TRAINING MANUAL

High Frequency

HISTORY

- High frequency current was first developed by renowned scientist, Nikola Tesla, in the late 1800's.
- It was mainly used for medical purpose such as throat infections.
- European salons discovered the cosmetic and healing benefits of HF on the skin in the 1970's.
- By 1980 the technology became widely used in North America by skin care professionals.
- Widely used around the world now.

This treatment can be applied directly or indirectly to the skin and can be used to heal, stimulate or sanitise the skin. The machine uses a high frequency current that alternates over 100,000 cycles per second. The output of the machine is a high frequency, alternating/oscillating current of 250,000 Hz at a high voltage and low current flow. A high frequency machine will have an on/off switch and an intensity control.

- The pulses of the current are short
- Does not stimulate motor points or contract muscles
- Pulses pass easily into the skin via the electrode
- Used to stimulate blood flow
- Creates heat in the tissues
- 2 methods – DIRECT / INDIRECT

General Effects:

1. Stimulation of the surface tissue

- Creates heat in tissues – speeds up the interchange of blood and tissue fluid within the body
- Vaso-dilation of blood vessels
- Improve skin appearance and texture
- Massage medium is absorbed more readily and the effects of the massage are maximised due to the warmth (indirect)
- Stimulation of sweat gland will have a deep cleansing effect
- Stimulation of lymph system increases removal of waste from skin

2. Relaxation

The warmth generated within tissues produces a sedative effect increasing relaxation and relief of tension

3. **Germicidal (direct method)**

- Ozone gas kills germs and bacteria

4. Drying (direct method)

- Ozone has a drying effect on skin

5. Destructive

If direct HF is applied incorrectly (overtreating) it can have a destructive effect (similar to a mild burn)

High Frequency – Direct

Effects – antibacterial / germicidal / healing / drying / stimulating

- Oily skin
- Mild acne
- Blemished skin
- Congestion
- Sluggish circulation
- Teenage skins

High Frequency – Indirect

- Dry skins
- Dehydrated skins
- Congested skins
- Sluggish circulation (uneven colour/texture)
- Mature skin
- Normal

HOW OZONE IS PRODUCED.

- The glass electrodes are partial vacuums, that is, hollow tubes.
- The contain a low density of air and inert gas (argon).
- This produces the blue light (colour can vary).
- This provides a passage along which the current flows.

- The high frequency energy is discharged into the skin where the electrode makes contact.
- When the high frequency current is passed through oxygen, it produces ozone.
- This occurs between the electrode and the skin, and is more intense when electrode is lifted very slightly off the face to spark pustules.

Comparison Chart

	Direct high frequency	**Indirect high frequency**
Method of application	A glass electrode is moved in circular motions slowly over the skin	The client holds the electrode in their hand and the therapist massages the client's face with their hands
Sensation	Client will feel a warm, tingling/buzzing sensation	A warm sensation will be felt under the therapist's hands
Uses	1. Drying effect on any oily areas 2. Destroys bacteria and assists with the healing of any pustules 3. Improves the condition of a blemished skin 4. Improves a dry skin due to the stimulation of the sebaceous glands if applied for a short time (5 minutes)	5. Improves the condition of a dry skin 6. Improves the appearance of a sluggish skin 7. Aids deeper absorption of the massage medium 8. Aids relaxation of the client and skin tissues 9. Tightening effect improves the appearance of fine lines

Electrodes

The current is applied via a glass electrode and when the electrode is fitted into the holder, it connects with the metal plate situated inside the holder, which passes the current through to the glass electrode. Within the glass electrode is a very small amount of gas that ionises when the current passes through, the current then flows through the tube and passes into the skin tissues. The electrode will glow a certain colour depending on the gas contained inside. There are different types of electrodes which are discussed in detail in the next slides.

Mushroom electrode - Mushroom is the most popular electrode for the direct method. It is used on any part of the body, and is particularly ideal for facial work. It is often supplied in two sizes, the larger for body work, and the smaller for facial work.

Bulb shaped electrode - To treat small targeted areas such as individual spots

Spoon shaped electrode - Treat larger areas of the face such as cheeks, forehead, neck and scalp

Horseshoe electrode - The horseshoe electrode is used for directly working over large curved areas of the body such as the neck or trapezius muscle.

Roller electrode - The roller electrode is directly applied to large flat areas such as the back. It treats larger areas of the body, as it rolls freely over area, no gauze or sliding agent necessary, this does not spark when lifted from skin, so good for nervous clients.

Rake electrode – scalp area

Saturator (indirect) - Glass saturator is used during an indirect high frequency treatment. The client holds the saturator in one hand and the handle in the other.

Direct High Frequency

In direct high frequency the glass electrode is placed directly onto the skin over a layer of gauze that is positioned over the client's face or positioned around the electrode, and is applied using slow circular motions. The current passes through the electrode, when it comes into contact with oxygen ozone is produced. The current is then dispersed into the skin. Contact with the skin must be maintained throughout the treatment, with the therapist's free hand used to hold the cable. This treatment produces a buzzing sound when applied, which the client should be made aware of prior to the treatment. When direct high frequency is applied, the client will feel a slight warmth and tingling sensation.

Restrictions to direct high frequency

In addition to the general contra-indications, the following conditions will restrict application to an area:

- Highly vascular conditions
- Sunburn
- Excessive metal fillings or bridgework
- Blocked sinuses
- Tense or nervous client (due to the noise produced by the equipment)
- Migraine
- Acne rosacea

Effects of direct high frequency

- Stimulates sebaceous gland activity when applied for a short period of time.
- Germicidal effect is produced which destroys bacteria, therefore effective at treating pustular conditions. This sparking effect produces ultraviolet emissions, which also destroy bacteria. This effect is produced when the electrode is moved away from the skin slightly causing the current to jump across the air gap to the skin.
- Speeds up cell metabolism, which improves the appearance of the skin.

- Blood vessels vasodilate resulting in improved colour to the skin.

- Constricting effect on the pores.
- Due to the oxygen being converted to ozone the treatment has a drying effect on the skin.
- Increased blood circulation results in vasodilation of the blood vessels causing an increase in heat to the area.
- Circulation is increased which brings fresh oxygen and nutrients to the area.
- Improves the efficiency of waste product removal.
- Increases lymphatic circulation, assisting with the removal of waste products.
- Stimulates superficial sensory nerve endings.

Indirect High Frequency or Viennese Massage

During an indirect high frequency treatment, the client holds the saturator in their hands. When the current is switched on, it passes through the saturator and is dispersed into the skin, which effectively charges the client. The therapist then uses their hands to apply the massage to the client's skin, which causes the current to transfer from the client's skin to the therapist's hands. The therapist is part of the electrical circuit during the application of indirect high frequency. Contact must be maintained with the client's skin throughout the treatment, to prevent any shocks from occurring, therefore no tapotement movements should be included in the massage.

Restrictions to indirect high frequency

In addition to the general contra-indications, the following will restrict treatment in the area:

- Highly vascular conditions

- Sunburn

- Excessive metal dental work

- Migraine

Effects of indirect high frequency

- Cell metabolism is speeded up, which improves the appearance of the skin.

- Activity of the sebaceous and sudoriferous glands is increased.

- Pores dilate.

- Massage movements aid desquamation.

- Vasodilation occurs due to the increased heat in the area.

- Circulation is increased which brings fresh oxygen and nutrients to the area.

- Lymphatic system speeds up therefore improving the elimination of waste products from the area.

- Has a soothing and sedating effect on the nerve endings.

- The increase in blood supply will nourish the bones.

	DIRECT	INDIRECT
Products	Talc or oxygenating cream	Massage oil or cream / treatment ampoule
Equipment	Glass electrodes	Saturator
Method	Electrodes directly onto the skin	Client holds saturator / therapist carries out massage
Effects	Produces ozone – antibac, germicidal, healing, slightly drying	Stimulates blood & lymph system / rehydrating, moisturising
Skin type	Oily / mild acne / combination	All skin types – dry / dehydrated / sluggish / dull / mature

Consider the precautions you should take when applying a high frequency treatment.

- Ensure dials are at zero before applying the electrode onto the client.
- Test the machine on yourself prior to application.
- Always remove all jewellery to prevent shocks.
- Ensure that both you and the client are not in contact with anything metal otherwise you may feel a shock.
- Explain about the buzzing noise, ozone smell and glow produced by the electrode.
- Always keep the electrode in contact with the skin to prevent shocks when applying the direct method.
- Always keep one hand in contact with the skin when applying the indirect method to prevent any shocks from occurring.
- Remember to reduce the intensity when working over bony areas.
- Do not spark further than 7mm away from the skin as this can cause tissue destruction or shock the client.
- Do not use any products containing alcohol on the skin as it has flammable properties.
- Check client comfort throughout.

High Frequency – Direct

Order of work:

- Remove jewellery from both client and yourself.
- Cleanse face and neck thoroughly, tone and blot dry.
- Apply a thin layer of oxygenating cream to the area to be treated. To intensify the treatment, apply a clean sterilised dry gauze over the electrode (this is not necessary for sparking treatments.)
- Insert the appropriate electrode firmly into the black handle. Care should be taken when handling glass electrodes.

- Place electrode onto area to be treated, gently turn up current. You can place your finger on electrode, then place on skin, to remove place finger on electrode and remove.

- Work over the area, ensuring the electrode is constantly moving. Average treatment 2-3 mins all skin types (warming and increasing circulation) 5-7 minutes greasy, seborrheic, acne skin (drying and refining). Ensure that no one area is worked on for longer than 2-3 mins, or tissue sensitivity may result.
- When treatment completed, with electrode still in contact with the skin turn down intensity and switch off. Remove electrode from the skin.
- Remove gauze, oxygenating cream, tone and blot dry.

INDIRECT HIGH FREQUENCY

Order of work:

- Remove jewellery from both client and yourself.

- Cleanse face and neck thoroughly, tone and blot dry.

- Apply a thin layer of oxygenating cream to the area to be treated.

- Lightly talc client's hand (the one to hold the electrode).

- Place indirect electrode (saturator) in high frequency handle and give to client to hold in relaxed position. Switch on machine (checking intensity is at zero)

- Place one hand on the client's face or shoulder and do small circular effleurage movements and gradually turn up the intensity until correct level is obtained. This will actually be very low because of the nature of the electrode. (No tapotement as you do not want to break contact)
- Now place other hand on face and commence facial massage. Treatment time between 8 - 12 minutes.
- On completion remove one hand from face, lower intensity knob and turn off unit before removing the other hand. Take electrode from client.
- Remove excess cream, tone and blot dry.