
Unit Specification

UBT276 – Remove or fade tattoos using Q Switched Laser systems

Unit reference number: J/616/8607

Level: 5

Guided Learning (GL) hours: 109

Overview

The aim of this unit is to develop the learners' underpinning knowledge, understanding and practical skills to enable them to provide a professional tattoo fading or removal treatment. Learners will know how to recognise different tattoo types and identify those clients suitable for treatment, at the same time as developing an understanding of the lasers and wavelengths used for the treatment of different ink pigments alongside other factors that may affect the rate of tattoo clearance.

Learning outcomes

On completion of this unit, learners will:

- LO1 Know safety considerations when providing removal or fading of tattoos
- LO2 Understand how to provide treatments to remove or fade tattoos
- LO3 Know the relevant anatomy, physiology and pathology for removal or fading of tattoos
- LO4 Be able to consult, plan and prepare for removal or fading of tattoos
- LO5 Be able to provide treatments to remove or fade tattoos

Unit content

LO1 Know safety considerations when providing removal or fading of tattoos

Safety of product and equipment sourcing

Taught content

- Ensure Q Switched Laser technology and equipment used conforms to Electrical Equipment (Safety) Regulations 1994/2016 as applicable
- All Q Switched lasers must comply with current standards (e.g. BS EN 60601-2-22:2013 for medical lasers) including, but not limited to, having labels in accordance with standards, identifying them, their wavelength or range of wavelengths and the maximum pulse fluency/energy/power of the radiation emitted.
- The need for warning labelling on Q Switched Laser equipment and the importance of understanding said labelling
- Understand how to gain verification of legality
- Ensure products used are those approved by EU Cosmetics Regulations for cosmetic use by practitioner
- Current professional insurance policy requirements for working at this level
- Check with supplier/manufacturer for guidelines

Insurance guidelines

Taught content

- Insurance policy requirements to be met to ensure insurance is valid – legal responsibilities of laser practitioner
- The importance of undertaking the Core of Knowledge training to meet with insurance guidelines
- Requirements for sensitivity testing prior to treatment
- Acquiring informed client consent and signature before every treatment
- Providing written post care information
- Ensuring the practitioner is working within scope of practice

Hygiene considerations

Taught content

- Use of suitable sterilisation and sanitisation for equipment and surfaces
- Use of single use items as appropriate such as disposable gloves (latex free), disposable hair cap, band or net (if required), applicators, cotton wool, couch roll, clean laundered towels
- General hygiene – i.e. washing of hands before and after treatment, alcohol free hand gel, clean towels, use of disposables wherever possible
- Disinfectant or sterilisation – use of heat or chemical methods, bactericides, fungicides, UV cabinet for storage
- Equipment – only used for intended purpose, safe usage/safe handling/storage/visual checks, correct disposal of contaminated equipment and waste products
- Why it is important to avoid direct and indirect cross-infection by working safely and hygienically
- Methods of cleaning, disinfection and sterilisation to control and prevent infection
- How to utilise rotas and sign off sheets to keep track of cleaning

Hygiene and infection control

Taught content

- Knowledge of infection control, bacteria, virus, fungi, parasites, prevention of cross-contamination and disease transmission procedures, levels of infection control, personal immunisation (Hepatitis B), single use barrier consumables for protection against blood borne viruses (BBV) and Methicillin-resistant Staphylococcus aureus (MRSA)

Features, benefits and use of treatment products

Taught content

- Know the ethical methods of sourcing, purchasing and storing regulated treatment products including expiration dates
- The need to have knowledge and understanding about treatment products including the features and benefits
- The safety and legal reasons for using products that are licensed and meet EU standards and the outcome of using products which are not properly tested or contain banned substances
- The use of Material Safety Data Sheet (MSDS) in relation to tattoo fading or removal treatments

Hazards and risks

Taught content

- Identification of hazards and risks through risk assessment
- Principles of risk assessment and management
- Putting procedures in place to ensure they are minimised
 - Proper training for all staff
 - Protocols to follow during consultation and treatment
 - Written post care for client
 - Adherence to manufacturers' guidelines
 - The hazards and risks which exist in the workplace and the safe working practices which must be adhered to
 - The causes and hazards of accidental exposure to clinical waste and the legal requirements for waste disposal and the benefits and requirements of clinical waste disposal contractors
 - The causes and hazards of accidental exposure to optical radiation and the importance of wearing personal protective equipment (PPE)
 - Understand different types of goggles and their use with different wavelengths
 - The basic principles of the maximum permissible exposure levels and how to keep exposure of unprotected skin and eyes below these levels
 - The importance of regularly evaluating hazards within the salon/clinic
 - Effects of exposure and health hazards, including eye, skin and tissue, which can arise from the use of lasers
 - The hazards from optical radiation equipment, including optical beams, electrical hazards, equipment malfunctions, fire risks and smoke plume effects
 - Understand the hazards to clients and the methods of minimising risks such as skin blistering or pigmentation changes
 - Understand the hazards associated to the different staff groups and methods for minimising risks
 - Understand the hazards from reflections or absorption of the optical radiation beam with respect to instruments, or reflective surfaces, or other equipment
 - Understand the hazard control procedures, including the use of personal protective equipment (PPE)
 - Adverse incident reporting

Suppliers' and manufacturers' instructions for safe use

Taught content

- Personal responsibilities for health and safety as defined by any specific legislation covering the practitioner job role and the role and responsibilities of the employer or salon/clinic owner
- Personal responsibilities for following organisational procedures for the delivery of laser treatments for removing or fading of tattoos
- Risks for clients, practitioners and people outside the room
- Maintain own responsibilities for health and safety throughout the treatment
- The importance of understanding the warning labelling on Q Switched Laser equipment
- The importance and reasons for adhering to organisational and treatment protocols
- The necessary environmental conditions for treatments such as heating and ventilation and why these are important
- Fire safety regulation, health and safety regulation
- Instrument and equipment safety, servicing and record-keeping
- Moving and handling
- Accounted for all factors in laser controlled areas such as:
 - Enclosed area
 - Lockable entry and exit points
 - Signage
 - Minimum reflective surfaces
 - Suitable window coverage
 - Adequate fire precautions and suitable services
 - Adequate ventilation and extraction
- Knowledge of safety management:
 - Be familiar with the basic principles of the administration of safety
 - Strict adherence to safety protocols including eye protection
 - Be aware of the relevant legislation, standards and hazard classifications relevant to lasers for removal or fading of tattoos
 - The responsibilities under local authority licensing regulations for self and premises and the importance of following local rules, where applicable
 - Understand the role of the laser protection adviser, laser protection supervisor, authorised users and assisting staff
 - Understand the importance of appointing a Laser Protection Advisor
 - Be aware of the principles and requirements of equipment quality assurance processes and procedures
 - Be aware of the meaning of the warning labels and signs associated with optical radiation equipment
 - Understand the general principles of emergency action and how and when to report accidents

Treatment of minors

Taught content

- The age at which an individual is classed as a minor and how this differs internationally and how treatment should only be provided for clients over the age of 18

Timing of treatments

Taught content

- Identify and understand commercial timings for treatments
- Recognise variations in timings depending on skin reaction time and recognised influencing factors

Contra-indications that would prevent or restrict treatment

Taught content

- Prevent – certain photo-sensitive medication and herbal remedies as described by the British Medical Laser Association (such as tetracycline antibiotics, anti-arrhythmic drugs, St John's wort, gold medications), HIV, inappropriate pigment type and colour, keloid scarring, kidney disease, lupus, lymphatic system disorders, melanoma, melasma, micropigmentation i.e. eyeliner, oral and topical retinoids, oral and topical steroids, oral and topical medication for photo-dynamic therapy, pregnancy, pigmentary disturbance such as vitiligo, suntanned or fake tanned skin, uncontrolled diabetes, UV tattoos
- Restrict – acne, eczema, epilepsy, diabetes – for lower leg treatment, infectious and contagious disease, non-melanoma skin cancers (basal cell carcinomas – BCCs and squamous cell carcinomas – SCCs, psoriasis)
- Additional care should be taken – thyroid treatment as thyroxin affects temperature sensitivity, if taking aspirin

Referring contra-indicated clients

Taught content

- Actions to take in relation to specific contra-indications when referring clients
- Knowledge of organisation protocol for not naming specific suspected contra-indications when encouraging client to seek medical advice
- Encourage clients to seek medical advice without alarm or concern
- Reasons for not diagnosing suspected contra-indications due to professional status, acknowledging the need for medical training to be able to diagnose

When to consult with other aesthetic professionals

Taught content

- Recognise when additional information is needed from other clinicians involved with the client and how this can be obtained in compliance with confidentiality and consent guidance and in line with current data protection legislation
- Demonstrate an understanding of when to and how to request additional advice from other clinicians treating the client, when applicable, in line with current data protection legislation

LO2 Understand how to provide treatments to remove or fade tattoos

Treatment Planning

Taught content

- Identify client needs, expectations, anticipated costs, and treatment objectives
- Agree realistic outcomes against client expectations, discuss expected sensations and relevant potential risks
- Know how to complete a consultation taking into account the client's diverse needs and importance of agreeing the treatment plan that meets the client's need
- Contra-indications that prevent or restrict treatment
- Identification and discussion of skin health, skin type, including Fitzpatrick skin type and skin conditions presenting and individual lesions or concerns, to assist in choice of the appropriate treatment and to identify realistic treatment outcomes
- Frequency, duration and potential cost of treatments recommended to achieve treatment outcomes
- Pre and post treatment advice including possible contra-actions, healing process, recommended skin care/post care and restrictions to ensure client is suitable for treatment
- Treatment plan should be clearly agreed between the client and practitioner and recorded on the consultation documentation
- The reasons for identifying the client's medical history, previous treatments, sun exposure and types of tattoos, pigments and pigment colours
- The reasons for identifying if the tattoo is a cover up and pigment colours to be treated underneath, the age of the tattoo
- How to match treatment specifications and variables to suit skin classifications and different types of tattoos and colours
- Why it is important to carry out a test patch prior to initial treatment
- The reasons for providing written aftercare instructions immediately after test patch and why the client must sign for receipt of these
- The legal significance of gaining signed, informed client consent to treatment
- The legislative requirements for storing and protecting client data
- Why certain skin types may or may not be treatable
- Why selecting an appropriate size of area to be worked on at any one time is important, to avoid immune system response delay
- Why it would not be possible to work all around an arm or leg, due to the possibility of excessive swelling
- Explain to client that the tattoo may only fade and recognise at what point the tattoo has faded as much as it is likely to
- Length of time between treatments – minimum 6 weeks for first two treatments and 8 weeks and upwards for subsequent treatments

Factors to consider when treatment planning

Taught content

- Previous tattoo removal treatments – details of type of treatment, how frequent, dates the treatments were received, to ensure enough time has passed for internal trauma to have healed
- Satisfaction and results; dissatisfaction could indicate client with unrealistic expectations
- Legal aspects of responsibility of the practitioner
- Sun exposure history and use of SPF
- How many treatments are required for different tattoo types
- The need for appropriate treatment intervals
- Why the results of some treatments may be more successful than others
- The factors influencing clearance rate (such as age of tattoo, size, design complexity, body site, ink density, smoking status etc.)
- Medical history to ensure client is safe for treatment or if medical referral is required

Assessing skin characteristics

Taught content

- Assessed through questioning at consultation and observation of skin
- How to assess the client's skin classification using the Fitzpatrick and ethnic colour scales
- Understand what the Fitzpatrick Skin Typing is used for:
 - Level of pigmentation in the skin for skin types I to VI
 - Estimate skin tolerance to UV light and the degree to which a client's skin will burn and tan
- Understanding the consequences of inaccurate identification of client's skin type according to the Fitzpatrick scale
- Understand the different side effect profiles for each skin type and the appropriate wavelengths to use

Treatment advice to provide to the client

Taught content

- Understand the reasons for explaining the treatment procedure to the client
- Explain and agree achievable outcomes based on the assessment of the tattoo to be treated e.g. pigment colours
- Explain the physical sensation created by the treatment to the client:
 - Physical sensation is likened to a rubber band snapped on the skin, hot fat spitting at the skin repeatedly or a rapid succession of pricks or scratching sunburn
 - Tattoo removal treatments on areas with more fat like the arms and buttocks are generally not as painful as areas where there is less fat or close to a bone like the neck, ankle or finger
 - Post treatment physical sensation
 - Day 1 – erythema and redness like moderate sunburn with minor swelling, possibly some pin point bleeding

- Day 2 – erythema and mild swelling often starts to subside
- Day 3 – as day 2 and skin appears pink
- Day 1-3 – skin may feel dry and tight, moderate flaking might take place, erythema and redness like moderate sunburn, minor swelling and blistering can occur
- A whitening effect can be seen immediately post treatment, localised redness and swelling may also be seen, petechiae may be present
- Blistering can occur and can take anywhere between 4-10 days to fully heal
- Scabbing/crusting will occur and can take approximately 4-10 days to fully desquamate; skin could feel very dry, tight, and potentially itchy during this phase
- Bruising (more common with 532nm) will resolve within 7-12 days post treatment
- Full healing should be seen within 14 days
- Hypo/hyper-pigmentation can occur, sun avoidance is essential, pigmentation changes generally resolve within 12 months but can be permanent
- Darker skin types are more vulnerable to pigmentation changes within the skin
- Scarring can be observed – this tends to occur when the client has not adhered to post treatment care or infection has been present
- Advise all physical sensations and effects post treatment do depend on type of device used, technique and individual skin characteristics
- Possible contra-actions – what they are, why they appear and how long they may last
- Understand and advise clients of post treatment aftercare in accordance with manufacturers' instructions
- Provide post treatment aftercare advice, to include:
 - Treatment area must be cooled pre and post treatment to minimise redness, swelling and to reduce client discomfort
 - Post treatment product must be applied to area to be dressed if skin is broken
 - Hot baths/showers/heat treatment/perfumed products must be avoided for 24-48 hours post treatment – treatment area should be pat dried
 - If skin is broken, all perfumed/cosmetic products must be avoided until skin has healed
 - Area must be dressed with paraffin-based gauze if blisters are present to prevent friction and to protect against infection
 - Make-up should not be applied whilst skin is healing
 - If area is presenting signs of infection the client must seek medical attention immediately

Pain threshold and sensitivity variations

Taught content

- Understanding inflammatory response of the skin
- Recognising skin types and areas that are more sensitive, fragile and reactive to treatment
- Recognising skin types that are more prone to an exaggerated inflammatory response resulting in hypo or hyper pigmentation such as Fitzpatrick 4-6

Test patch performance prior to treatment

Taught content

- Follow supplier/manufacturer instructions for recommended test patch
- Follow supplier/manufacturer instructions for recommended time between test patch and tattoo removal/fading treatment
- Test patch prior to treatment
 - Test patch performed during initial consultation after client has agreed and signed informed consent, client must sign test patch forms if separate to main consultation form
 - Test patch must be conducted a minimum of 1 week prior to treatment commencing
 - Follow supplier/manufacturer instructions for recommended time between skin test and for each skin type and condition as they may vary
 - It is used to determine skin reaction and starting treatment parameters
 - Written aftercare to be provided to and signed for by the client following test patch
- A new test patch must be carried out on all different pigment types within the tattoo

Cleansing the skin prior to treatment

Taught content

- To remove all make-up, oils and debris ensuring a clean surface is worked upon to reduce risks of infection
- Ensure the area to be worked in is cleansed with non-alcohol wipes and left dry

Basic principles for the removal or fading of tattoos

Taught content

- The characteristics of light and how it interacts with skin and pigment colours
- The electromagnetic spectrum
- The specifications, variables and terminology of lasers in relation to treatment practice
- Principles of maximum permissible exposure and nominal ocular hazard distance
- The effects of laser light on the eye and skin
- Awareness of hazards to eye and skin from accidental exposure and reflection
- Knowledge that various wavelengths will penetrate skin and eye tissue differently, depending on diffusion properties
- Optimisation of clinical outcomes using appropriate devices and treatment parameters
- Specifications and variables such as wavelengths, difference between Active and Passive Q Switched Lasers, difference between millisecond (ms), nanosecond (ns) and picosecond (ps) pulses
- Power, energy, fluency, pulse duration, pulse repetition rate, spot size
- What effect the laser has on the body and the ink and how the body deals with it

Fundamentals of optical radiation devices and their interaction with tissue

Taught content

- How the different types of optical radiation are produced, what types of active media are used, and emission modes and delivery systems
- The characteristics of optical radiation emitted from different types of equipment as well as radiation–tissue interactions
- The intended purpose of the optical radiation equipment
- Different classes of lasers
- Understand the effects of optical radiation exposure to eyes, skin and other tissue

Types and purpose of equipment used for tattoo removal and fading

Taught content

- Q Switched Laser technology and the difference between active and passive Q Switch pulses and ‘picosecond’ lasers
- The different types of Q Switched Laser equipment to treat different pigments such as Ruby (694nm), Alexandrite (755nm), Nd:YAG (1064nm), KTP Frequency doubled Nd:YAG (532nm)
- Difference between long pulse, nanosecond and picosecond technology
- Different types of tattoos such as professional, amateur, traumatic, cosmetic, semi-permanent, medicinal and the pigment distribution for each
- Different types of pigments (such as metal salts, organic inks, acrylic dyes, cosmetic etc.) and the effect on treatment response
- Pigment colours that can and cannot be treated, and the appropriate wavelengths to use for each colour

Alternative methods for tattoo removal or fading

Taught content

- Alternative methods of tattoo removal such as chemical extraction, ablative lasers, salabrasion, cover-up tattooing

Preparation of equipment and products for treatment

Taught content

- Understanding how to set up and work within a controlled environment, how to prepare equipment in a clean and ergonomic manner to prevent strain to the practitioner and to assist in the smooth application of treatment, e.g. safety, time management, hygiene, organisation, timing of treatment delivery, professionalism
- Importance of selecting appropriate resources before start of each treatment
- Importance of having correct products and equipment available as recommended by supplier/manufacture
- Understanding why appropriate Personal Protective Equipment (PPE) is prepared and used

Selection of tattoo removal or fading products and equipment

Taught content

- Selection and use of equipment, duration, intensity and technique of application according to:
 - Type of tattoo
 - Type of pigment and pigment colours
 - Treatment objectives – removal or fading
 - Skin characteristics – adaptations for Fitzpatrick scale, level of sensitivity, thickness of skin, epidermal thickness
 - Areas to be treated – arm, leg, back, neck or face

Method of application

Taught content

- How to work systematically and methodically, avoiding excess treatment overlap across the areas to be treated
 - Plan application start and end point
 - Reason for application sequence protocol
 - Reasons for systematic and methodical application
 - Problems associated with overlapping and post procedural marking to the skin

Adaptations to treatment

Taught content

- Adapt application by omitting treatment to pre-existing lesions i.e. skin tags, moles
- Different skin (epidermal and dermal) depths and sensitivity, different treatment objectives, different healing capacity, different Fitzpatrick skin types
- Treatment progression

Areas to avoid

Taught content

- Avoid treatment over the eyelids, inside the orbital bone area, also on the palms of hands and soles of feet, pustular lesions, moles, skin tags

Limitations of treatment

Taught content

- The types of tattoos that cannot be removed for example due to site of tattoo – cosmetic eyeliner application
- Where fading rather than removal is the only realistic option

Benefits and effects of tattoo removal or fading treatments

Taught content

- Benefits/effects
 - Non-surgical procedure
 - Minimal recovery time
 - Treatment specificity – individual parts of tattoos may be removed/faded
 - Safe
 - Understand release of growth factors as part of the wound healing mechanism due to tattoo removal or fading treatment
 - Understand stages of wound healing
 - Wound, haemostasis
 - Inflammation
 - Proliferation
 - Remodelling – maturation
 - Visible effects
 - Fading or removal of unwanted tattoo

Effects and risks associated with the treatment

Taught content

- Permanent pigmentation changes in skin due to failure to adhere to pre and post care instructions, incorrect wavelength used for skin type
- Scarring due to a failure to care appropriately for treatment area or infection post treatment
- Colour shift (semi-permanent inks)
- Risks, as above plus:
 - Infection swelling
 - Blistering
 - Petechiae
 - Nettle sting reaction (1064nm)
 - Erythema
 - Temporary whitening

The consequences of poorly-performed treatments

Taught content

- Implications of not applying the laser treatment at the correct angle such as holding the laser pen at incorrect angle and distance
- The possibility of overlap

Contra-actions which may occur

Taught content

- Understand contra-actions which may occur, how to deal with them and what advice to give to clients:
 - Temporary whitening of the skin
 - Erythema
 - Excessive discomfort
 - Oedema
 - Urticaria (1064nm)
 - Petechiae
 - Pin point bleeding
 - Blistering
 - Pigmentary changes (post-inflammatory hyper/hypo-pigmentation)
 - Infection risk
 - Scarring

Post-treatment products

Taught content

- Understand the types of post-treatment products available and why they are necessary

SPF and UVA specific sun protector

Taught content

- Avoiding UV exposure
- Moles to be protected by a sunscreen at all times
- Why it is important to use a minimum of a UVB SPF30 and UVA-specific sun protector post treatment after sufficient healing time has occurred
- Knowledge of SPF rating system and why high % of block is required to protect the skin after tattoo removal or fading i.e.:
 - SPF 15 = 93% UVB block
 - SPF 30 = 97% UVB block
 - SPF 50 = 98% UVB block
- Knowledge of UVA specific sun protector rating – star rating
- The importance of re-applying the product

Preventing infection and promoting healing

Taught content

- Understand the products necessary to prevent infection and promote healing, how they should be used before and after tattoo removal treatments
- Use of PPE (personal protective equipment) and single use items
- Knowledge of all appropriate products and use in line with supplier/manufacture protocols to promote healing
 - Calming products post treatment – anti-inflammatory effects
- Post treatment aftercare
 - Avoid touching the area treated, avoid hot baths and showers for at least 24 hours
 - Avoid vigorous physical exercise for 24 to 48 hours
 - No sun exposure for a minimum of 4 weeks prior to treatment and advise to use sunblock or avoid any sun exposure on the treated area for at least 2 weeks after treatment
 - Provide aftercare advice on application of any professional products to aid healing e.g. cooling area with cold packs, soothing aftercare lotion
 - Blisters may form in the area followed by a scab or thin crust, keep clean and dry and allow to heal naturally, any scabs or crust which form should not be removed
 - No lotions or creams to be used on open skin as may increase risk of infection
 - Massage area once fully healed as this may help disperse pigment
 - Skin can develop temporary lightening (hypo-pigmentation) or darkening (hyper-pigmentation) after laser treatment, both can be made worse by sun exposure
 - Pigment changes generally resolve themselves but may be permanent

Treatment progression and maintenance

Taught content

- Recommendations for frequency of treatment depending on type of tattoo removal/fading treatment and treatment objectives, changes to treatment timing and techniques as treatment progress, homecare

LO3 Know the relevant anatomy, physiology and pathology for removal or fading of tattoos

Structure and functions of the skin in relation to removal or fading of tattoos
<p data-bbox="204 371 392 405">Taught content</p> <ul style="list-style-type: none"> • Epidermis – stratified epithelial tissue, stratum germinativum, stratum spinosum, stratum granulosum, stratum lucidum, stratum corneum • Cell structure and types in the skin, mitosis, epidermal lipidity and hydration, epidermal tissue differentiation, keratinisation, natural desquamation and melanin synthesis • The defensive role of the epidermis and the importance of the natural barrier function (NBF) and implications of compromised NBF • The role of melanocytes, keratinocytes and fibroblasts in promoting and rejuvenating healthy skin • Melanogenesis to include post inflammatory hyper-pigmentation (PIH) plus causes and recognition of hypo- and hyper-pigmentation, pigmentated lesions, recognition and causes i.e. vitiligo, solar/seborrheic keratosis, actinic keratoses, lentigines, ephelides, chloasma, melasma, poikiloderma of civatte, skin cancers • Dermis – blood/lymph supply, papillary layer, reticular layer, extra cellular matrix-collagen, elastin, dermal cells mast cells, fibroblasts macrophages and neutrophils • Extra cellular matrix development, function, degeneration and regeneration including importance of collagenase and elastase in the wound healing process • Hypodermis – subcutaneous layer, adipose tissue, adipocytes • Functions of the skin – secretion, heat regulation, absorption, protection, elimination, sensation, vitamin D production, melanin production, understand the process of keratinisation • Basic skin types: normal, oily, dry, combination <ul style="list-style-type: none"> - Normal – fine texture, no visible pores, smooth, supple, flexible - Oily – shiny, slight thickening, sallow, coarse texture, enlarged pores, congestion, comedones - Dry – lacks moisture, dry to touch, flakiness, fine texture, thin, tight, small pores, broken capillaries, ageing - Combination – combination of two or more skin types, usually oily T-zone, normal or dry on cheeks • The inflammation process including PIH • The impact of compromised healing process and how to recognise and respond to it • Types of collagen 1, 3 and 7 • Vascular lesions and common skin disorders i.e. acne rosacea, telangiectasia, cherry angioma, Campbell de Morgan spots, spider naevus, sebaceous hyperplasia and keratosis pilaris

Principles of controlled wound healing in relation to removal or fading of tattoos

Taught content

- The uses and implications of controlled wound healing to the practitioner
- Principles of inflammation and healing devices of the skin – basic principles of controlled wounding for removal or fading of tattoos, wound healing is a complex and dynamic process of restoration of skin cell structures and tissue layers
- Influential factors in the efficiency of wound healing responses
- The 4 principles and processes of wound healing – hemostasis, inflammation, proliferation, remodelling; actions of arachidonic acid cascade, Merkel and Langerhans cells, red and white blood cells, the clotting process, platelets, fibrin clots, types and roles of growth factors in the healing response, re-epithelialisation, reformation and building of the basement membrane, mitosis leading to epidermal regeneration, rebuilding of the extra cellular matrix and early collagen; formation characteristics of type 3 collagen, collagen remodelling and the conversion of collagen from type 3 to type 1. Characteristic of collagen type 1
- Phases of skin healing – haemostasis instant phase, inflammatory phase (occurs immediately following the injury and lasts approximately 6 days), fibroblastic phase (occurs at the termination of the inflammatory phase and can last up to 4 weeks), scar maturation phase (begins at the 4th week and can last for years)
- Factors which interfere with wound healing/trauma – initial or repetitive, scalds and burns (both physical and chemical), animal bites or insect stings, pressure, vascular compromise, arterial, venous or mixed, immunodeficiency, malignancy, connective tissue disorders, nutritional deficiencies, psychosocial disorders, adverse effects of medications, stress

Structure and function of circulatory and lymphatic systems in relation to removal or fading of tattoos

Taught content

- Circulatory system:
 - Functions of blood – transport, regulation, protection, clotting
 - The structure of veins, venules and capillaries
 - The structure of arteries, arterioles and capillaries
 - Main arteries of the face and head
 - Common carotid, internal carotid, external carotid, occipital, facial, maxillary, lingual, superficial temporal, superior thyroid
 - Main veins of the face and head
 - External jugular, internal jugular, common facial, anterior facial, maxillary, superficial temporal, occipital
 - Main arteries of the body
 - Aorta, common carotid, subclavian, splenic, right and left iliac, renal artery, hepatic artery
 - Main veins of the body
 - Superior vena cava, inferior vena cava, splenic vein, right and left iliac vein, renal vein, hepatic vein, hepatic portal vein, subclavian
 - Main arteries of the arm

- Subclavian, common carotid, brachial, ulnar, radial, deep palmar arch, superficial palmar arch, digital
- Main veins of the arm
 - Axillary, brachial, basilic, cephalic, subclavian, palmar digital
- Main arteries of the leg
 - External iliac, femoral, popliteal, anterior tibial, posterior tibial, plantar arch
- Main veins of the leg
 - Long saphenous, short saphenous, dorsal venous arch, femoral, popliteal, anterior tibial, posterior tibial
- Blood composition – erythrocytes, leucocytes, thrombocytes, plasma
- Circulation – heart, pulmonary circulation, capillaries, systemic circulation
- The process of blood clotting – platelets, thromboplastin, prothrombin, thrombin, fibrinogen, fibrin, calcium
- Lymphatic system:
 - Functions of the lymphatic system – fluid distribution, fighting infection, transport of fat
 - Functions of lymph nodes – filter toxins, clean lymphatic fluid, produces antibodies and antitoxins, produces lymphocytes
 - Position of lymph nodes
 - Face – occipital, mastoid, superficial cervical, deep cervical, parotid, buccal, submental, submandibular
 - Body – thoracic duct, right lymphatic duct, axillary, supra-trochlear, inguinal, cisterna chyli, popliteal, thymus gland, lacteals, spleen, thymus gland, superficial and deep cervical
 - Oxygen and nutrition carried in blood
 - The interaction of the lymphatic and circulatory systems
 - The relevance of the lymphatic and circulatory systems to tattoo removal or fading treatments
 - How the lymphatic system deals with ink

The principles and functions of the excretory system in relation to removal or fading of tattoos

Taught content

- The excretory system and the effects on the skin/body conditions which may affect the client receiving tattoo removal or fading treatment
- The excretory system – kidneys, ureter, bladder, urethra, lungs, large intestine, liver, skin
- The processes of excretion
- The relevance of the excretory system to tattoo removal or fading treatments

Common diseases and disorders and relevant terminology of the skin

Taught content

- Allergic reaction bruise, benign, bulla, crust, erythema, excoriation, fissures, haemangioma, hyperaemia, inflammation, keloid, macule, malignant, papule, pustule, nodule or cyst, oedema, scales, scar, tumour, ulcer, vesicle, weal, weeping, chilblains, couperose, telangiectasia, comedones, crow's feet, hyper-keratosis, milia, pseudo folliculitis, urticaria, hyper-pigmentation, hypo-pigmentation, atopic eczema, atopic dermatitis, psoriasis, acne vulgaris, acne rosacea, boils, carbuncles, folliculitis, impetigo, herpes simplex, herpes zoster, warts, verrucae, candida, tinea corporis, albinism, chloasma, dermatosis papulosa nigra, ephelides, lentigo, leucoderma, naevae, papilloma, port wine stain (capillary naevus), vitiligo, sebaceous cysts (steatoma), skin tags (fibroma, verrucae filiformis), spider naevi, styes, xanthomas, prickly heat (miliaria rubra)

Common diseases and disorders of the circulatory system

Taught content

- Anaemia, aneurism, arteriosclerosis, AIDS/HIV, coronary thrombosis, haemophilia, high and low blood pressure, high cholesterol, hepatitis A, B and C, leukaemia, phlebitis, septicaemia, stress, thrombosis, cardiac failure, myocardial infarction, palpitations, pulmonary embolism, Raynaud's disease, sickle cell anaemia

Common diseases and disorders of the lymphatic system

Taught content

- Hodgkin's disease, non-Hodgkin's lymphoma, Hashimoto's thyroiditis, lymphoma

Common diseases and disorders of the excretory system

Taught content

- Cystitis, dysuria, enuresis, glomerulonephritis, incontinence, kidney stones, nephritis (Bright's disease), pyelonephritis, urinary tract infections, urethritis, nephroblastoma, renal failure, renal colic, uraemia

LO4 Be able to consult, plan and prepare for removal or fading of tattoos

Use consultation techniques to determine the client's treatment plan

Taught content

- Demonstrate a variety of consultation techniques whilst performing consultation, complete all documentation and agree with the client the treatment plan
- Have a friendly, enthusiastic, polite, confident, supportive and sensitive manner, respect client confidentiality
- Use open questioning with client given time to ask questions
- Achievable outcomes must be advised where client has unrealistic expectations of treatment
- Use appropriate communication for tattoo removal or fading treatment
 - Verbal (professional voice and terminology, be respectful)
 - Non-verbal (visual) – open body language, good eye contact, listening, facial expressions, positive body posture, gestures, space (do not invade personal space)
- Give clear and appropriate advice and recommendations to the client to determine final treatment plan that is agreed
- All information to be written on consultation documents in front of the client to finally obtain informed client consent
- Demonstrate punctuality and respect throughout

Identify the client's medical history, indications for and aims of treatment

Taught content

- Medical history – discuss all areas on consultation documentation including sun tanning history
- Skin classification i.e. assess Fitzpatrick scale 1-6
- Skin condition
- Pigmentation colours
- Type of tattoo and where possible the type of pigment to be removed
- Previous tattoo removal treatments
- Client expectations and preparation – ensure that the client has realistic expectations for the treatment, do not give false hope, a thorough consultation should be given to include a clear description of the treatment and its effectiveness for the individual

Recognise any contra-indications/restrictions and take necessary action

Taught content

- Identify contra-indications that may restrict, prevent or require medical referral and advise accordingly
- Make note of the contra-indications on the client's record card

Establish the condition of the skin

Taught content

- Skin characteristics – Fitzpatrick scale 1-6, level of sensitivity, thickness of skin, epidermal thickness, healing capacity
- Pigmentation, photo/sun damage, vascular lesions, primary and secondary lesions, textural irregularities or fibrotic tissue caused by the application of the tattoo

Ensure client comfort

Taught content

- Position client and self effectively for comfort and ease of treatment
- Explain the physical sensation of the treatment and the appearance of the skin post-treatment to the client
- Explain in line with supplier/manufacture recommendations

Explain the treatment procedures

Taught content

- Explain the positioning required for the treatment
- Advise on the physical sensation to be expected during treatment
- Inform about the skin preparation for treatment and the requirement to take pre-treatment photographs
- Explain about the testing of the machine on client
- Describe the method of application
- Explain immediate post care and the need to take post-treatment photographs
- Treatment to be applied following manufacturer protocols

Finalise and agree the treatment plan

Taught content

- Finalise and agree the treatment plan, addressing client needs, expectations (both realistic and unrealistic) and treatment objectives using information from the initial consultation and visual skin assessment, decline treatment where applicable
- Identify and agree achievable outcomes based on assessment of the tattoo to be treated i.e. pigment colours
- Client expectations – ensure that the client has realistic expectations for the treatment, do not give false hope, the consultation must include a clear description of the treatment and its effectiveness for the individual

Obtain signed, informed consent

Taught content

- Ensure all documents are signed after treatment plan agreed
- The practitioner and client must understand the implications of informed client consent and what is being agreed
- All information from consultation to be written on consultation documents in front of the client at the beginning of every treatment
- Informed client consent to be obtained before every practical treatment, from the client prior to carrying out any subsequent treatments

Take pre-treatment photographs

Taught content

- Following organisation procedures, industry guidelines and current data protection legislation, ensuring protocols are followed for taking clinical photographs to ensure clarity and consistency
- Take photographs in same position as post-treatment photographs and where possible in the same light
- Position area to be treated so photographs are taken straight on and from both sides where applicable, zoom in on areas of concern, e.g. pigmentations
- Personal devices should not be used to take images of clients
- Gain written/signed client consent for photography and for storage of clinical photographs and specific use of photographs for marketing and teaching purposes

Carry out a test patch

Taught content

- Test patch performed during initial consultation after client has agreed and signed informed consent
- Client must sign test patch forms if separate to main consent form
- Written aftercare to be provided and signed for
- Treat small area (@10mm) within area to be treated on different colours if tattoo is more than one colour
- Starting with suggested parameters, increase fluency until desired end points are reached
- A new test patch must be carried out after a gap of six months if the client has exposed the area to UV

Select suitable equipment and products

Taught content

- Select suitable equipment and products according to treatment objectives
- Choose the correct equipment and products to suit pigment colour i.e. Ruby, Alexandrite, Nd:Yag, KTP Frequency double Nd:Yag

Explain the cooling off period

Taught content

- Provide information to the client regarding the 'cooling off' period of at least 48 hours between initial consultation and first treatment to provide time to reconsider
- Book first treatment in line with given directives on cooling off periods
- Give client written information regarding the after effects, homecare/additional routines required, proposed outcomes and agreed treatment plans

LO5 Be able to provide treatments to remove or fade tattoos

Maintain own responsibilities for health and safety throughout the treatment

Taught content

- Ensure working area is set up and a safe working environment (controlled area) is created in line with health and safety protocols and legislation.
- PPE (personal protective equipment) to be worn

Prepare and protect the client and self

Taught content

- Ensure preparation complies with legal and organisational requirements
- Prepare and protect client to avoid cross-infection
- Protect client's eyes, hair when appropriate, clothing and surrounding areas depending on area of treatment
- Use the appropriate PPE (personal protective equipment) as a laser practitioner – mask, gloves, suitable protective eyewear

Maintain client's modesty and privacy at all times

Taught content

- Ensure the working environment is private and secure
- Depending on area to be treated provide towels/disposable tissue to protect clothing and protect modesty so the client does not feel exposed and vulnerable

Position the client

Taught content

- Position the client to meet the needs of the treatment without causing them discomfort
- Clearly instruct the client and, if needed, use supports or pillows to ensure the position fits the needs of the treatment, does not compromise the treatment application and does not cause the client any discomfort
- Explain how long the treatment will take
- Removal of clothing as appropriate, positioning throughout the treatment, wearing protective eyewear at all times, communicate clearly when treating the tattoo and explain what is happening

Maintain own posture and working methods

Taught content

- Ensure effective, ergonomic positioning of couch, trolley, equipment and products to avoid injury to self, client and others
- Ensure own posture and working methods minimise fatigue and the risk of injury to self, the client and others

Ensure environmental conditions are suitable for treatment

Taught content

- Ensure ventilation, temperature, ambience, lighting, wall and floor coverings are fit for purpose
- Ensure all tools and equipment are available and in safe working order
- Ensure risks and hazards have been checked i.e. slip and trip hazards in the working area

Ensure the use of clean equipment and materials

Taught content

- Ensure all surfaces are clean and hygienic, trolley is tidy and equipment and products set out ergonomically, all expiry dates checked and are in date
- PPE (personal protective equipment) available and fit for purpose
- Use of sterilisation and disinfectants for surfaces and equipment as required for treatment

Promote environmental and sustainable working practices

Taught content

- Demonstrate environmental working practices, to be effective and energy efficient heating and ventilation to meet the Workplace (Health, Safety and Welfare) Regulations 1992 for client and employees
- Demonstrate sustainable working practices – products with ingredients from sustainable sources and using sustainable packaging, efficient storage and waste disposal, record product usage
- Prevent excess waste of time and consumables by preparing effectively and working efficiently

Safe use of equipment, materials and products

Taught content

- Follow protocols for safe use, including correct use of equipment – enable and set the equipment specifications and variables in line with manufacturers' instructions
- Keep tops on bottles, make sure all products are labelled clearly in line with COSHH information
- Conclude treatment by returning the equipment into stand-by mode

Prepare the area for treatment

Taught content

- The area should be shaved, cleansed with non-alcohol wipes and dried prior to treatment
- Mark out the area with white eyeliner pencil where necessary to ensure treatment precision i.e. avoiding moles, close proximity to another tattoo not being treated
- Apply appropriate PPE (personal protective equipment) – suitable protective eyewear

Select appropriate personal protective equipment (PPE)

Taught content

- Use of PPE (i.e. disposable gloves non-latex, disposable masks) that fit the individual correctly so as not to interfere with work, worn correctly each time, used and disposed after each use
- Suitable protective eyewear
- All PPE stored correctly, checked and maintained so fit for purpose

Apply the tattoo removal or fade treatment

Taught content

- Select equipment appropriate for treatment objectives
- Illuminate the area to be treated to ensure maximum visibility
- Check the area is completely shaved, cleaned using non-alcoholic wipes and dried prior to treatment
- Enable and set the equipment specifications and variables in line with the manufacturers' instructions
- Apply appropriate protective eyewear for the laser practitioner and the client ensuring compatibility with laser wavelength being used
- Carry out a test patch to establish response and suitability to treatment
- Apply the laser at the correct angle and work systematically to cover the tattoo avoiding excessive treatment or more than 20% overlap across the area to be treated
- Reassure the client and communicate positioning instructions clearly during the treatment
- Cool the skin where appropriate i.e. cold packs pre and post treatment where appropriate
- Check the client's wellbeing and monitor the level of skin reaction
- Monitor client for 20 minutes following treatment in case of immediate reaction
- Log all details of treatment
- Conclude treatment by returning the equipment into stand-by mode
- Ensure the treated area is soothed and dressed where applicable e.g. pin point bleeding has occurred

Calculate the duration and intensity of the application

Taught content

- Enable and set the equipment specifications and variables in line with the manufacturers' instructions and treatment aims and objectives

Monitor the skin reaction and client response

Taught content

- Check on the client's wellbeing and monitor the level of skin reaction throughout the treatment i.e. whitening of skin, petechiae, swelling, pinpoint bleeding
- Check the client response, client feedback
- Observe skin reaction and know when to discontinue treatment

Verbally communicate with the client

Taught content

- Continually discuss sensation and level of discomfort with client throughout treatment
- Know when to stop treatment if appropriate

Apply cooling skin procedures

Taught content

- Following supplier/manufacture instructions apply suitable cooling products and procedures as appropriate i.e. cold packs and cryo cooling devices

Apply post-treatment products

Taught content

- Soothe and dress treatment area as applicable

Take post-treatment photographs

Taught content

- Follow protocols for taking of clinical photographs to ensure clarity and consistency
- Take photographs in same position as pre-treatment photographs and where possible in the same light
- Position area to be treated so photographs are taken straight on and from both sides where applicable
- Personal devices should not be used to take images of clients
- Gain client's consent for storage of clinical photographs and specific use of photographs for marketing and teaching purposes

Provide aftercare advice and homecare

Taught content

- Treatment area must be cooled post treatment to minimise redness, swelling and to reduce client discomfort
- Post treatment products must be applied, area to be dressed if skin is broken
- Aftercare advice to be given:
 - Hot baths/showers/heat treatment/perfumed products must be avoided for 24-48 hours post treatment
 - Treatment area should be pat dried
 - Avoid touching the area treated
 - No sun exposure for 4 weeks
- Provide aftercare advice on application of any professional products to aid healing e.g. soothing aftercare lotion, use of sunscreen
- If skin is broken, all perfumed/cosmetic products must be avoided until skin has healed
- Area must be dressed with paraffin based gauze if blisters are present to prevent friction and to protect against infection
- Make-up should not be applied whilst skin is healing
- If area is presenting signs of infection the client must seek medical attention immediately
- Ensure the client signs for receipt of written aftercare procedures
- Discuss how many treatments will be needed and the interval between treatment – should be a minimum of 6 weeks between treatments

Dispose of waste materials to meet legal requirements

Taught content

- Waste – disposed of in an enclosed foot pedal controlled waste bin fitted with disposable, durable bin liner
- Hazardous waste – correct disposal of hazardous waste in line with local council regulations and disposed of following COSHH procedures

Complete the treatment in a commercially viable time

Taught content

- Ensure treatment is completed in a commercial time frame

Update client records

Taught content

- Accurate completion of treatment details, recording date of treatment, selected products used, any modifications to treatment, treatment outcomes, contra-actions (if occurred), any information that could help another laser practitioner treating the same client, skin preparation, frequencies used, duration of application and other treatment parameters, duration of treatment, client skin sensation and skin response, observation of skin after treatment
- Signature from client to be obtained accepting treatment results and agreeing to follow post care/post treatment advice
- Practitioner signature to take responsibility for treatment and records completed
- Records filed and stored securely

Comply with protocols to avoid cross infection

Taught content

- Ensure compliance with protocols to avoid cross infection
- Dispose of any swabs/cotton pads or waste from treatment application with PPE (personal protective equipment) into clinical biohazard waste

Provide and manage post-treatment communications and outcomes

Taught content

- Communicate with the client regarding post-treatment care and concerns
- Inform the client how to manage complications/adverse reactions at home and when to refer to a medical practitioner
- Provide and inform the client of protocol for formal complaints
- Document post-treatment complications and adverse reactions in line with organisation guidelines
- Protocol for escalating a formal complaint to management prior to a medical practitioner

Assessment requirements

Learners are required to complete all assessment requirements related to this unit:

1. Clinical case studies
2. Theory examination
3. Practical examination

1. Clinical case studies

Learners must produce a treatment portfolio which is required to be completed under the supervision of a lecturer who must monitor the quality of the treatments performed throughout the learner's training, to ensure that they meet the given criteria. All clinical case studies must be completed and marked prior to the learner completing the practical and theoretical examinations.

Learners must complete a minimum of 10 clinical case study treatments. Each case study needs to include a full medical history of the client, before and after pictures and a full description of the tattoo to be removed or faded including size type and site. A detailed description of the removal techniques used, treatment parameters and duration of the treatment must also be provided. Each case study must also include an evaluation of the treatment and its outcomes.

Range to be included in clinical case studies:

- Met the needs of a variety of client/patients
 - New
 - Existing
 - Male or Female
- Carry out all consultation techniques
 - Questioning – verbal
 - Listening – non-verbal
 - Visual – non-verbal
 - Manual
 - Written
 - Pre-treatment photographs taken
- Carried out test patch
- Carried out a minimum of 10 case studies which include tattoos of more than 1 colour and in at least 3 different areas. The learner needs to show how to provide the correct treatment to remove or fade tattoos
- Considered all factors of influencing characteristics
 - Level of sensitivity
 - Fitzpatrick scale
 - Condition of skin
 - Healing capacity
- Taken all courses of necessary action
 - Explaining why treatment cannot be carried out
 - Encouraging the client to seek medical advice
 - Modification of treatment

- Used Q Switched Laser equipment (minimum of 2)
 - Ruby
 - Alexandrite
 - Nd:YAG
 - KTP frequency doubled Nd:YAG
- Recorded all types of information
 - Treatment parameters
 - Wavelength used
 - Duration of application
 - Reaction levels
- Given all advice and recommendations
 - Initial aftercare
 - Suitable aftercare products and their use
 - Avoidance of activities which may cause contra-actions
 - Recovery and skin healing process
 - Post-treatment contra-actions and how to deal with them
 - Future treatments needed and time intervals between treatments
 - Present and future products and treatments recommended
 - Use of SPF products
 - Issuing of verbal and written aftercare advice
 - Recording before and after photographs

2. Theory examination

Learners must complete a theory examination for this unit. This will consist of a multiple choice question paper which is mapped to the relevant assessment criteria stated below.

The theory examination will test knowledge and understanding from across learning outcomes 1, 2 and 3. Learners should use the unit content sections of this unit to aid revision since exam questions will test the full breadth of this content over time.

Learning Outcome	Assessment Criteria
LO1 Know safety considerations when providing removal or fading of tattoos	1.1. State the safety considerations of product and equipment sourcing
	1.2. Define the insurance requirement guidelines
	1.3. Identify hygiene considerations
	1.4. State methods of hygiene and infection control
	1.5. Identify the features, benefits and uses of treatment products
	1.6. Identify the associated hazards and risks
	1.7. State the importance of following suppliers' and manufacturers' instructions for safe use
	1.8. Identify the treatment age restrictions
	1.9. State the timings of treatment
	1.10. Identify the contra-indications that would prevent or restrict treatment
	1.11. Identify the protocol for referring contra-indicated clients
	1.12. Identify when to consult with other aesthetic professionals

Learning Outcome	Assessment Criteria
LO2 Understand how to provide treatments to remove or fade tattoos	2.1. Identify requirements for treatment planning
	2.2. Identify factors to consider when treatment planning
	2.3. Identify skin characteristics
	2.4. Identify the treatment advice and information to be provided to the client pre-treatment, during and post-treatment
	2.5. Identify pain threshold and sensitivity variations
	2.6. Identify the requirements for test patch performance prior to treatment
	2.7. State the importance of cleansing the skin prior to treatment
	2.8. Identify the basic principles for the removal or fading of tattoos
	2.9. Define the fundamentals of optical radiation devices and their interaction with tissue
	2.10. State the types and purposes of equipment used for tattoo removal or fading
	2.11. Identify alternative methods for tattoo removal or fading
	2.12. State the preparation techniques for products and equipment
	2.13. Identify the selection of tattoo removal or fading products and equipment
	2.14. State the methods of application
	2.15. Identify adaptations to treatment
	2.16. State the areas to avoid
	2.17. Define the limitations of treatment
	2.18. Identify the benefits and effects of tattoo removal or fading treatment
	2.19. State the effects and risks associated with the treatment
	2.20. Identify the consequences of poorly performed treatments
	2.21. Identify contra-actions which may occur as a result of treatment
	2.22. State the post-treatment products available
	2.23. Identify the use of SPF and UVA in sun protection products
	2.24. Identify how to prevent infection and promote healing
	2.25. Identify treatment progression and maintenance

Learning Outcome	Assessment Criteria
LO3 Know the relevant anatomy, physiology and pathology for removal or fading of tattoos	3.1. Define and identify the structure and functions of the skin and relevance to removal or fading of tattoos
	3.2. Identify the principles of controlled wound healing
	3.3. Define and identify the structure and functions of the circulatory and lymphatic systems and relevance to removal or fading of tattoos
	3.4. Define the principles and functions of the excretory system and relevance to removal or fading of tattoos
	3.5. Identify associated pathologies and relevant terminology of the skin
	3.6. Identify associated pathologies of the circulatory system
	3.7. Identify associated pathologies of the lymphatic system
	3.8. Identify associated pathologies of the excretory system

3. Practical examination

Learners must complete a practical examination for this unit which will be externally set by the awarding organisation and examined and marked by an external examiner. The practical examination will take place at the end of the period of learning. For practical examination criteria please refer to the Qualification Specification.

Document History

Version	Issue Date	Changes	Role
v1	01/05/2018	First Published	Qualifications Manager
v2	16/07/2018	Amended typographical error on page 20 and reformatted	Product Administrator