ABOUT THE AUTHOR

Leesa C Keys graduated from Warwick University July 2000 with an honours degree in Biological Sciences. After graduation she bought and managed her own beauty salon before selling the business for a considerable profit.

In 2005 Leesa formed SkinBase Microdermabrasion Systems where she remains partner and senior trainer.
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SKINBASE MICRODERMABRASION TRAINING

SkinBase Microdermabrasion Training is provided in addition to existing beauty qualifications. The minimum requirement for training is NVQ Level 2 in Facials or equivalent. The training will cover both the theoretical and practical aspects of microdermabrasion.

The SkinBase MDPro is a professional microdermabrasion system engineered and manufactured in the UK. We have worked with experienced beauty therapists who have years of experience working with alternative products on the market to help us design a system with exceptional performance, quality and proven reliability.
SECTION 1 - LEARNING OUTCOMES:

- Understand your responsibilities under the Health and Safety at Work Act (1974) and how to implement them
- The ability to recognise different skin disorders and diseases and how they contraindicate treatment
- A basic understanding of the Anatomy and Physiology of the face and neck

HEALTH & SAFETY IN THE WORKPLACE.

This section will cover your responsibilities to yourself, employees (where applicable) and clients with regards to health, safety and welfare in the workplace. It is important that you are aware of these responsibilities and that they are implemented where reasonably possible. Knowledge of health and safety issues will help you to perform treatments safely and demonstrate a professional appearance and attitude at work.

The Health & Safety at Work Act 1974 outlines the minimum standards of health, safety and welfare required in the workplace. When working in a service industry you are legally obliged to provide a safe and hygienic environment.

TO AVOID POTENTIAL HAZARDS AND RISKS IN THE WORKPLACE YOU SHOULD:

- Know your legal responsibility with regards to implementing workplace health & safety policy
- Ensure your personal presentation at work meets health & safety and legislative requirements in accordance with workplace policies
- Follow workplace policies for your job role and manufacturers’ instructions for the safe use of resources
- Immediately report or deal with any risk that could be a hazard in the workplace
- Have first aid arrangements in place in the event of an accident or illness
- Have a workplace fire evacuation procedure in place and ensure all employees are aware of how to implement this procedure
- Minimise the possibility of spreading infection or disease by maintaining high levels of hygiene

Electricity at Work Regulations 1989

The regulations cover the installation, maintenance & use of electrical equipment in the workplace. Electrical equipment should be tested regularly by a qualified electrician to make sure it complies with health & safety. You should keep records of these checks. Also be aware of potential hazards associated with electrical equipment; exposed wires, cracked plugs and overloaded sockets.
Although it is the responsibility of the employer to ensure all equipment is safe to use, it is also the responsibility of the employee to **ALWAYS check that equipment is safe before use**, and to **NEVER use it if it is faulty**.

### POTENTIAL ELECTRICAL HAZARDS

- Exposed wires in flexes
- Cracked plugs or broken sockets
- Overloaded sockets

### First Aid

Even if you have taken all precautions to make sure the workplace is as safe as possible, accidents can happen. Make sure you have a first aid procedure in place so everyone in the workplace knows what to do in the event of accident, illness or emergency.

Every workplace should have a first aid box and a nominated person to be responsible for the maintenance of the box. Keep a record of any injuries in an accident log book.

**KNOW:**
- Where to locate the first aid book
- Who is responsible for maintenance of the first aid box
- Who to inform in the event of accident/illness/emergency occurring

### Disposal of Waste

Waste should be disposed of in an enclosed waste bin fitted with a polythene bin liner, durable enough to resist tearing. The bin should be regularly sanitised with disinfectant, wearing protective gloves.

**All the relevant publications regarding health and safety in the workplace can be downloaded from: The Health and Safety Executive (HSE) website: www.hse.gov.uk ensure you obtain and read these.**

### Hygiene in the Workplace

Sterilising equipment between clients is essential to destroy any harmful bacteria, fungi and viruses which could cause infection. Good hygiene in the workplace will prevent cross infection and secondary infection.

Cross infection occurs when micro-organisms are transferred through personal contact or by contact with an infected nozzle that has not been sterilised.

Secondary infection can occur as a result of injury to the client during the treatment, or if the client already has an open cut, bacteria can penetrate the skin & cause infection.

### Personal Hygiene

A high standard of personal hygiene is essential. You should wash your hands regularly and before and after each client. Long hair should be tied back, and you should avoid touching your face. Cover any cuts or abrasions on the hands with a clean dressing.
SKIN DISORDERS & DISEASES

Infectious diseases that are contagious contra-indicate beauty treatment. People with certain skin disorders, even though these are not contagious, should likewise not be treated by the therapist as treatment might lead to secondary infection. The therapist must be able to distinguish a healthy skin from one suffering from any skin disease or disorder.

IMPORTANT:

If you are uncertain or unable to identify a skin condition you should not treat the client and advise them to consult their doctor.

Certain skin disorders and diseases contra-indicate a beauty treatment: the treatment would expose the therapist and other clients to the risk of cross-infection it is therefore vital that you are familiar with the skin diseases & disorders with which you may come into contact.

Bacterial Infections

Bacteria can be present in large numbers on the skin without causing us any ill harm. However, certain types of bacteria are harmful to us and these are known as ‘pathogenic’. Pathogenic bacteria can cause skin diseases which are infectious and therefore a client should not be treated if found to be suffering from the following bacterial infections:

Impetigo
Extremely infectious and is easily spread through contact. Impetigo usually appears on the face first around the nose, mouth & ears, and can spread to other areas. Initially red and itchy, blisters appear and these become crusty and weep.

Conjunctivitis
Conjunctivitis is not always infectious as it can be caused by an allergic reaction or as a result of an irritant. However, it would be impossible for you to determine this so it should always be treated as infectious. The eye will appear red and inflamed; eyes might also be watery or have pus coming from the eye area.

Styes/Hordolea
Styes are an infection of the sebaceous gland at the root of an eyelash. This causes a swelling which can leave the adjacent area red and the affected follicle will have a small lump filled with pus.

Boil/Furuncle
A boil or furuncle is caused by the inflammation of hair follicles, resulting in an accumulation of pus and dead tissues. Boils are red, pus-filled lumps that are tender, warm, and/or painful. A yellow or white point at the centre of the lump can be seen when the boil is ready to drain.
Viral Infections

The particles of a virus are so small they cannot grow and reproduce on their own so they require a ‘host’ cell. Viruses invade healthy living cells in the body so they can reproduce. They enter the body any way they can; by inhalation, through saliva, sexual contact. Our immune system is designed to deal with most viruses and we will naturally fight off most infections. Clients suffering from the following viral infections should not receive microdermabrasion treatment.

**Herpes Simplex (cold sores)**
Cold sores are caught by close contact with someone who already has cold sores. They are characterised by a tingling feeling in the skin followed by sores which scab. Commonly found on the mucous membranes of the nose or lips they can also occur on other areas of the skin.

**Herpes Zoster (shingles)**
Shingles is an infection of the nerve and the area supplied by the nerve. The virus usually affects one nerve, commonly the chest, abdomen or the upper face. Symptoms occur in the area of skin supplied by the nerve, causing redness, blisters and scabs.

Fungal Infections

Fungi are parasitic, microscopic plants feeding off the waste products of the skin. Some fungal infections are found on the skin’s surface others are deeper within the skin tissue. Clients with fungal infections should not be treated as these diseases are infectious and can be spread.

**Tinea Corporis/Ring Worm**
Ringworm is a fungal infection of the skin found on the trunk of the body, the limbs & face. They appear as scaly red patches on the skin which spread outwards. The patches heal from the centre leaving a ring.

Other skin disorders are not infectious however they should be treated with some caution and in some cases avoided altogether.

Sebaceous Gland Disorders

The sebaceous glands are small glands which secrete an oily substance called sebum in the hair follicle to lubricate the skin, they are found in greatest abundance on the face and scalp. Sebaceous gland disorders include acne, rosacea and milia. Sebaceous gland disorders are generally caused by an over production of sebum.

**Milia**
Also known as ‘milk spots’ or ‘oil seeds’ they are benign, keratin filled cysts usually found around the nose and eyes. They are small, hard, white or pale yellow in appearance. They are not infectious and can be removed using a sterile needle to pierce the overlying skin and release the keratin.

**Comedones/Blackheads**
Caused by excess sebum and keratinised cells blocking the hair follicle. They are found on the face, the upper back and chest and are not infectious.
Seborrhoea
Caused by excessive secretion of sebum, usually occurs during puberty because of hormonal changes. Sufferers will have enlarged follicles and excessive sebum. It is not infectious and usually found on the face and scalp. It can also affect the back and chest.

Sebaceous Cysts
These form in the hair follicle when sebum becomes blocked and a lump forms. They are not infectious.

Acne Vulgaris
Hormonal imbalance during puberty causes an increase in the production of sebum. This in turn causes congestion in the sebaceous ducts resulting in inflammation of the skin, comedones, pustules and papules. It is not infectious, commonly found on the face, nose, chin and forehead. It may also occur on the chest and back. Active acne should be avoided during microdermabrasion treatment.

Rosacea
Caused by a combination of excessive sebum secretion and chronic inflammatory condition, skin becomes coarse, pores enlarge, cheeks and nose become red and inflamed. The skin can look purplish in appearance because of slow blood circulation. Rosacea cannot be treated with Microdermabrasion.

Pigmentation

Hyperpigmentation - Increased Pigmentation
Chloasmata ‘liver spots’ - increased pigment production can be caused by UV light, often occurs during pregnancy, oestrogen is believed to stimulate the production of melanin and so may also occur as a result of taking the contraceptive pill. They occur on the hands, forearms, upper chest, temples and forehead.

Ephelides ‘freckles’ - caused by exposure to UV light which stimulates the production of melanin. Found on the nose and cheeks of fair skinned people, also can occur on the hands, arms, shoulders and back.

Lentigo - patches of hyperpigmentation larger than freckles, occurring either in childhood or middle age due to sun exposure. Found on the face, hands and shoulders.

Hypopigmentation - Loss of Pigment
Vitiligo - patches of skin which have no pigment in them so appear completely white

Albinism - skin with no pigment whatsoever and so the skin, hair and eyes lack colour. Skin is very pale pink, eyes are also pink and hair is white.

Erythema
Erythema is the reddening of the skin caused by dilation of the blood vessels controlling capillary networks in areas of the skin affected by injury or infection.
Vascular Naevi
These are areas of pigmentation caused by permanent dilation of blood capillaries

-Dilated Capillaries – small red capillaries visible in areas that are neglected or dry like the cheeks.
-Spider Naevi – dilated blood vessels with dilated capillaries spreading out around them.
-Naevi vasculosis ‘strawberry marks’ – red or purplish raised marks that appear on the skin at birth
-Capillary Naevi ‘Port-wine stain’ – large areas of dilated capillaries

Telangiectasia (Broken Capillaries)
Any form of broken capillary can be made worse by the vacuum action of microdermabrasion. These “thread veins” are quite common around the nose and cheek area. The area would have to be avoided completely or the treatment would have to be performed at a very low level.

Keloids
Keloids are scar tissue with excess deposits of collagen. Skin is raised in appearance, red with ridges. This type of scar tissue cannot be treated with microdermabrasion. Stretch marks and post-operative scars can be treated, however scar tissue should not be treated until all the inflammation has disappeared (6 months post surgery for example).

Dermatitis
An inflammation of the skin caused by an irritant or allergen. There are several types of dermatitis, symptoms can include skin which is red, itchy, flaking, scaling, weeping, swollen and possibly blistered depending on the severity.

Irritant contact dermatitis occurs quickly after contact with a strong irritant or over a longer period after prolonged and repeated exposure to a weak irritant. Common causes of this type of dermatitis are; soaps, shampoos and detergents, dust, oil and grease, repeated and prolonged contact with water.

Allergic contact dermatitis is caused when the sufferer develops an allergy to a substance. Common causes are hair dyes, adhesives and food such as shellfish.

Eczema
There are two main types of eczema, atopic and contact.

Atopic eczema tends to develop in childhood and many children grow out of it.

Contact eczema usually affects adults and is caused by contact with an allergen such as nickel, detergents, soaps and perfumes.

When suffering from eczema the skin becomes itchy, dry and flaky, and is often red and painful. Sometimes it weeps or bleeds. Areas commonly affected are the face, neck and skin particularly in the inner creases of the elbows and behind the knees.

Psoriasis
Psoriasis is a chronic, autoimmune disease affecting the skin and joints. Psoriasis causes scaly patches of skin called psoriatic plaques which are areas of inflammation and excessive skin production which rapidly becomes silvery white in appearance due to the build up of skin.
ANATOMY AND PHYSIOLOGY

It is important to have some basic understanding of anatomy and physiology as a therapist carrying out treatment.

BONES OF THE HEAD & NECK
The face is made up of 14 facial bones, these are indicated in the diagram below.

**Facial Bones**

<table>
<thead>
<tr>
<th>Bone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palatine</td>
<td>x 2 Forms the floor and wall of the nose and the mouth roof</td>
</tr>
<tr>
<td>Nasal</td>
<td>x 2 Form the bridge of the nose</td>
</tr>
<tr>
<td>Turbinate</td>
<td>x 2 These two bones form the outer walls of the nose</td>
</tr>
<tr>
<td>Vomer</td>
<td>This is the dividing wall of the nose</td>
</tr>
<tr>
<td>Lacrimal</td>
<td>x 2 The inner walls of the eye sockets</td>
</tr>
<tr>
<td>Maxilla</td>
<td>x 2 Fused to form the upper jaw</td>
</tr>
<tr>
<td>Mandible</td>
<td>The lower jaw</td>
</tr>
<tr>
<td>Zygomatic</td>
<td>x 2 Cheekbones</td>
</tr>
</tbody>
</table>
The rest of the skull is made up of the cranial bones there are eight in total shown in the diagram below.

**Cranial Bones**

<table>
<thead>
<tr>
<th>Bone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occipital</td>
<td>Located at the back of the skull, contains the hole for the spinal chord, nerves and blood vessels to pass through</td>
</tr>
<tr>
<td>Parietal</td>
<td>x 2 fused together to form the crown</td>
</tr>
<tr>
<td>Frontal</td>
<td>Forehead and upper eye sockets</td>
</tr>
<tr>
<td>Temporal</td>
<td>x 2 The sides of the head</td>
</tr>
<tr>
<td>Ethmoid</td>
<td>Forms part of the nasal cavities</td>
</tr>
<tr>
<td>Sphenoid</td>
<td>Bat-shaped bone joining all the cranial bones together</td>
</tr>
</tbody>
</table>
Neck, Chest and Shoulder Bones

Front
- Hyoid
- Cervical Vertebra
- Clavicle
- Scapula
- Sternum
- Ribs
- Humerus

Back
- Hyoid
- Cervical Vertebra
- Scapula
- Humerus
- Vertebral Column
The muscles in the face and neck are responsible for our facial expressions. As we age the expressions that we use on a daily basis produce lines on the skin and we begin to show the outward signs of ageing. Microdermabrasion removes the dead skin cells from the epidermis improving the appearance of these fine lines and wrinkles.

Facial Muscles

- Occipito frontalis
- Temporalis
- Procerus
- Orbicularis oculi
- Corrugator
- Nasalis
- Quadratus labii superioris
- Zygomaticus Minor
- Orbicularis Oris
- Zygomaticus Major
- Risorius
- Depressor labii inferioris
- Triangularis
- Mentalis
- Platysma
- Buccinator
- Masseter
CRANIAL NERVES

The nervous system is the body’s method of sending ‘information’ messages from the brain to other parts of the body.

The nerves of the face and neck or ‘cranial’ nerves control the muscles in the head and neck or carry nerve impulses (sensory information) from sense organs to the brain.

The 5th, 7th and 11th cranial nerves are those that we are concerned with as therapists when performing facial treatments.
<table>
<thead>
<tr>
<th>Nerve</th>
<th>Function</th>
<th>Nerve Branches</th>
<th>Sends Messages to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5th 'Trigeminal'</td>
<td>Controls muscles for chewing</td>
<td>Ophthalmic</td>
<td>Tear glands, Skin of forehead, Upper cheeks</td>
</tr>
<tr>
<td></td>
<td>Passes on sensory info from the face</td>
<td>Maxillary</td>
<td>Upper jaw muscle, Mouth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mandibular</td>
<td>Lower jaw muscle, Teeth, Muscles for chewing</td>
</tr>
<tr>
<td>7th 'Facial'</td>
<td>Controls muscles used for facial</td>
<td>Temporal</td>
<td>Muscle surrounding the eye, Muscles on the forehead</td>
</tr>
<tr>
<td></td>
<td>expressions</td>
<td>Zygomatic</td>
<td>Eye muscles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Buccal</td>
<td>Upper lip, Sides of the nose</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mandibular</td>
<td>Lower lip, Chin</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cervical</td>
<td>Sides of neck and chin</td>
</tr>
<tr>
<td>11th 'Accessory'</td>
<td>Moves the neck and shoulders</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION 2 - LEARNING OUTCOMES:

- A basic knowledge and understanding of the structure and function of the skin
- You will be able to identify the different skin types
- Good understanding of microdermabrasion theory
- You will be able to identify the problem areas that can be treated with microdermabrasion treatment
- Understand how a course of microdermabrasion treatment works

THE SKIN

The skin is the largest organ of the body. The skin functions in a number of ways to protect us from external elements.

- Prevents the absorption of harmful substances
- Helps regulate body temperature
- Acts as a barrier to keep out infection
- Melanin in the skin protects us from the harmful effects of UV light
- Provides a waterproof coating that prevents us from becoming dehydrated
- Provides an energy reserve in the form of stored fat

The Structure of the Skin

The skin is made up of two distinct layers; the epidermis and the dermis. Between them is the basement membrane which keeps the two layers together. Beneath these layers is the subcutaneous layer, a layer of fat that protects, cushions, insulates and stores extra energy for the body.

The Epidermis

The epidermis is the outermost layer of the skin. It is composed of five layers. Each layer of the epidermis can be recognised by its shape and by the function of its cells. The main type of cell found in the epidermis is the keratinocyte, which produces the protein keratin.

Cell renewal happens over a period of approximately four weeks. Cells move from the bottom layer of the epidermis (basal layer) to the top layer (horny layer) changing in shape and structure as they progress. The top layer of the epidermis is the layer that dies and which is shed from the skin ‘desquamation’. This is the layer that is removed in microdermabrasion treatment and also the layer that helps to reflect UV light away from the skin, which is why it is important that clients use sun protection after microdermabrasion treatment.
The Epidermis

The Five Layers of the Epidermis

1. **Stratum Corneum or ‘Horny Layer’**
   This is the outermost layer of the epidermis, made up of several layers of flattened, mostly dead, overlapping cells. These cells help to reflect UV light.

   Black skin, which evolved to withstand strong UV light, has a thicker stratum corneum than caucasian skin. It takes about three weeks for the epidermal cells to reach the stratum corneum from the stratum germinativum. The cells are then shed; a process called desquamation.

2. **Stratum Lucidum or ‘Lucid Layer’**
   This layer is only found in thicker areas of the skin such as the palms of the hands or soles of the feet.

3. **Stratum Granulosum or ‘Granular Layer’**
   In this layer cells begin to die. These cells have what look like granules within them caused by the nuclei breaking up. These granules are known as keratohyaline granules and later form keratin.

4. **Stratum Spinosum or ‘Prickle Cell Layer’**
   The stratum spinosum is made up of cells which have a spikey surface (hence the name) to connect with surrounding cells. This is the layer that begins to synthesise keratin.
5. Stratum Germinativum or ‘Basal Layer’

Column shaped cells responsible for producing new epidermal cells. Cells divide and move up to higher layers. The remaining cells divide to fill the gaps. This process of cell division is known as Mitosis.

The germinative zone of the epidermis also contains two other important cells, Langerhan and Melanocyte cells.

Langerhan cells - absorb & remove foreign bodies that enter the skin. They move out of the epidermis and into the dermis below then finally enter the lymph system; the body’s ‘waste disposal system’.

Melanocyte cells - Responsible for the production of melanin in the skin. These protect the other epidermal cells from the harmful effects of UV. Melanin helps determine our skin colour, the more melanin present the darker our skin tone.

The Dermis

The dermis is the layer found beneath the epidermis and is responsible for the strength and elasticity of the skin. It also contains lots of specialised cells and structures including nerves, blood vessels, glands & hair follicles. The dermis consists of two layers, the papillary and reticular layers. The upper, papillary layer contains a thin arrangement of collagen fibres. The reticular layer beneath is made of dense collagen fibres arranged parallel with the skin’s surface.
The Reticular Layer

The reticular layer consists of two sorts of protein: elastin fibres which give the skin its elasticity and collagen fibres which give the skin its strength. These fibres are held in a gel-like substance called ‘ground substance’. The elastin and collagen fibres form a strong network which gives us our youthful appearance.

As we age these fibres in the skin begin to harden and fragment; the network starts to break down and our skin starts to lose its elasticity and show visible signs of ageing. Blood circulation to the skin declines; nutrients do not reach the surface, resulting in sallow skin. The fatty layer beneath the skin grows thinner so we look more drawn as our bone structure is more prominent. The reticular layer is vital to our skin’s health and appearance and so it is essential that it is looked after in order to prevent the signs of ageing.

Blood Flow

The blood circulates through the body to all the cells, carrying vital nutrients and energy such as oxygen, glucose and other raw materials essential for the body’s health, maintenance and growth.

The vacuum action of microdermabrasion treatment assists in the stimulation of the micro-circulation near the skin’s surface. This promotes increased blood flow to the area which promotes collagen and elastin production in the skin as well as cell renewal (skin regeneration), aiding tissue repair and revealing smoother and fresher skin.

This diagram shows how the blood flows through the cells; first delivering nutrients and energy and then removing waste products such as carbon dioxide.

Blood is under high pressure as it flows through the capillary network forcing fluid out into the tissue and becoming tissue fluid. This fluid contains useful substances like oxygen and nutrients essential for the cells. Blood cells and large proteins remain in the capillary.

As the blood becomes deoxygenated pressure is reversed and some of the fluid containing waste products will re-enter the capillaries and be carried away.

Excess fluids, waste products and large molecules like proteins that were unable to re-enter the blood are taken up by lymph capillaries and carried to lymph nodes where the fluid is processed and enters back into the blood nearer to the heart.
BLOOD FLOW THROUGH THE SKIN

Normal body temperature is 37°C. The body will work to maintain this temperature. If body temperature starts to rise, blood will pass close to the skin to release some of its heat. When body temperature falls, capillaries are constricted and blood will pass through ‘shunt vessels’ deeper in the dermis instead, reducing the amount of heat lost through the skin.

Vaso-dilation happens when you are:
Hot – blood passes close to the surface – heat is released

Vaso-constriction happens when you are:
Cold – blood flows through shunt vessels away from the surface – heat is retained

SKIN TYPES

There are six basic skin types. However, a person’s facial skin can vary at different times during their life due to illness or hormonal imbalance.

Dry skin types
Dry skin is caused by under or inactive oil glands that do not produce enough sebum to keep the skin naturally hydrated. It usually has a dull appearance, feels dry and itchy and is sometimes sensitive. Dry skin must be hydrated regularly from the inside (drinking water) and outside with rich hydrating creams or lotions.

Oily skin types
Oily skin is caused by glands that produce too much sebum, resulting in skin that appears shiny and has large open pores. Oily skin types are prone to develop comedones (blackheads) and acne. Despite these drawbacks oily skin generally remains younger looking and remains suppler over time than other skin types. Oily skin benefits hugely from microdermabrasion with the application of light moisturisers.

Sensitive skin types
Sensitive skins can be dry, normal or oily and are characterised by their delicacy. Sensitive skin frequently reacts adversely to environmental conditions and often requires special treatment in order to remain in good condition. Sensitive skin benefits greatly from natural skin care products and treatments.

Normal skin types
Normal skin produces sebum at a moderate rate, resulting in a balanced state. Normal skin looks consistently plump, moist and vibrant. A great blessing but still requires no less attention. It benefits from regular cleansing, toning and moisturising.

Combination skin types
Combination skin is the most common skin type. Combination skin is frequently characterised by an oily T zone area that covers the forehead, nose and chin. While the skin around the cheeks, eyes and mouth is normal to dry. People with combination skin should assess their skin regularly and use different products on different areas of the face.
Mature skin types

Mature skin has the following characteristics: skin becomes dry as sebaceous glands become less active. Skin loses elasticity; fine lines and wrinkles appear. Skin appears thinner with broken capillaries, especially on the cheek area and around the nose. Facial contours become slack as muscle tone is reduced. Underlying bone structure becomes more obvious, as the fatty layer beneath the skin grows thinner. Blood circulation becomes poor, which interferes with skin nutrition making skin appear sallow. Due to the decrease in metabolic rate, waste products are not removed as quickly leading to puffiness of the skin. Mature skin must be hydrated well by drinking water regularly and using nourishing moisturisers.

SKIN COLOUR TYPES

The tone of human skin can vary from dark brown to nearly a colourless pigmentation, which may appear reddish due to blood in the skin. Europeans generally have lighter skin, hair and eyes than any other group, although this is not always the case. For practical purposes, six types are distinguished following the Fitzpatrick scale (1975). Skin colours are listed in decreasing lightness.

THE FITZPATRICK SCALE

<table>
<thead>
<tr>
<th>TYPE</th>
<th>ALSO CALLED</th>
<th>TANNING BEHAVIOUR</th>
<th>HAIR AND EYE COLOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Very light, also ‘Nordic’</td>
<td>Often burns, rarely tans</td>
<td>Tend to have freckles, red or blonde hair, blue or green eyes</td>
</tr>
<tr>
<td>II</td>
<td>Light or light skinned</td>
<td>Usually burns</td>
<td>Tend to have light hair, blue or green eyes</td>
</tr>
<tr>
<td>III</td>
<td>Light intermediate, or dark skinned European or ‘average caucasian’</td>
<td>Sometimes burns</td>
<td>Tends to have brown hair</td>
</tr>
<tr>
<td></td>
<td>Usually tans</td>
<td>Dark eyes</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Dark intermediate, also ‘Mediterranean’ or ‘Olive’</td>
<td>Sometimes burns, Often tans</td>
<td>Tends to have dark brown hair and eyes</td>
</tr>
<tr>
<td>V</td>
<td>Dark or ‘Brown’ Type</td>
<td>Naturally black-brown skin</td>
<td>Often has dark brown hair and eyes</td>
</tr>
<tr>
<td>VI</td>
<td>Very dark or ‘Black’ Type</td>
<td>Naturally black-brown skin</td>
<td>Usually has black-brown hair and eyes</td>
</tr>
</tbody>
</table>
MICRODERMABRASION – WHAT IS IT?

Microdermabrasion is a safe, controlled system of intense exfoliation and resurfacing using ultra fine crystals that rejuvenate the skin. The crystals work as a gentle abrasive on the skin to remove dead skin cells layer by layer. The irregular shape of the crystals helps to work on hard to reach areas, without any damage to the skin. The treatment is progressive meaning clients will continue to see results over the course of treatment.

The degree of epidermal abrasion can be varied by altering the crystal’s speed when impacting on the skin. The removal of the stratum corneum results in skin that feels instantly smoother and fresher, whilst promoting new skin and collagen growth. Over a course of treatment skin will be left ‘glowing’ and will feel rejuvenated.

The vacuum action draws away used crystals and dead skin cells and also works to stimulate the circulation and promotes increased blood flow to the area. The production of collagen and elastin is stimulated, which results in a firmer, more youthful looking skin.

Microdermabrasion can be used for all skin types on all areas of the body and face. SkinBase recommend a course of 8, usually performed every 7 to 10 days. People with acne or acne scarring might need more treatments and we recommend a monthly maintenance treatment after the course has finished to help maintain the results achieved. After the treatment, the skin may feel tight with mild redness. Therefore it is important that clients use a good moisturiser. These effects normally subside within 24 hours of treatment.
What are the benefits of using microdermabrasion over other methods of treatment?

There is minimal discomfort experienced during a microdermabrasion treatment and the patient is able to carry on with their normal day afterwards. Crystal microdermabrasion uses a completely inert and sterile compound with zero risk of allergic reaction.

- Eliminates possible adverse reactions often associated with chemical solutions
- Client can return to their normal lifestyle immediately after treatment i.e., no extreme reddening of the skin
- Can safely treat all skin colours and skin types
- Immediate visible results even after the first treatment, helps keep client motivated
- Helps treat early signs of ageing and offers an overall rejuvenation for aged skin
- Vacuum action offers improved elasticity and muscle tone of the skin and also stimulates fibroblasts for collagen production
- Enhances penetration of approved products after treatment
- Perfect for congested skin with open pores and comedones and acne prone skin
- Variable control allowing for deeper exfoliation of thickened blemished skin and acne scarring
- Successfully helps remove unwanted pigmentation marks
- Perfect for sun-damaged skin
- Total body exfoliation offers a cellulite treatment as the vacuum action helps with lymphatic drainage

Are there any risks associated with microdermabrasion?

Improper use or unhygienic conditions pose a risk when having microdermabrasion treatment, that is why we advocate the importance of good hygiene in the workplace. The MDPro uses disposable nozzles; eliminating any risk of cross-contamination between clients as the nozzle is the only component that will come into contact with the skin during treatment.

The Crystals

Crystals are made of Aluminium Oxide; a naturally occurring mineral. Sterile and non-toxic with no adverse skin contact reactions, we would however recommend a skin allergy test prior to treatment as a precautionary measure.

Aluminium Oxide is considered a low health risk by inhalation and industry standards treat any inhalation of this nature as a nuisance dust. The inhalation of any fine particle dust, for example artificial nail dust, may cause irritation and coughing if exposed to them over long periods. Aluminium Oxide contains no free silica which means it poses no respiratory risk from inhalation.
CRYSTAL SENSITIVITY – PATCH TEST

It is important to perform a skin patch test to check the client is not sensitive to the crystals employed. It is most unusual for a client to be sensitive to the crystals employed however a skin test should be performed prior to treatment on the back of the forearm. If the area becomes irritable or swollen do not proceed with treatment. If the client develops red marks on the skin after treatment it is normally due to the therapist applying too much pressure.

WHAT SKIN CONDITIONS CAN MICRODERMABRASION BE USED TO TREAT?

Anyone can benefit from microdermabrasion treatment. It improves the overall appearance of the skin giving skin a healthy glow and youthful appearance. Microdermabrasion is also extremely effective at treating a number of skin problems. It can be used on the face and body making it a good treatment for acne scarring on the back for example.

Acne & Acne Scarring -
Microdermabrasion works by removing the top layers of dead skin cells from the skin’s surface making it particularly effective in treating acne. Getting rid of the dead skin cells from the surface of the skin unclogs the pores reducing the chance of new spots developing.

Fine Lines and Wrinkles
Ageing Skin
The vacuum action of the microdermabrasion treatment works to stimulate the production of collagen in the skin. As we age elastin and collagen production starts to slow down. The combination of collagen stimulation and increased skin renewal will improve the condition of the skin’s surface smoothing out fine lines and wrinkles.

Dry and Dehydrated Skin
Uneven Skin Tone
Normally skin renews itself approximately every 28 days. Removing the dead cells from the top layers of skin, microdermabrasion speeds up the rate at which the skin would normally renew itself revealing new, fresh skin and giving a radiant glow.

Cellulite, ‘orange peel’ Effect
Microdermabrasion can’t cure cellulite however it will stimulate the circulation improving blood flow to the area. To improve the appearance of cellulite clients should drink plenty of water and exercise regularly.

Stretch Marks
Pigmentation and Blemishes
Microdermabrasion can vastly improve the appearance of pigmentation and stretch marks. The microdermabrasion treatment stimulates the area being targeted to produce more collagen and speed up the skin renewal process, improving skin condition and diminishing the appearance of stretch marks and discolouration of the skin.

Microdermabrasion treatment will not remove the stretch mark. However, regular treatment will show an improvement to the treated area making the marks less obvious. Scar tissue should not be treated until all the inflammation has disappeared from the area (6 months post surgery for example).
Regular treatment with microdermabrasion will help improve the appearance of stretch marks by creating a blending effect to the surrounding scar tissue, also reducing any pigmentation problems that often make the stretch mark more noticeable.

Hyper-Pigmentation and the Cause (Melasma)
Most obvious causes are the oral use of birth control pills or hormone replacement therapy, pregnancy or interaction with certain medications. Repeated sun exposure or over exposure also plays a part as does inflammation or trauma caused to the skin. Certain chemicals found in perfumes etc., can also result in pigmentation marks occurring. Regular microdermabrasion treatment will show significant benefits to sun-damaged skin and help remove unwanted pigmentation marks.

A course of SkinBase microdermabrasion treatments can achieve beneficial results in the treatment of pigmentation marks. Clients should be advised that a course of between 10-15 treatments might be needed. It is also imperative that the client is advised to wear a sun block cream at all times.

Please note microdermabrasion treatment cannot help clients with the vitiligo skin disorder.

Melasma and chloasma (darkening of the skin due to hormone changes) can be helped by microdermabrasion treatment. It will help the trapped pigment move up through the epidermal layers to be shed in its normal organised way. However, many treatments may be needed to improve the affected area.

HOW THE TREATMENT COURSE WORKS

Microdermabrasion is a progressive rather than aggressive treatment. The epidermal layers are removed gently and safely over a course of treatments. In a course, the treatment is performed every 7 to 10 days. This means that the stratum corneum layer that was removed in the previous treatment has not had the chance to rebuild and also the client’s tolerance to the treatment increases. Therefore, with each subsequent treatment, the intensity of the treatment can be increased in order to reach deeper down the layers of the epidermis to successfully remove acne scarring, lift pigmentation and smooth fine lines.

Generally a client will opt for a course of six treatments to be performed every 7-10 days to get maximum effect. After completing a course the client can then go on to have a monthly maintenance treatment to help them maintain the results achieved.

Clients with more problematic skin may need a longer course of treatment, however 15-20 treatments is considered to be a maximum, after which they must go on to a monthly maintenance program of one treatment every 4-6 weeks.
SECTION 3 - LEARNING OUTCOMES:

• You will have the ability to carry out a full client consultation prior to treatment
• You will know what the contraindications to microdermabrasion treatment are
• You will understand the aftercare required and the possible reactions to the treatment

CLIENT CONSULTATION

1. Check client’s suitability for treatment using the list of contraindications.
2. Carry out a skin analysis pinpointing any areas to avoid during treatment i.e., minor contraindications such as Telangiectasia (broken capillaries).
3. Pinpoint areas that require special attention such as acne scarring or pigmentation, open pores or uneven skin tone.
4. Suggest a treatment plan making sure you explain the cost, duration and frequency required for the course.
5. Explain to the client what the treatment will do and how it will feel.
6. Explain to the client how the skin might react. Although reactions if any are very minor, make sure clients are aware there may be some sensitivity.
7. Talk the client through the aftercare advice so they are aware of what they should be doing post-procedure to look after their skin.
8. It is vital the client understands the importance of using the correct home regime in between treatments and is committed to achieving results i.e., using the correct sun protection factors are crucial to avoid further pigmentation problems.
9. **ALWAYS COMPLETE A CLIENT RECORD CARD:**
   This will ensure special attention is drawn to their specific needs. Explain contraindications of treatment and ask the client to sign the record card.

Parents/Guardians (over 18) must sign the consultation card for children under 16 years of age
CONTRAINDICATIONS TO MICRODERMABRASION TREATMENT

MAJOR CONTRAINDICATIONS - Do not proceed

Pregnancy
An increase in hormones can affect the skin during pregnancy, this can cause pigmentation. For this reason we advise against microdermabrasion as the skin could react in an unexpected manner making the condition worse. Advise clients to use a good sunscreen when outside to help prevent the pigmentation occurring.

Cancer
We advise that you do not treat a client with Cancer, they should be in remission for at least 6 months prior to commencing a course of treatment. Microdermabrasion stimulates the blood flow and lymphatic drainage.

Grade 4 Acne
Clients with this level of acne should not be treated with microdermabrasion. If the skin is very congested with pustules and papules treatment would irritate the skin and spread bacteria.

“Roaccutane”
Roaccutane causes thinning of the skin, if your client is receiving Roaccutane treatment for acne, you must wait 6 months after discontinuing Roaccutane before performing microdermabrasion treatment.

Auto-immune disease
Used to describe a number of disorders where the body attacks its own cells and tissues, you should avoid treating a client suffering from an auto-immune disease.

Diabetes
Diabetes affects the nerves and circulation and the skin can take much longer to heal than normal. Clients must provide written permission from their GP before treatment can be carried out.

Impetigo
A contagious bacterial skin infection, do not perform microdermabrasion.

Rosacea
Rosacea cannot be treated with microdermabrasion.

MINOR CONTRAINDICATIONS - Proceed with caution and avoid affected areas

Eye Infections e.g. Conjunctivitis, Styes/Hordolea, Cysts
Skin Disorders e.g. Active Acne, Seborrheic Dermatitis, Herpes Simplex (cold sores), Eczema, Psoriasis
Keloid Scars
Telangiectasia (broken capillaries)
Raised Moles, Warts, Skin Tags
Cuts, Bruises, Abrasions

If you are uncertain or unable to identify a skin condition you should not treat the client and advise them to consult their GP.
AFTERCARE ADVICE
We recommend that clients adhere to the following advice after treatment

For 12 Hours after treatment:
No heavy Make-Up

For 24 Hours after treatment:
No swimming
No facial waxing

For 48 Hours after treatment:
No sauna, sun beds or sun exposure
No ‘Botox’, collagen injections or dermal fillers

For 72 Hours after treatment:
Do not use anti-ageing creams
Do not use AHA’s, Glycolics or Retinol.
Do not use exfoliating products, the newly abraded skin is receptive to any products applied, so the use of any exfoliants after treatment can irritate the skin.

At all times during a course of treatment:
SPF 15 minimum must be applied and exposure to U.V should be avoided.

Regular moisturiser applications are vital to replenish moisture and prevent the skin from becoming dry and peeling

Products must be between pH 4.5 and 7
Skin care products that contain a high percentage of botanicals and essential oils are UNSUITABLE for use after microdermabrasion treatment as some of the ingredients contained may cause an allergic reaction. Should this occur, there is a real danger of both the therapist and client thinking that it is the treatment they are allergic to, where it is actually the ingredients within the skin care preparations. It is important that products are used that replace or add moisture back to the skin to stop the skin becoming dry or peeling.

Botox/Dermal fillers
Allow 14 days before performing microdermabrasion, including any touch up injections, to allow botox/fillers to settle.

Men
Men should close shave the night before a treatment if the treatment is in the morning, or in the morning if the treatment is in the afternoon.

Laser Treatments
A course of laser treatments cannot run concurrently with a course of SkinBase microdermabrasion treatments. Please allow at least 2 weeks before commencing microdermabrasion after completing a course of Laser.
SECTION 4 - LEARNING OUTCOMES:

• Students will be able to identify the parts of the microdermabrasion machine and its functions
• They should be able to set up the equipment and check that it is in good working order
• Students will be able to select the appropriate treatment according to client’s skin type

SETTING UP THE SKINBASE MDPRO SYSTEM

1. Always check that your filter jar is empty of any used crystals before starting a treatment.
2. Make sure the handset is connected to the disposal jar with the silver tube and firmly connected at both ends.
3. Attach a clean nozzle and a new bottle of crystal to the handset and screw in firmly.
4. Connect the electrical lead, switch on at the power point and the starting switch on the panel. If you have a PAYG machine follow the instructions inside the machine.

ADJUSTING TREATMENT LEVEL

Make sure a bottle of crystal is connected to the handset and with your fore-finger over the hole in the nozzle, turn the regulator valve until you have your desired pressure for the facial.

Please make sure you understand correct pressure levels before commencing any Microdermabrasion treatment

PLEASE NOTE: UNDER NO CIRCUMSTANCES SHOULD THE METAL CASING BE UNSCREWED AND LIFTED WITHOUT FULLY DISCONNECTING FROM THE MAINS SUPPLY.
TREATMENT LEVELS

The following descriptions provide a guideline to selecting an appropriate treatment level for your client.

LEVEL ONE - 0.3 bar
This level should be used by newly trained therapists until they are confident about how light their strokes should be. Level one allows gentle all-over exfoliation and should always be selected for the client’s first treatment. Always use level one when performing microdermabrasion around the eye (feathering action).

LEVEL TWO - 0.4 bar
This level should be gradually selected when working on acne scars or more thickened skin. No higher than this level for black and asian skin types see Fitzpatrick Scale on page 23.

LEVEL THREE - 0.5 bar
This level is only to be used on clients toward the end of their treatment course when the skin is more tolerant. Used for working on acne scars, pigmentation, fine lines and wrinkles. Also for body exfoliation, stretch marks and cellulite.

LEVEL FOUR - 0.6 bar
Use for body treatments only. Never to be used on the face
SECTION 5 - LEARNING OUTCOMES:

- Demonstrate the ability to operate the machine and apply the treatment safely and effectively for the advised treatment time
- Demonstrate the ability to work within time limits acceptable to industry

METHOD OF TREATMENT

1. Position client semi-reclining
2. Ensure client’s hair is away from the face
3. CLEANSE client’s skin thoroughly
   – must use a gel/foaming cleanser
4. Skin must then be completely dry
5. Stretch the skin with thumb and middle finger
6. Hold the handset as if it were a pen, gently move in a sweeping action across the facial area (see diagram on following page)
7. BASE - Perform a gentle exfoliation to the entire facial area and neck
8. TARGET - On completion of a gentle exfoliation you can return to the areas that need further attention such as acne scarring, pigmentation marks, fine lines and wrinkles.
9. On completion of treatment, wipe away any residue of crystals that remain on the skin using damp cotton pads (cold water)
10. Tone using gentle toner
11. Mask optional
12. Moisturise
13. Apply SPF 30
TREATMENT APPLICATION DIRECTIONS

The diagram demonstrates the directions you should work in when treating the face.

The dashed lines around the delicate eye area are to suggest quick, light strokes. Each arrow (stroke) is approximately 4cms in length.

EYE AREA
• Use a feathering action
• Always use Level 1 around the eyes

Tips for treatment

1. You should try to understand the client’s skin and how it reacts before becoming too adventurous. Quite often therapists want to impress the client so much on their first treatment that they apply too much pressure and work too aggressively. This results in the client’s skin actually becoming sensitive and if the skin has been dragged with too much pressure applied red stripes can be evident. This is due to the therapist being too ambitious and not understanding the client’s skin. It is vital that therapists master the gliding movement of the nozzle across the skin in a gentle and controlled manner.

2. Always keep the pressure light during the first treatment then slowly progress to higher levels and a more aggressive treatment as the course progresses.

This ensures the client’s skin becomes used to the treatment and the client will understand what is happening. A client that goes home with red stripes or red, sensitive skin will be a very unhappy client and will probably cancel the course of treatments because the therapist has failed to explain or perform the treatment properly.

3. N.B. Always use a light vacuum on Black and Asian skin, no higher than level 2 on skin types V and VI of the fitzpatrick scale

4. The secret of a treatment’s success lies in the pressure of the strokes used. Light quick strokes should be used for a gentle exfoliation (feathering around the eyes), slower strokes to concentrate on problem areas. Areas exhibiting minor telangiectasias (broken capillaries) should be treated very gently by performing light quick strokes over the area. Strokes should never be longer than 4cms.
SECTION 6 – LEARNING OUTCOMES:

• You will gain an appreciation of the health and safety issues concerned with treatment and equipment maintenance

• You will be able to accurately update client record cards

VITAL MACHINE MAINTENANCE

• After every treatment – turn off the system and unplug the power cable from the mains supply and the casing

• Remove the crystal cartridge and tap the handset onto the palm of your hand to remove any residue crystals in the handset chamber. Each time you change the crystal bottle, shake out any excess crystals that may be in the inner canal of the handset. This ensures the inner chamber of the handset is kept clear at all times

• Remove and dispose of the nozzle

• Empty disposal jar after EVERY treatment, unscrew the disposal jar from the lid and empty the used crystals carefully and dispose of responsibly.

• Make sure the disposal jar is replaced securely and firmly and is not cross threaded (if it is not secure the vacuum power will be decreased)

• Tidily wrap up all tubing and attachments into the case and make sure everything is clean ready for the next use

IMPORTANT:

The plastic disposable filter jar MUST be changed at least every 80 treatments. Failure to connect a new jar will cause the vacuum power to drop and can cause crystals to be sucked from the paper filter in the jar directly into the pump inside the unit, which may seriously damage your machine and invalidate any warranty.
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