

TRAINING MANUAL

Galvanic face/body



History

Luigi Galvani

1737 - 1798

- An Italian physician and physicist.
- Famously known for his discovery in 1771 that the muscles of dead frogs twitched when an electrical spark was applied to them.
- Credited with discovering 'bioelectricity'. Where the term 'galvanism' originates from (Volta).

Alessandro Volta

1745 - 1827

Was an Italian Physicist whom had a passion for the study of electricity and is particularly known for the development of the electric battery in 1800. The electrical unit 'volt' is named in his honour. It was Volta who coined the term 'galvanism' after his peer Galvani with whom he had a disagreement with, in regards to the cause of electricity.

Mary Shelley who wrote 'Frankenstein' was particularly interested in Galvani's research into the reanimation of dead tissue by electricity.

- In Beauty Therapy, Direct Currents used for the chemical changes they produce in the client's skin are known as galvanic currents.
- Named after Galvani (who discovered the principle of the electric battery).
- Any treatment involving these currents is a branch of galvanism.

This treatment uses a direct/galvanic current that can be applied in two different ways:

Desincrustation - This deep cleansing treatment softens dead skin cells and sebum.

Iontophoresis - This penetrating treatment introduces water-soluble preparations into the skin.

The current

A **continuous** and **smooth direct current** is used to produce the chemical effects of galvanic therapy. If a smooth current was not used it would cause the facial muscles to contract. Modern galvanic units operate from the mains electrical supply. Inside the machine, the mains alternating current at 240 volts is converted into a smooth direct current at up to 100 volts. This is achieved through a three-stage process by devices contained within the unit:

- **Transformer** - reduces the voltage of the mains current.
- **Rectifier** - changes the current from alternating to direct.



- **Capacitor** - smoothes out any irregularities in the direct current.

The current can now be applied to the skin via the roller or ball electrode in the form of a smooth galvanic current.

The machine (re-cap)

- Smooth (uninterrupted) direct current
- Galvanic machine converts AC (from mains) to DC
- Transformer reduces voltage
- Rectifier changes AC to DC
- Capacitor smoothes any irregularities in the DC
- A low intensity direct current is used
- Measured in milli-amps

Galvanic Current

The stratum corneum (horny layer) of the skin has a low moisture content and is coated with sebum which has a high resistance – therefore, a high voltage is needed to break through this resistance. Once through the horny layer current flows easily through the body tissues.

Galvanic Current

Galvanic treatment effectiveness works upon the electrical principle;

● like charges repel

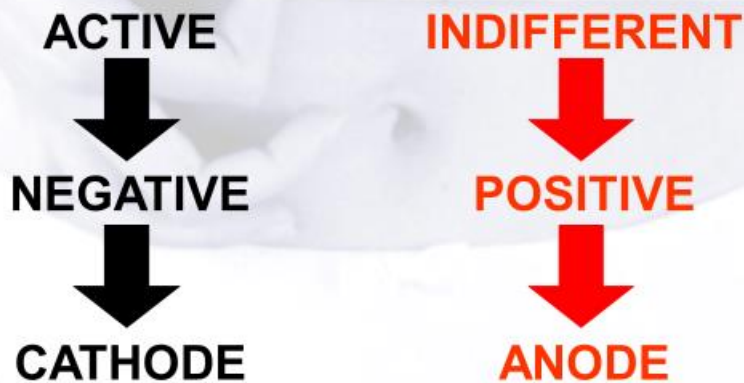


● opposite charges attract



Galvanic Current

A Galvanic machine has two **electrodes** connected to it;



Effects:

● **DESINCRUSTATION**

dez-in-crust-a-shon

- Removal of excess sebum
- Sodium hydroxide (alkali) produced at the negative electrode/pole emulsifies sebum
- Opposites attract

Effects:

● **IONTOPHORESIS**

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- Used with active substances
- Current propels (introduces) ingredients into the skin
- Like poles repel

What happens at the negative pole?

- Production of new substance – Sodium Hydroxide
- Break down of acid mantle
- Opens pores
- Produces heat - erythema
- Vasodilation – increases blood / lymph flow
- Stimulates sensory nerve endings
- Saponification of sebum
- Softening

What happens at the positive pole?

- Production of new substance – Hydrochloric Acid
- Restores acid mantle / closes pores
- Calms sensory nerve endings
- Reduces blood / lymph flow
- Produces heat / Softening

Safety procedures

- Check contra-indications
- Carry out skin sensitivity tests (cons.)
- Check wires / plugs / attachments
- Check machine at zero before use
- No water near machine
- Stable base
- Remove jewellery

General effects

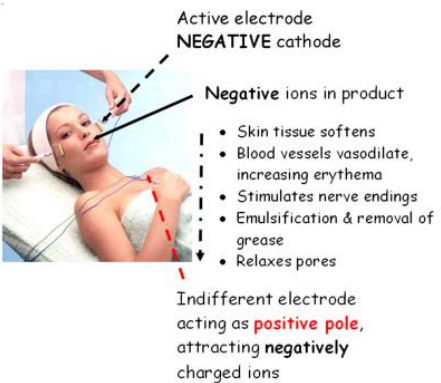
- Increased blood and lymphatic circulation
- Speeds up removal of excess fluid and waste from area
- Reduction of non-medical swelling / puffiness
- Improved function / appearance of skin by introduction of water-soluble substances

FACIAL BENEFITS

Improves skin texture – removes surface dead skin cells (desquamation)

Introduction of active substances into the skin for therapeutic effect

Galvanic unit switched to NEGATIVE



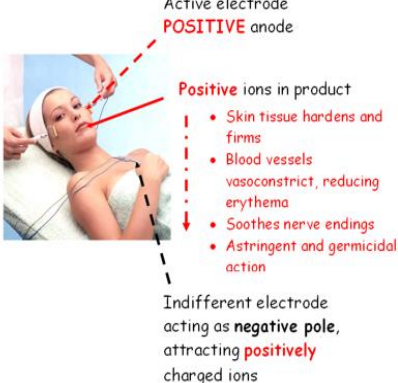
Galvanic unit switched to NEGATIVE

Active electrode
NEGATIVE cathode

Negative ions in product

- Skin tissue softens
- Blood vessels vasodilate, increasing erythema
- Stimulates nerve endings
- Emulsification & removal of grease
- Relaxes pores

Indifferent electrode acting as **positive pole**, attracting **negatively** charged ions



Galvanic unit switched to POSITIVE

Active electrode
POSITIVE anode

Positive ions in product

- Skin tissue hardens and firms
- Blood vessels vasoconstrict, reducing erythema
- Soothes nerve endings
- Astringent and germicidal action

Indifferent electrode acting as **negative pole**, attracting **positively** charged ions

Restrictions to a galvanic facial

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

- Hypersensitive skin or loss of skin sensation - as the person would not know if the current was comfortable etc.
- Metal plates or pins in the area
- Highly nervous clients
- Sensitive skins such as acne rosacea or dermatitis
- Pacemaker
- Excessive fillings or metal bridge work

How would you decide what polarity to use during the treatment?

- Before a decision is made as to which active electrode to use you must look at the labelling on the product to ascertain if it contains positive or negative ions.
- Products labelled positive contain **positively charged ions (cations)** and a positive active electrode will repel this product into the skin. Remember positive active electrodes also produce the anaphoresis effects on the skin.
- Products labelled negative contain **negatively charged ions (anions)** and a negative active electrode will repel this product into the skin. Remember a negative active electrode also produces the cataphoresis effects on the skin.

Applying and adjusting to suit individual clients needs

When applying the galvanic current, you will need to make adjustments depending on the client's needs. You will need to make adjustments with reference to the:

- products used
- method of application
- intensity used
- treatment duration

Adjustments

- When deciding on the **product choice** you will need to consider the client's skin type, manufacturer's recommendations and the results required depending on the polarity applied.
- The **method of application** will vary slightly depending on the client's particular needs. For example, you may need to perform extra work to a congested area to assist with extraction, or the client may wish that you concentrate on the eye area.
- The **intensity used** will vary depending on the equipment being used however; a guideline would be that a higher intensity is used for a more oily skin, with the lowest intensity being used for a sensitive skin. The reading should be between 0.5 and 1.5 mA.
- Depending on the manufacturer's instructions, the **treatment time** may vary. As a rule, you would normally select a longer treatment time for a more serious condition. The shortest treatment time would be for a sensitive skin.

Effects of the galvanic treatment depending on the polarity used

- Circulation is increased which brings fresh oxygen and nutrients to the area.
- Improved efficiency in the removal of waste products from the area.
- Blood vessels will either vasodilate or vasoconstrict.
- Cell metabolism is speeded up which improves the appearance of the skin.
- Improvement in skin colour due to the vasodilation of the blood vessels – if a negative polarity is used.
- Dilating or constricting effect on the pores.
- Softening or hardening of the skin tissues.
- Lymphatic circulation is increased which assists with the removal of waste products from the area.
- Increased circulation brings fresh oxygen and nutrients to the muscles and removes waste products.
- Has a stimulating or soothing effect on the nerve endings depending on the polarity used.

Sensitivity tests

In order to perform a safe and effective treatment the therapist must check that the client has normal skin sensation. This is ascertained by performing a sensitivity test on the client's forehead, cheeks, chin and neck. Examples of sensitivity tests are:

- Hot and cold - test tubes containing hot and cold water
- Hard and soft - orange stick and cotton wool

Consider the precautions that you should take when applying a galvanic treatment.

- Always check wiring and equipment before each treatment.
- Check that the intensity is at zero at the start and finish.
- Do not allow the client to touch the machine.
- Ensure that there is sufficient product applied to the skin.
- Avoid the rollers clashing together.
- Check what sensations the client is experiencing during the application of the current.
- If applying lint over the electrodes ensure that the lint is fully saturated with product.
- Remove all jewellery and metal objects from yourself and the client.
- Avoid electrodes from breaking contact with the skin.
- Do not allow the client's skin to become dry.
- Ensure that the client is not touching anything metal or damp.
- Use a sportex cover on the indifferent electrode.

- Always keep rollers moving to prevent galvanic burns.
- Petroleum jelly may be applied around the eye area to prevent any discomfort.
- Turn the current up and down slowly.
- Reverse the polarity to conclude the treatment (check manufacturer's instructions).
- Ensure that the treatment time does not exceed 7 minutes for facial work.

Body Galvanic – Introduction

The aim of a body galvanic treatment is to soften areas of stubborn fat and disperse any fluid that is retained in the area. Therefore, the treatment disperses the lumpy fat cells associated with cellulite.

The effect is achieved by using the properties of the current and often the active ingredients within a gel substance, which has a stimulating effect. The products improve the interchange of tissue fluids in the area; in addition, the treatment also produces the specific benefits of the galvanic current. This treatment creates a slight warming and tingling sensation when applied, which the client must be informed about.

Iontophoresis and body galvanism

Galvanic currents are used in the following two ways in a body treatment:

- 1. Iontophoresis** - introduces water-soluble anti-cellulite substances for specific effects using both the positive and negative pole (depending on manufacturer's instructions). This substance will be repelled into the skin to produce the desired effect.
- 2. Body Galvanism** - uses pads that are soaked in saline solution. The active electrode is the cathode (negative). The inactive electrode is placed opposite the active electrode.

The galvanic machine

The galvanic body machine uses a number of electrodes, which allows the therapist to treat large areas of the body. The machine will have the following features:

- An on/off switch
- Outlets for the attachment of the electrodes
- Intensity control switch – operates variable resistance
- Polarity change over switch – alters current from – to +
- Milliamp meter – provides a reading of the current flowing through the client

How does it work?

- The current can pass through the body because the bodies' tissue fluids contain ions.
- In order for the treatment to work both positive and negative connections are required.

- The electrode that creates the chemical effect is known as the active electrode and this is applied to the area requiring attention. The other electrode is known as the indifferent electrode, and this is placed on an opposite area of the limb or trunk.

The galvanic solution will contain active ingredients that have a positive or negative charge and this will be indicated by a + or – symbol on the product container. The solution is repelled into the skin by the active electrode, which must be the same polarity as the galvanic solution.

The most effective electrode for body iontophoresis is the negative pole due to this being most effective at treating cellulite conditions. The stimulating effect will cause tissue fluid movement which will help to improve the appearance of cellulite conditions.

The main uses of a galvanic treatment

- Improvement of the blood circulation, aids with the removal of waste products and toxins from the area.
- Improvement of the lymphatic circulation, aids with the removal of waste products and toxins from the area.
- Introduces the specific benefits of the anti-cellulite product when using iontophoresis.
- Improves the appearance of cellulite.
- Stimulates a sluggish or sallow skin as many products used in iontophoresis contain seaweed or marine extracts which are beneficial for these skin conditions.

Restrictions to a galvanic treatment

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

- Hypersensitive skin or loss of skin sensation - as the person would not know if the current was comfortable etc.
- Metal plates or pins in the area
- Highly nervous clients
- Pacemaker
- Pregnant women
- IUD coils in the uterus

Effects of the treatment on the different systems of the body

Remember the effects will vary depending on the polarity of the active electrode.

Effects on the circulatory system

- Circulation is increased which brings fresh oxygen and nutrients to the area.
- Increased efficiency in the removal of waste products from the area.
- Blood vessels will either vasodilate or vasoconstrict.

- Causes hyperaemia to the area due to the stimulating effect on the blood flow.

Effects on the skin structures

- Cell metabolism is speeded up which improves the appearance of the skin.
- Improvement in skin colour due to the vasodilation of the blood vessels – if a negative polarity is used.
- Dilating or constricting effect on the pores.
- Softening or hardening of the skin tissues.
- May help with the movement of fatty deposits, improving the contours of the skin.
- Speeds up the body's metabolism, which will assist with the burning of fat.

Effects on the lymphatic system

- Lymphatic circulation is increased which assists with the removal of waste products from the area.

Effects on the muscular system

- Increased circulation brings fresh oxygen and nutrients to the muscles and removes waste products. This is only a minor effect.

Effects on the nervous system

- Stimulating or soothing effect on the nerve endings depending on the polarity used.

Precautions

- Always check wiring and equipment before each treatment.
- Ensure intensity dial is at zero at the start and finish.
- Do not allow the client to touch the machine.
- Remove all jewellery and metal objects from self and client.
- Ensure electrodes are in full contact with the skin.
- Do not turn the current up or down suddenly as this may cause a shock.
- Check the client is not touching anything metal or damp.
- If using saline solution, mix 2 teaspoonfuls of salt per litre of hot water; ensure that all of the salt crystals have dissolved before using.
- Saturate pads well and evenly, wring out any excess fluid.
- Ensure that there are no breaks in the surface of the skin.
- Ensure that the electrodes are in good condition and that there are no breaks or protrusions.

Galvanic burns

Galvanic burns may occur if there is an over production of either acid or alkali. They appear as a dark grey spot and take a long time to heal and very often scar. How can you prevent galvanic burns from occurring?

- Ensure you have sufficient product on the skin.
- Check client sensation at regular intervals.
- Monitor current reading.
- Ensure current intensity and duration is appropriate.
- Check that there are no breaks in the skin, sponges or electrodes.
- Ensure that the sponges are sufficiently and evenly damp.
- Ensure that electrodes are not applied over bony areas.
- Ensure that electrodes do not touch each other.
- Check that the electrodes have smooth contact with the skin.

Treatment for a galvanic burn

If a galvanic burn occurs, it needs to be treated in the same way as a chemical burn, flush with lots of cold water, cover with a sterile dry dressing, and recommend the client seek medical advice immediately. Application of lavender essential oil may assist the healing process.

Availability and use of homecare products

There are many products on the market that claim to assist with cellulite conditions. Your salon will often retail products which will improve the results of the salon treatment if the client uses them regularly at home. You can recommend:

- An anti-cellulite body product - which should be applied in gentle upward and circular strokes to the affected area 1-2 times a day.
- Body brushing - using a dry body brush apply in upward strokes to the affected area for 5 minutes per day.
- Herbal capsules - can be taken daily to help eliminate toxins and fluid from the body.
- Soothing product - may be applied to soothe the erythema following the treatment application. Such as rose water or cool water.

Aftercare advice

- Following a galvanic treatment, it is recommended that the client avoid any form of heat treatments, lotions/creams or UV for 6-8 hours. Additional heat to the area could make the erythema that occurs as a normal reaction to the treatment more intense.
- Drink lots of water to flush out the toxins.
- Advise about importance of a healthy balanced diet and the avoidance of processed foods.



- Daily body care routine.
- Advise when to return for treatment- if the client is taking a course of treatments they should receive treatment 2-3 times per week for 10 sessions.
- Contra-action advice.