves, have a have varied wavelength from millimeters to kilometers.

Most people understand that contact with an electric current can cause very undesirable effects such as electrocution and uncontrolled neuromuscular (nerve and muscle) stimulation. However, if the frequency of the alternating current is raised above the response time of neuromuscular structures, we find the radiofrequency range which can safely be used for medical and non surgical applications.

By applying RF energy to the desired body area, the energy flow will cause heat at the site, which can be used to change fat and tissue composition.

When comparing non-ablative (procedures that do not involve the destruction of the outer layer of the skin) techniques, RF energy differs from laser energy in that light energy tends to scatter or absorb into the upper layers of the skin, making it difficult to deliver sufficient heat into the deeper layers without damaging the skin's surface. Lasers therefore affect collagen in the upper dermis, while RF energy is able to penetrate deeper into the skin and affect the deeper dermis and subcutaneous layers, causing tightening and improvements to the underlying tissue structure, but with little change in skin texture.

## **Radiofrequency delivery**

**Bipolar** - Bipolar refers to a device having two poles or electrodes.

With bipolar delivery, the current from the generating machine flows only through the tissue which is between the two electrodes on the hand piece; these electrodes start and complete the electrical circuit. Hence, with bipolar delivery, no current flows through the rest of the body.

## **Combining radiofrequency with other modalities**

Increasingly innovation is producing devices that utilise RF energy in combination with other modalities, which are themselves enhanced by the addition of RF, producing machines able to treat more successfully a wider variety of aesthetic requirements from skin tightening to cellulite reduction and skin rejuvenation.

The Med shape combines Infrared and Bi-polar RF energy technology plus tissue mobilisation, massage and suction to effectively contour the body and reduce the appearance of cellulite and fat.

With deep, controlled heating of the fatty layers under the skin, the effects of tissue tightening and increased blood circulation mean that fatty deposits are drained through the lymphatic system, reducing the appearance of cellulite.

## **What should you do before treatment?**

You should try to avoid doing anything that will irritate your skin immediately before treatment. This includes sunbathing (natural or artificial). We will not treat someone who has sun burn, as they would be more likely to suffer pain from the addition of heat to the already damaged skin; an established tan would be fine.

Some women find that their skin is more sensitive right before and during their menstrual cycle so if you are a woman, you might want to take this effect on pain threshold into consideration when scheduling your treatment appointment(s).

## **What happens during a treatment?**

At Studio Health we have an initial consultation to discuss the treatment and ask you a variety of questions to make sure that you are suitable for the treatment.

These include a medical history, a consent form which means that you have understood the potential benefits and risks associated with the procedure. Your weight and measurements will also be recorded along with photographs for a "before and after" comparison at a later date.

A skin test is performed to get the correct setting for your body and skin type.

Some treatment areas are marked to assist in navigating whilst delivering the RF energy; helping to assure an even application of the RF.

A lubricating oil will then also be applied over the area to be treated which acts as an additional barrier between the surface layers of your skin and the hand piece, it also helps the hand piece glide over the skin and avoid skin chafing.

Your clinician will then commence the treatment working across the treatment area. Once completed a soothing gel/lotion or cold pack may be applied to your skin.

### **Recover after treatment**

Some people experience mild redness immediately following treatment (similar to a sun burnt look), but this usually disappears quickly. Most people find that they can return to work and normal activities immediately after treatment.

Your practitioner will talk to you about may be advised to use certain soothing lotions, creams or gels to lightly apply to a soothing gel that you can apply after your treatment as you feel necessary.

### **What are the risks or potential complications?**

As the treatment is carried out you will experience a heating sensations every time the RF energy is delivered to your skin and underlying tissue.

As each person's pain tolerance and threshold varies, it is difficult to quantify how uncomfortable the treatment is. The discomfort level can also depend on the settings that are applied for the treatment.

The most frequently reported side effects of treatment with RF energy are swelling, redness or bruising on or around the treated area, which typically disappear in a few hours to a day. You can also have a sensation of dry skin in the treated area for a couple of days; this is why we recommend a soothing gel to be applied.

Some people may notice a slight increase in urine output following treatment. This is because any excessive fluid buildup in between cells in the area treated is drained through the lymphatic system via the treatment process – this then gets excreted in the urine.

In very rare circumstances and if the correct instructions are not followed by the practitioner, it is possible to suffer from a skin burn.

### **Is it safe for everyone to use Med shape with Bi-polar Radiofrequency for cellulite treatment?**

As long as you are generally healthy and don't have any skin diseases or infections in the area treated, there are few medical reasons why patients should not undergo this treatment.

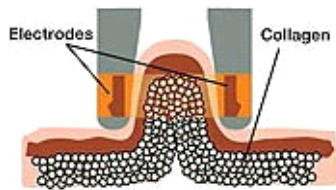
People with sensory disturbance to the skin may not be considered good candidates as this could make the reporting of discomfort during the procedure unreliable, leading to potential harm. Although there is no evidence that this treatment is harmful for pregnant women, you would generally be advised to wait until after you have given birth before embarking upon a course of treatment.

Treatment is not recommended if you fit in the following categories

- Pregnant women or nursing mothers
- Epilepsy
- Tumour
- Blood disorders
- Acute inflammation and transmissible disease
- Heart disease
- Kidney disease (cholelithiasis)
- Liver disease or any disorder of the liver (such as taking steroids for a long time)
- Serious illness such as diabetes
- Infections, especially in the cervical ganglia, spine, eyeball
- Internal bleeding (e.g. from ulcers)
- Pins, metallic prosthesis and Pacemaker
- During menstruation
- Loops
- Urinary incontinence
- Internal heat in the body, e.g. fever or intense inflammation
- Atopic disease

If you have any other diseases or medical concerns please discuss this with the therapist before commencing any treatment.

The procedures will work without diet or exercise, but you can greatly enhance your results by improving your diet and exercising. Also, water is extremely important to aid the body in elimination. Those clients who have had the best results follow these recommendations. Those who have had poorer results have usually done nothing to help the process – either they did not drink enough water, they did not exercise at all.



The special design headpiece uses vacuum to fold the skin, ensuring contact and positioning the dermis in direct alignment with radio frequency probe. The combination of this vacuum positioning and the use of RF concentrate heat deep in the dermis, leading to collagen contraction and regeneration.