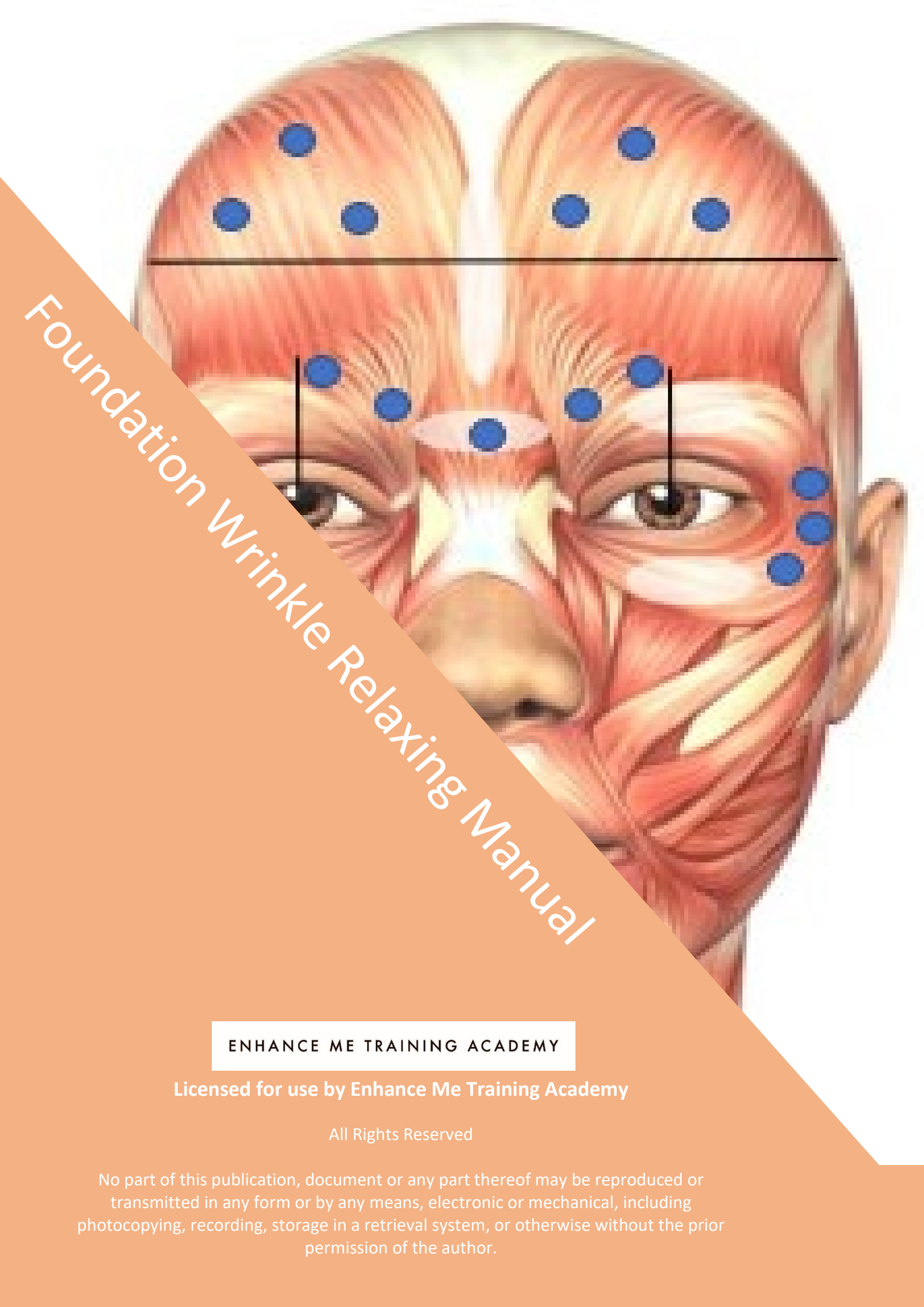




Foundation Wrinkle Relaxing Manual

ENHANCE ME TRAINING ACADEMY

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Welcome to Enhance Me Training Academy.

We are so pleased to welcome you into our academy and are looking forward to getting to know you and share our knowledge and expertise with you.

Our academy courses have been planned and created by Aestheticians, Medics, Beauty Therapist's and Skin Care Specialists and are carefully tailored to give you all you need to perform highly skilled treatments with amazing results. All our courses are CPD accredited, meaning they are fully recognised by insurers.

Our team are here to support you throughout your training and are always available to chat at any point during or after your time with us.

We really hope you enjoy your learning experience,
Abi
Clinical Director,
and the Enhance Me Academy Team.

Objectives

This course aims to ensure you; the student understands the basics of health and safety and anatomy and physiology of the treatment. This manual covers the treatment background, benefits, consultation and contra-indications, contra-actions, aftercare and equipment and products required to perform the treatment. The practical techniques will be covered on the practical session to ensure competency in the procedure.

At the end of the course, you will be able to perform a treatment in a professional, safe and hygienic manner in a commercially acceptable time, along with experience in carrying out a thorough consultation with the knowledge of the background, benefits, consultation, contra-indications, contra-actions, aftercare, equipment and the products needed.

Medical Disclaimer

It is advised that you take medical advice if you or any of your clients have a health problem. Any qualification from Enhance Me Training Academy will not qualify you to advise on or diagnose any medical condition.

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Health & Safety

You will need to maintain a high standard of hygiene as well as health and safety, not only for yourself but also for your employees, clients and any visitors to your business.

It is a legal requirement for employees to display an approved health and safety poster or to provide employees with an equivalent leaflet or information.

All businesses are required by law to comply with the following acts, which are monitored and managed by The Health & Safety Executive (HSE). You should also get copies of the following regulations from your local council or off the HSE website.

Health and Safety at Work Act 1974

This protects your rights as an employer or employee. The law states that the employer must provide a safe working environment, provide health and safety training for staff, produce a written policy of the company's health and safety policy and ensure that anyone on their premises is not exposed to any health or safety risks.

Trade Descriptions Act (1968 and 1972)

These Acts prohibit the use of false descriptions of goods or services. The information must always be accurate, false comparisons must not be made, and misleading price comparisons must not be made. A product may not be described as being of a 'reduced' price if it has not been available at a higher price for a minimum of 28 days.

General Data Protection Regulation GDPR/The Data Protection Act 2018

If you are collecting and storing personal data as a therapist, then you will need to comply with GDPR. You will need to decide which of the six lawful bases on which you will collect and store personal data and inform your clients of how and why you will retain their data and for how long. The Independent Commissioners Office will provide you with all relevant information.

The Consumer Rights Act 2015

The Consumer Rights Act 2015 became law on 01 October 2015 and replaced three pieces of consumer legislation. The consumer Rights Act replaced the Sale of Goods Act, Unfair Terms in Consumer Contracts Regulations, and the Supply of Goods and Services Act. The purpose of introducing one act to replace the older legislation was to reinforce and streamline the law, therefore improving customer rights.

COSHH Regulations and Risk Assessment (Control of Substances Hazardous to Health) 2002

COSHH regulations cover the essential requirements for controlling exposure to hazardous substances, and for protecting people who may be affected by them. You should carry out a COSHH assessment to identify all chemicals, products or other substances which could cause harm.

A substance is considered to be hazardous if it can cause harm to the body. It poses a risk if it is inhaled, ingested, in contact with the skin, absorbed through the skin, injected into the body or introduced to the body through cuts.

Always check the ingredients and instructions of all products to see what they contain and ensure they are correctly stored. If the product could cause harm, it should be listed on your COSHH assessment, together with what the risk is and who is at risk from it.

Next, decide on the degree of risk and who to minimise that risk. If you can, try to replace high-risk products with lower risk ones. Never leave chemicals identified as hazardous in areas accessible to the general public. Do not forget, COSHH substances include both those used for treatments and cleaning.

Local Government (Miscellaneous Provisions) Act 1982

A special treatment licence will be required if you carry out any form of massage, electrolysis or ear piercing and tattooing as they may produce blood and body tissue fluid. Each borough council in the UK has different requirements, so you should contact them to see whether they require you to hold a licence for the treatments you offer.

The Management of Health and Safety at Work Regulations 1999

Employers should make formal arrangements for maintaining and improving safe working conditions and practices. This includes competency training and risk assessments.

The Manual Handling Operations Regulations 1992

This is relevant wherever manual lifting occurs to prevent skeletal and muscular disorders. The employer should undertake a risk assessment for all activities involving manual lifting.

The Health and Safety (Display Screen Equipment) Regulations 1992

This covers the use of display screens and computer screens. This specifies the acceptable levels of radiation emissions from the screen, as well as identifying the correct posture and the number of rest periods.

The Electricity at Work Regulations 1989

Electrical items are potentially hazardous and should be used and maintained properly. You should always ensure that you are fully trained on a piece of equipment before operating it.

All electrical equipment should be regularly PAT tested to ensure it is safe to use. If any equipment is deemed to be faulty or unsafe, you should stop using it immediately and report the problem. Make sure the equipment is clearly marked as faulty until the problem has been corrected to avoid it being used by other members of staff.

Gas Safety (Installation and Use) Regulations 1998 (GSIUR)

This regulation gives guidance on any who may have a duty (managers, building maintenance, landlords) to ensure that gas appliances or fittings, including contractors who install, service and maintain them are in full working order and meet regulations.

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013

These regulations are commonly referred to as RIDDOR, and their main purpose is to alert the enforcing authorities to incidents and causes of ill health that may need further investigation. Their second role is to collate statistics and to assist in the implementation of initiatives to reduce accidents in the workplace.

If any of your employees or trainees suffer a personal injury at work that results in either;

- Major Injury
- Death

Employers should report any such cases to the HSE Incident Contact Centre. This includes loss of sight, amputation, fracture and electric shock. In all cases where a personal injury of any type occurs, it should be recorded in an accident book.

Incident Contact Centre- 0845 3009923.

Less serious injuries have to be reported using form F2508 available on the HSE website. Less serious injuries include:

- More than 24 hours in a hospital
- Incapacity for more than 7 days.

Other incidences that are reportable include:

- A member of the public or client is injured and admitted to hospital.
- Any member of staff that is injured due to an act of violence that is work-related.

All records of injuries, minor or major, must be recorded in your accident book.

Further guidance can be found on the HSE website www.hse.gov.uk/riddor.

Reporting Accidents

All accidents and near misses should be recorded in an Accident Report Book, which should be kept with a first aid kit on the premises.

The following information must be recorded:

- Full name and address of the person(s) involved in the accident.
- Circumstances of the accident.
- Date and time of the accident.
- All details of what may have contributed to the accident.
- The type of injury that occurred and treatment provided on or off-site.
- Details of any witnesses.

The Regulatory Reform (Fire Safety) 2005

All premises must have adequate means of dealing with a fire, and all members of staff should know where these are. This can include fire extinguishers and blankets; however, you should only operate a fire extinguisher if you have been properly trained to do so. All equipment should be checked and maintained regularly.

Fire Drill notices should be clearly displayed and should inform people of what to do in case of a fire. All staff should be trained in the location of alarms, exits and meeting points.

Consumer Protection Act 1987

This Act aims to protect the customer from unsafe or defective services or products. All staff should be trained in using and maintaining products.

The Provision and Use of Work Equipment Regulations 1998

This states the duties of any users of the equipment. It identifies the requirements in selecting and maintaining suitable equipment, as well as the training and safe use of it.

Cosmetic Products (Safety) Regulations 2008

These regulations require that cosmetics and toiletries are safe for their intended purpose and comply with labelling requirements.

The Equality Act 2010

gives disabled people important rights of access to everyday services. Service providers have an obligation to make reasonable adjustments to premises or to the way they provide a service. Sometimes it just takes minor changes to make a service accessible. What is considered a reasonable adjustment for a large business such as a bank, may be different from what is a reasonable adjustment for a small local salon. It is about what is practical in the service provider's individual situation and what resources the business may have. They will not be required to make adjustments that are not reasonable because they are unaffordable or impractical.

The Botulinum Toxin and Cosmetic Fillers (Children) Act 2021 (Botulinum toxin and cosmetic fillers for under 18s)

A new law came into effect 1st of October 2021 with the purpose of safeguarding under 18s (children) from the potential health risks of botulinum toxins and cosmetic fillers. It is now against the law, therefore illegal, for anyone to inject botulinum toxin (commonly known as 'Botox') or dermal fillers with a treatment plan that is for 'cosmetic purposes' into a person who is under the age of 18. It is important to highlight that a parent or guardian cannot give permission for a person under the age of 18 to have the treatments. Providing the treatment would still be classed as an offense by the person that will be prosecuted. Registered medics (doctors, nurses, dentists, and pharmacists) can still provide the treatments those to under 18, but only in cases where the treatment has been approved by a doctor. Practitioners/businesses must make sure they have systems in place to ensure that sufficient age checks are made. This must be an official photo ID (passport, driving license, age, age cards that are nationally recognised by the proof of Age Standards Scheme (PASS) hologram or digital mark) to ensure that their age can be officially verified.

Health & Safety (First Aid) Regulations 1981 (revised 2013)

Whatever the size of your business, you should always make sure you have a First Aid kit on-site, as well as an eyewash bottle. You should ensure this is fully stocked at all times. You should have at least one 'Appointed Person' on hand to take charge in an emergency who holds an HSE-approved basic first aid qualification. You can contact the HSE on 0845 345 0055 for a list of suitable training providers.



Your environmental health officer may ask if you have a completed First Aid training. The HSE recommends that businesses with fewer than 50 staff members should have at least one qualified and appointed First Aider. First Aid courses can last anything from half a day to 3 days. The half-day courses are not usually accredited, so it is highly recommended to at least complete a full day of First Aid training.

These regulations also require that every employer provides equipment or facilities for providing First Aid to their employees. Even if you do not have employees, having a First Aid Kit to hand when required is good practice.

A First Aid box and an eyewash station with single-use pods should be enough, with extra items kept aside for restocking.

Your First Aid box should contain the following:

Number of Employees	1-5	6-10	11-50
Contents	QTY	QTY	QTY
First Aid Guidance Notes	1	1	1
Individually wrapped sterile adhesive dressings	20	20	40
Sterile Eye Pads, with attachment	1	2	4
Sterile triangular bandages	1	2	4
Safety Pins	6	6	12
Medium sized sterile unmedicated dressings	3	6	8
Large sterile unmedicated dressings	1	2	4
Extra Large sterile unmedicated dressings	1	2	4

First Aid boxes must not include any form of medication, such as Paracetamol or Ibuprofen

The Personal Protective Equipment at Work Regulations 2022

This act covers your requirements under the COSHH regulations. You are required to wear or provide to your employee's protective clothing or equipment (PPE) to ensure their health and safety when handling chemicals or coming into contact with bodily fluids.

What PPE will you need?

- Powder-free non-latex Gloves that must be changed for each new client.
- Disposable aprons.

- Face Masks
- Eyewear (optional)

Some therapists like to wear eye protection, although the risk is very low from spillages or splashes. However, a new apron, facemask and gloves should be worn before each new client.



The Environment Act 2021

Under this act, anyone that disposes of waste has a duty of care to ensure that waste is disposed of safely. Subjects covered by the Environment Act 2021 are as follows:

- Waste management
- Noise pollution
- Neighbourhood pollution
- Radioactive substances
- Genetically Modified organisms
- Nature Conservation

Under The Environment Act 2021, it is unlawful to deposit, recover or dispose of controlled (including clinical) waste without a waste management licence, contrary to the conditions of a licence or the terms of an exemption, or in a way which causes pollution of the environment or harm to human health. Contravention of waste controls is a criminal offence. Section 34 of the act places people concerned with controlled (including clinical) waste under a duty of care to ensure that the waste is managed properly, recovered or disposed of safely and is only transferred to someone who is authorised to keep it. Householders are exempt for their own household waste.

Hazardous healthcare waste is subject to the requirements of the Hazardous Waste Regulations 2005. *[Extract is taken from Gov.UK website <https://www.gov.uk/healthcare-waste> 30th June 2014]*

All commercial businesses must have a waste removal contract with either the council or a private waste removal company. If you produce less than one bin bag full of clinical waste per collection, then you can dispose of clinical waste such as cotton wool and tissues in with a normal waste collection. If you produce more than this per collection, then a suitable clinical waste contract must be obtained.

Working with Sharps

Health and Safety (Sharp Instruments in Healthcare) Regulations 2013

The Health and Safety (Sharp Instruments in Healthcare) Regulations 2013 Prior to the publication of European Directive 2010/32/EU, a framework agreement was developed that brought together a number of existing health and safety requirements in order to make the legal framework to protect workers from sharps injuries more explicit. The UK went down the legislative route, and The Health and Safety (Sharp Instruments in Healthcare) Regulations 2013 came into force on the 11th May 2013.

The regulations apply to employers whose primary activity is to organise, manage and provide treatment to others that involve the use of sharps. Those covered under the act include not only those that undertake the procedure but all others that may come into contact with any sharps, which will include all employees, servicemen and cleaners.

The main requirements of the regulations mean Employers need to assess the risk of sharps injuries under the COSHH regulations. Where risks are identified, the regulations require the employer to take specific risk control measures detailed below:

- where the employer has identified a risk, steps must be taken to avoid the unnecessary use of sharps (Regulation 5 (1)(a))
- where it is not reasonably practicable to avoid the use of medical sharps, the sharps regulations require employers to: -
- use safe sharps (incorporating protection mechanisms) where it is reasonably practicable to do so (Regulation 5(1) (b)) –
- prevent the recapping of needles (Regulation 5 (1) (c))
- place secure containers and instructions for safe disposal of medical sharps close to the work area (Regulation 5 (1) (d))
- Provide information to employees on the risks from injuries, relevant legal duties of employers and employees; good practice in preventing injuries; the benefits and drawbacks of vaccination and the support available to an injured person from their employer.
- Provide appropriate training to ensure employees know how to work safely. The training must cover the correct use of safe sharps, safe use and disposal of sharps, what to do in the event of an injury and the employer's arrangements for health surveillance. (Regulation 6 (4))
- Have arrangements in place in the event of an injury, which includes keeping a record of the incident, investigation of the circumstances of an incident and to take action to prevent a reoccurrence. The HSE advise that records of the incident should include details of the type of sharp involved, at what stage of the procedure the incident occurred and the severity of the injury.
- ensure that injured employees who may have been exposed to a blood-borne virus have immediate access to medical advice; are offered post-exposure prophylaxis or other treatment as advised by a doctor and offered counselling where appropriate. (Regulation 7 (2))
- Review, at suitable periods, the effectiveness of procedures and control measures (Regulation 5 (2)).

Sharps Disposal

Anything sharp that could pierce or has pierced skin should be put into the correct category of sharps disposal. We can give you a hand if you're not sure what kind of sharps disposal you need. Any of the below should be disposed of in a sharps bin:

- Needles
- Scalpels
- Stitch cutters
- Glass ampoules
- Sharp instruments
- Shards of bone and teeth
- Syringes
- Lancets
- Razor blades

Your Sharps waste needs to be disposed of in a dedicated sharps bin of a suitable size which we will provide you with as part of your contract. From there, it is incinerated.
If you're producing hazardous waste, you have a duty of care to ensure that it's housed and disposed of in the most appropriate way.

You will need to employ the services of a specialist waste disposal company that will safely remove your sharps boxes when full, along with any other hazardous waste.

Work practice controls

These controls aim to change the behaviour of workers to reduce exposure to occupational hazards. Examples include:

- no needle recapping or resheathing
- safe construction of sharps containers
- placing sharps containers at eye level and within arm's reach
- disposing of sharps immediately after use in designated sharps containers
- sealing and discarding sharps containers when they are three-quarters full
- establishing means for the safe handling and disposal of sharps devices before the beginning of a procedure.
- Safe storage of full sharps containers, which should be stored in a safe place and carried away from the body with the lid firmly closed.

Ergonomics

Posture is important, whether you are sitting or standing up to do a treatment. Try to find a working position that is comfortable for you and reduces the need to lean over to just one side.

Using height adjustable treatment couches and chairs. Choose a height that reduces your need for bending over the client. Ideally, your back should be at a 90-degree angle. Your chair should be comfortable to avoid pressure point sores or injury.

Try to avoid twisting the neck, keep your head upright and keep your shoulders relaxed.

Never ignore pain; look at ways to alleviate the symptoms. If you cannot take a break during treatment, then you can adopt gentle stretching techniques.

Repetitive strain injuries can be caused by using the same movements over and over again. Try to avoid repetitive flexing of the wrist and instead alternate by bending elbows or shoulders instead. Equipment should feel comfortable in your hand and have as minimal vibration as possible.

Insurance

There are several types of insurance that are potentially relevant to you as a therapist. The most important is the 'Professional Indemnity Insurance' and 'Public Liability Insurance'. Both of these are necessary in the unlikely event that a client decided to sue you.

Public Liability Insurance - This covers you if a member of the public, i.e. a client or passer-by is injured on your premises or if their personal property is damaged in any way.



Professional Indemnity Insurance - This protects you should a client decide to sue you claiming personal injury or damage as a result of treatments carried out by you.

Employer's Liability Insurance - This is only necessary if you hire others to work for you. This type of insurance would cover you should a member of your staff have an injury on your premises.

Product Liability Insurance - This insurance is important if you plan to use, manufacture or sell products as part of your business. This will protect you in the event that a client is dissatisfied with the product or experiences a reaction to using the product.

Car Insurance - If a car is used for business purposes, ensure that this is covered by the policy and that theft of equipment is included.

Salon Hygiene, Health & Safety

- The salon should be cleaned thoroughly every day.
- The working area must be cleaned before and after every client.
- Fresh towels and linen should be used for every new client that has been laundered at a minimum of 60°C.
- Couch roll, disposable plastic sheeting or waterproof bed sheets need to be used to protect the couch and keep the area as clean as possible.
- Products should be dispensed from purpose-specific pump or spray bottles. Creams can be removed from jars or bottles with clean spatulas.
- Replace all lids on products securely after use.
- All tools that are non-disposable should be sterilised prior to use.
- Bins should be metal and have foot pedal operations and be emptied every day. Bins should be collected by an appropriate commercial waste disposal company.
- All fire exits should be clearly marked and accessible at all times.
- Read all labels and follow manufactures instructions.
- Know the hazardous warning signs on products.
- Store products safely and in accordance with safety data sheets.
- Ensure equipment is placed on a sturdy surface and cannot fall off.
- Check wires and plugs regularly on any electrical equipment. Ensure electrical equipment is PAT tested annually. Faulty equipment should not be used.
- A first aid kit that complies with the Health and Safety (First Aid) Regulations 1981.

Appearance of the practitioner

A practitioner should ensure that they look well presented at all times as they will be working in close contact with a client, and it is important that a professional image is observed.

They should:

- Wear clean, freshly laundered and ironed uniform each day.
- Wear clean, flat, closed-toe shoes.
- Have short, clean, manicured nails.
- Have a fresh breath.
- Wear antiperspirant.
- Apply modest makeup for a natural look or have a clean well presented skin.
- Wear hair up and away from the face.
- Wear minimal jewellery.

Professional Ethics and Standards of Practice

They should:

- Maintain the highest possible standards of professional conduct.
- Always be courteous and show respect for clients, colleagues and other professionals.
- Never gossip or criticise another therapist, salon or brand.
- Never talk across a client to another member of staff.
- Not to engage in conversations about politics, religion or race that may cause offence.
- Maintain a good reputation by setting an example of good conduct in all your communication with clients, team members and visitors to the business.
- Ensure to make the treatment or service special for every client.
- Respect client confidentiality.
- Explain the treatment to the client and answer any questions and queries prior to carrying out the treatment.
- Treat all clients in a professional manner at all times regardless of their race, colour, religion, sexual orientation or ability.
- Not to treat minors or clients with limited mental capacities, such as those with Alzheimer's or dementia without prior written consent from a parent or carer.

Practising good ethics is essential for the reputation of the business and the welfare of the clients. The following is an example of standards and ethics for practitioners:

- Conduct yourself in a professional, honest and ethical manner.
- Promote professionalism
- Establish a treatment plan with your client and evaluate the outcome at the end of every session.
- Truthfully represent your credentials, qualifications and education, experience, training and competence relevant to practice.
- Maintain the confidentiality of the client.
- Take a full medical history of the client and ensure that they are suitable for treatment and the treatment is the best solution for their concerns.
- Give full aftercare advice.

Precautions Taken in the Salon to Prevent Contamination and Cross-Infection

Hands

Wash with soap/disinfectant and warm water before and after each client—dry hands with a paper towel or blower.

Surfaces

Wipe over with disinfectants, e.g. Alcohol, Surgical spirits.

Treatment of Wounds

If the skin bruises or bleeds after the insertion of a needle, a small pad of dry cotton wool should be used over the area to cover it and apply pressure until the bleeding stops. Apply aftercare solution to the area and work in a different area. The same applies to extractions or any other form of skin piercing. Use disinfectant to clean area.

Disposal

Sharp metal instruments, e.g. Scalpels, should be placed in a sharps box after use. When the box is about 3/4 full, it may be disposed of by special arrangement. Usually collected by local health office and incinerated at a local hospital.

Metal Instruments

Sterilised before and after each client in Autoclave or in Glass bead steriliser, and wipe with Chlorhexidine Gluconate or Methylated spirits.

Skin Preparation

Do not use sharp or pointed instruments on or at least near areas of a client's skin that are obviously diseased, infected or inflamed. Except in facial treatments during the extracting phase (a tile with a lancet and cotton wool dampened with methylated spirits and an antiseptic solution containing Chlorhexidine Gluconate must be prepared, hands should be washed before and after extractions and finger cots or gloves must be used).

Cuts on your Hands

Cover existing wounds with a waterproof dressing, wash fresh cuts and encourage bleeding under running water and then cover with a waterproof dressing. Clean with an antiseptic. Always have a box of plasters/waterproof dressing available. No salon should be without a first aid kit.

Needles

Do not test needles on yourself. Needles should only be used once and must not be used on more than one client.

Creams

Tubes are better than jars. Always use a spatula to obtain creams from containers. Never use fingers and always close a container after use. Excess product must not be returned to containers.

Blood

Anything that has come into contact with blood must be disposed of in the correct manner. Pay attention to the following: Hands, lancets, tweezers, surface, disposal gloves, bin liners, cotton wool or gauze and needles)

Colds/Flu/COVID 19

Wear a surgical mask. Wash your hands regularly, especially after sneezing or blowing the nose. Also, wash hands in general after touching other surface areas. General advice - stay at home when feeling ill or send employees home if they develop cold/flu symptoms at work.

Waste Bins

Bin liners. Emptied regularly. Bins should have lids.

Gloves

Surgical gloves can be used, e.g. epilation or, to prevent contamination. Used always when performing any procedure that breaks the skin and any action that may come into touch with blood.

Instruments

Must be cleaned, sanitised and sterilised or where appropriate disposable tools should be used.

Sterilisation Methods

Autoclave

- Works like a pressure cooker.
- Consists of 2 chambers. Water in the lower chamber and instruments on the upper chamber.
- The principle of sterilisation is moist heat.
- The water boils in the lower chamber and steam is released towards the upper chamber. Instruments are left in the unit for 10 - 20 min. Afterwards, instruments must be placed in a sterile and clean container.
- The moist heat autoclave operates at 121°C and is considered a very effective means of sterilisation.
- Other types available, e.g., dry heat autoclave, vacuum autoclave, flash instrument autoclave.
- The time and temperature of dry heat autoclave is 160°C (320°F) for 2 hours or 180°C (356°F) for one hour.
- Consult manufacturer's instructions and local government laws and regulations on sterilisation times and temperatures.



Advantages of an Autoclave

- Economical and very effective
- Non-toxic on instruments
- Easy to operate

Disadvantages of an Autoclave

- Sharp instruments can become blunt.
- Metal instruments might rust. Recommend use of stainless-steel instruments.
- Expensive
- Plastic instruments will be damaged.
- Autoclaves will need to be kept clean.
- Regular servicing and calibration are required of the device.

Glass Bead Steriliser



- Operates at approximately 300°C.
- Metal instruments will thus be completely sterilised within minutes.
- Only the parts covered with beads will be sterilised.
- The unit takes + 20 - 30 minutes to warm up before sterilisation can take place.
- If more than one instrument is placed in the container, a longer time must be added for sterilisation.
- Consult manufacturers' instructions and local government laws and regulations on sterilisation times and temperatures

Wet Sterilisation (Chemical)

Asepsis can be obtained by washing down all surfaces, walls, floors, treatment beds, tiles, trolleys, work surfaces, basins etc. after basic cleaning with an antiseptic solution. EG: Antiseptic solution concentrates, diluted according to manufacturers' instructions. Towels can also be disinfected in this method. If metal tools are sterilised by this method, the liquid must contain a rust inhibitor.

UV Cabinet

- They are used for the maintenance of your sterilisation process.
- Basically, used as a storage unit.
- They are not used for sterilisation only for sanitation.
- This cabinet will keep your item as clean as it was when you first inserted it.



Antiseptics and Disinfectants

Antiseptic

A diluted disinfectant that is safe to apply to the skin. Its' task is to slow down multiplication, growth and in some cases may destroy/kill micro-organisms if the strength of the solution is correct, e.g. some soaps (hands), alcohol and hydrogen peroxide etc.

Disinfectant

A chemical agent which destroys or kills all micro-organisms. Safe to apply on surfaces but too toxic to be applied directly onto the skin, e.g. Quaternary Ammonium compound/Quats, formalin, ethyl or grain alcohol.

Storage

- Make sure you receive a copy of Material Safety Data Sheets (MSDS) from your suppliers.
- All staff must be trained on the use of products and equipment.
- Training manuals and information leaflets should be accessible to all staff.
- Store your products correctly by following the guidance on the MSDS.
- Carry out a risk assessment on each product or COSHH report if required.
- Keep products in original containers where possible and ensure any decanted products are fully labelled in smaller, purpose-built containers.
- Keep all flammable products out of direct sunlight and at room temperature or below.
- Mobile therapists must make suitable travel arrangements to avoid spillage and ensure safe working practice and be professional in appearance.

Bloodborne Pathogens

What are bloodborne pathogens?

Bloodborne pathogens are infectious microorganisms in human blood that can cause disease in humans. These pathogens include, but are not limited to, hepatitis B (HBV), hepatitis C (HCV) and human immunodeficiency virus (HIV). Needle sticks and other sharps-related injuries may expose workers to bloodborne pathogens. Workers in many occupations, including first aid team members, housekeeping personnel in some industries, nurses and other healthcare personnel, may be at risk of exposure to bloodborne pathogens.

What can be done to control exposure to bloodborne pathogens?

In order to reduce or eliminate the hazards of occupational exposure to bloodborne pathogens, an employer must implement an exposure control plan for the worksite with details on employee protection measures. The plan must also describe how an employer will use a combination of good work practice and ensure the use of personal protective clothing and equipment, provide training, medical surveillance, hepatitis B vaccinations, and signs and labels, among other provisions. Engineering controls are the primary means of eliminating or minimising employee exposure and include the use of safer medical devices.

AIDS – Acquired Immune Deficiency Disease:

AIDS is caused by a human immune-deficiency virus (HIV). The virus attacks the body's natural immune system and makes it vulnerable to infections, which will eventually cause death. Some people are known to be HIV positive, which means that they are carrying the virus without any symptoms of AIDS. HIV carriers are able to pass on the virus to someone else through infected blood or tissue fluid, for example, through cuts or broken skin.

The virus does not live for long outside the body. Advancements within treating HIV has now created a drug regime that can significantly reduce the risk of cross contamination, often campaigns use the U=U logo as the virus becomes undetectable (due to the drugs) therefore the virus is untransmittable. Denying someone a treatment due to their HIV status can be classed as discrimination.



Hepatitis B:

Hepatitis B is a viral infection that attacks the liver and can cause both acute and chronic disease. The virus is most commonly transmitted from mother to child during birth and delivery, as well as through contact with blood or

other body fluids, including sex with an infected partner, injection-drug use that involves sharing needles, syringes, or drug-preparation equipment and needle sticks or exposures to sharp instruments.

As of 2016, 27 million people (10.5% of all people estimated to be living with hepatitis B) were aware of their infection, while 4.5 million (16.7%) of the people diagnosed were on treatment. According to the latest WHO estimates, the proportion of children under five years of age chronically infected with HBV dropped to just under 1% in 2019, down from around 5% in the pre-vaccine era ranging from the 1980s to the early 2000s.

Hepatitis B can be prevented by vaccines that are safe, available and effective.

Hepatitis C:

Hepatitis C is a liver disease caused by the hepatitis C virus (HCV): the virus can cause both acute and chronic hepatitis, ranging in severity from a mild illness lasting a few weeks to a serious, lifelong illness.

The hepatitis C virus is a bloodborne virus: the most common modes of infection are through exposure to small quantities of blood. This may happen through injection drug use, unsafe injection practices, unsafe health care, transfusion of unscreened blood and blood products, and sexual practices that lead to exposure to blood.

Globally, an estimated 71 million people have chronic hepatitis C virus infection. A significant number of those who are chronically infected will develop cirrhosis or liver cancer.

There is currently no effective vaccine against hepatitis C; however, research in this area is ongoing.

Dealing with body fluids:

If blood or body fluids have to be mopped, ensure that disposable gloves, apron and disposable paper are used. All disposable items should then be placed in a yellow plastic sack and destroyed by incineration.

Neat chlorine bleach should be used as the sterilising agent on blood spills. The bleach treatment will destroy the viruses, which will cause AIDS and Hepatitis B.

Anaphylaxis

Some allergies can lead to a severe allergic reaction - known as anaphylaxis. Anaphylaxis can be life-threatening.

Symptoms can occur quickly or within hours following contact with an allergen. Prompt treatment can save a life.

Common causes

Common causes of anaphylaxis are **wasp and bee stings** as well as **food**, such as peanuts, nuts, sesame seed, fish and shellfish, dairy products and egg. Other causes include **latex, penicillin and some other medications**.

For some, fatigue or exercise may cause anaphylaxis - alone or in combination with other triggers like food or medication. Cold can also be a cause. In rare cases, a reaction can occur without apparent cause.

Symptoms

- Itching, especially under the feet, in the hands or on the head
- A stinging feeling in the mouth
- Swelling in the mouth, throat, lips or eyes
- Itching, redness or nettle-rash anywhere on the body
- Dizziness, anxiety, cold sweating
- Abdominal pain, nausea or vomiting
- Shortness of breath or asthma symptoms
- Sudden fatigue, decreased blood pressure or fainting
- Disorientation or loss of consciousness

Critical symptoms: difficulty to breath, mouth and throat swell, sudden fatigue or dizziness, experiencing a steady worsening of symptoms.

Adrenaline is the first-line treatment for anaphylaxis. It is the only medication available for the immediate treatment of severe allergic reactions. Some sufferers may carry an Epi- pen that THEY can administer in the event of an anaphylaxis reaction

Antihistamine and steroid tablets. Antihistamine reduces hives, itching and irritation. Cortisone reduces the risk of late-onset reactions that can occur some hours following contact with allergens.

Who is at risk of anaphylaxis?

A person who has previously experienced anaphylaxis - irrespective of cause - is at risk in the future. If the reaction was caused by peanuts, shellfish or fish, it should not be ignored, even if mild. This is especially important if the reaction was caused by peanuts. This is also the case for certain drugs, insect stings or latex. Your doctor will give you essential information and prescribe suitable medication.

When your client suffers from anaphylaxis

Do not underestimate the severity of an allergic reaction.

Alert a first aider, if it is not yourself. You can assist the first aider and call 999 and say suspected "anaphylaxis."

If possible, someone should wait outside to show the ambulance crew where you are.

Let ambulance personnel know about the client's medical history and treatment undertaken.

Managing Complications

Anyone working in aesthetics or undertaking treatments that break the skin or potentially break the skin, e.g. injectables or involve the injection of application of a product that could cause an allergic reaction, should undertake appropriate training in managing complications. Training should be taken regularly to ensure you stay up to date with current regulations and feel confident in dealing with any issues that should arise.

Complication's training is usually in addition to first aid and anaphylaxis training.

Understanding the array of issues that could be presented from aesthetic procedures will allow you to confidently provide treatments to your clients.

Invasive procedures always carry more risk than other treatments in a salon, and it is important that we are able to identify risk and know how to avoid it.

Emergency Plan

The emergency plan is the responsibility of the regulated independent prescriber. The emergency plan includes the appropriate onsite response, healthcare referral process and access to an emergency kit suitable to deal with adverse reactions or incidents. The regulated independent prescriber has a duty of care to their patients to follow regulatory guidelines set by their Professional, Statutory and Regulated Body.

The client may contact you directly with any issues, and you must also raise any concerns to the prescriber to arrange a care plan for the client.

The Local Authority Licensing Regulation

The registration and by-law requirements vary from council to council. We offer you the best guidance to ensure a smooth application for any area that you may live in. However, it is important that you call the Environmental Health department and ask them what their requirements are prior to application.

There are currently no license requirements needed for wrinkle- relaxing but be aware of any changes that may happen in the future. The advice below is something to be aware of in case changes are made.

Why should I register?

It is a legal requirement for anyone offering invasive treatments (that break the skin) to register for a Licence with their Local Authority. More councils are now cracking down on Tattooists, PMU artists and aesthetic practitioners that have not registered, and the fines can be quite high.

Having a licence and displaying it for your clients to see will only add to your professionalism. Councils are there to work with you, not against you. Don't be afraid of speaking to them; they will give you all the advice you need and allow you to put things in place.

How should I prepare for a council visit?

You should be as prepared as possible for a visit from the council. The following is just a basic list of what they will expect to see:

Your Room

Your room must be able to be kept sanitised to the highest possible level. Things to consider when setting up your business/treatment room is what type of flooring you have. Wipe clean flooring is necessary. Your room should be free from curtains, drapes, towels and cushions and anything else such as absorbent woods and material. Access to running water is also necessary. Also, you need to consider client access (any disabilities) and toilet facilities. No smoking signs should also be clearly displayed.

Keeping Records

Make sure record cards/consultation sheets are stored correctly with regards to GDPR. Keep information with full security measures (lockable cabinet or biometric/password measure electronically). Make sure you store it for at least 3 years.

Cleaning

Obviously, all work areas need to be cleaned between clients and a through clean at the end of the day.

Preventing Cross-Contamination

- You protect your trolley with fresh barrier film or dental bibs before every new client.
- You use a new scalpel each client, and you should open this up in front of them before starting the procedure.
- Use a new scalpel for each new appointment.
- You get out everything you need, so you have it to hand, such as wet wipes, cotton wool etc.
- Use a new pair of powder-free latex-free gloves on each new client. Make sure you wash your hands before and after putting on or removing gloves.

Anatomy and Physiology

Skin Anatomy

The skin makes up around 12% of an adult's body weight. The skin has several important functions which include:

S	Sensation	The main sensory organ for temperature control, pressure, touch and pain.
H	Heat Regulation	The skin helps to regulate the bodies temperature by sweating to cool the body down when it overheats and shivering when the body is cold.
A	Absorption	Some creams, essential oils and even much-needed water can be absorbed through the skin.
P	Protection	Overexposure to UV light may harm the skin; the skin protects itself by producing a pigment, called melanin, which we see when we tan. Bacteria and germs are also prevented from entering the skin by a protective barrier called the Acid Mantle. This barrier also helps to protect against moisture loss.
E	Excretion	Waste products and toxins are eliminated from the body through sweat glands.
S	Secretion	Sebum and sweat are secreted onto the skin's surface. The sebum keeps the skin lubricated and soft, and the sweat combines with the sebum to form the acid mantle.
V	Vitamin D Production	Absorption of UV rays from the sun helps with the formation of Vitamin D, which is needed by the body for the formation of strong bones and good eyesight.

Skin is made up of 3 major layers known as the Epidermis, Dermis and the Subcutaneous.

The Epidermis

This is the outermost layer of the skin. There are various layers of cells within the epidermis, the outermost of which is called the stratum corneum (or horny layer). The layers can be seen clearly in the diagram of the skin. The surface layer is composed of twenty-five to thirty sub-layers of flattened scale-like cells, that are continually being exfoliated off by friction and replaced by the cells beneath.

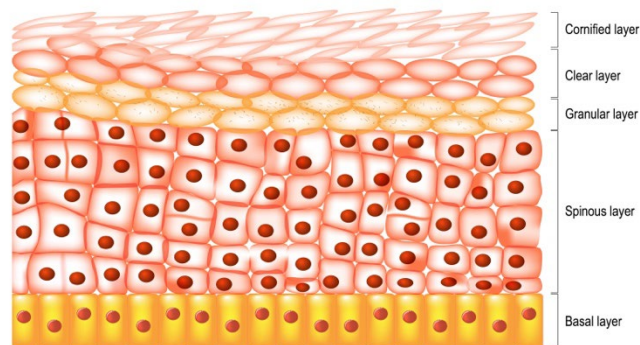
The surface layer is considered the real protective layer of the skin. Cells are called keratinised cells because the living matter within the cell (protoplasm) has changed to form a protein (keratin) which helps to give the skin its protective properties.

New skin cells are formed in the deepest layer of the epidermis. This layer is known as the stratum basale. New cells being to gradually move from this layer towards the stratum corneum to be shed. As they move towards the surface, the cells undergo a process of change from a round, living cell to a flat, hardened cell.

The layers of the epidermis from top to bottom are known as:

- Stratum Corneum/Horny Layer
- Stratum Lucidum/Clear Layer (only found in the palms on the hands and soles of the feet)
- Stratum Granulosum/Granular Layer
- Stratum Spinosum/Prickle Cell Layer
- Stratum Basale/Basal or Germinative Layer

LAYERS OF EPIDERMIS



Dermis Layer

The dermis is a tough and elastic layer containing white fibrous tissue interlaced with yellow elastic fibres.

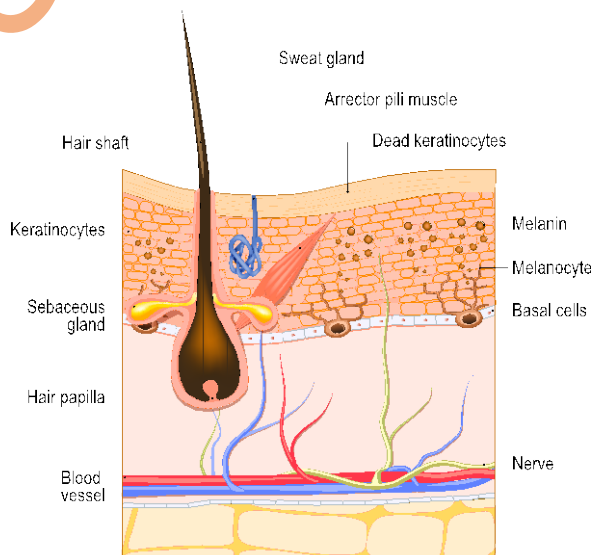
The dermis is an expansive layer and contains:

- Blood vessels
- Lymphatic capillaries and vessels
- Sweat glands and their ducts
- Sebaceous glands
- Sensory nerve endings
- The erector pili – which involuntarily activates tiny muscles attached to the hair follicle in cold weather to trap heat.
- Hair follicles, hair bulbs and hair roots

Subcutaneous Layer

This is the deepest layer of the skin and located beneath the dermis. It connects the dermis to the underlying organs. The subcutaneous layer is mainly composed of loose fibrous connective tissue and fat (adipose) cells interlaced with blood vessels. This layer is generally around 8% thicker in females than in males. The functions of this layer include insulation, storage of lipids, cushioning of the body and temperature regulation.

Structure of the skin

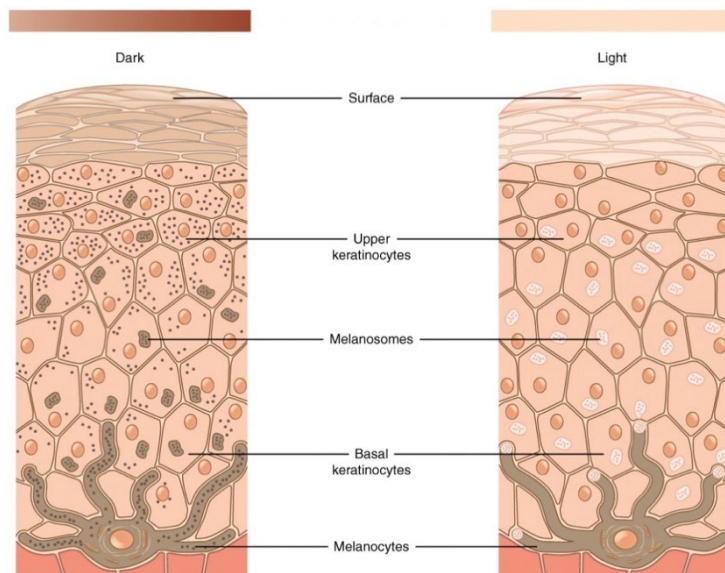


The Skin

The skin comprises of 3 layers, the epidermis, the dermis and the subcutaneous layer.

The epidermis is the outermost layer of the skin and comprises of four cell types, keratinocytes, melanocytes, Langerhans cells and Merkel cells. The epidermis is also divided into layers comprising of living and non-living cells comprising of the stratum corneum, stratum granulosum, stratum spinosum and stratum basale.

The stratum corneum is made up of corneocytes and lipids and referred to as the epidermal barrier. It functions as an evaporative barrier that maintains the skin's hydration and suppleness and protects the body from microbes, trauma, irritants and UV radiation by acting as a physical barrier. Corneocytes contain the skin's natural moisturising factor (NMF), which maintains the hydration of the stratum corneum. Corneocytes are bound together to each other by corneodesmosomes. A lipid bilayer surrounds the corneocytes, which comprise two layers of phospholipids that have hydrophilic heads and two hydrophobic tails. The epidermis requires a constant cell turnover to maintain its integrity and to function effectively. Young, healthy skin renews every 28 days, which is the time it takes for the keratinocyte to migrate from the living basal layer of the epidermis to the stratum corneum's surface and desquamate during the renewal process.



Melanin pigment, which determines the skin's colour and causes hyperpigmentation, is primarily concentrated within the epidermis and, in some conditions, is found within the dermis (in cases of melasma). There are two types of melanin pigment, pheomelanin and eumelanin. Pheomelanin is yellow to red in colour and is found in lighter skin tones. Eumelanin is brown to black in colour and is the predominant type of melanin in darker skin types. Melanin synthesis (melanogenesis) occurs when melanocytes in the basal layer of the epidermis. The key regulatory step is the initial enzymatic conversion of tyrosine to melanin by tyrosinase. Melanin is packaged into melanosomes, intracellular

organelles within the melanocyte; these are then distributed to surrounding epidermal keratinocytes. Melanin has a protective physiologic role in the skin to protect the nuclei of the keratinocytes by absorbing harmful UV radiation: and eumelanin has the greatest UV absorption capabilities. When the skin is exposed to UV radiation, melanin synthesis is upregulated, which is observed by the darkening of the skin as we tan. The number of melanocytes for both light and dark skin tones are similar; however, the quantity and distribution of melanin within the epidermis differ. Lighter skin tones have less melanin per square centimetre and smaller melanosomes that are closely aggregated in membrane-bound clusters. Darker skin tones have more melanin and larger melanosomes that are distributed singularly.

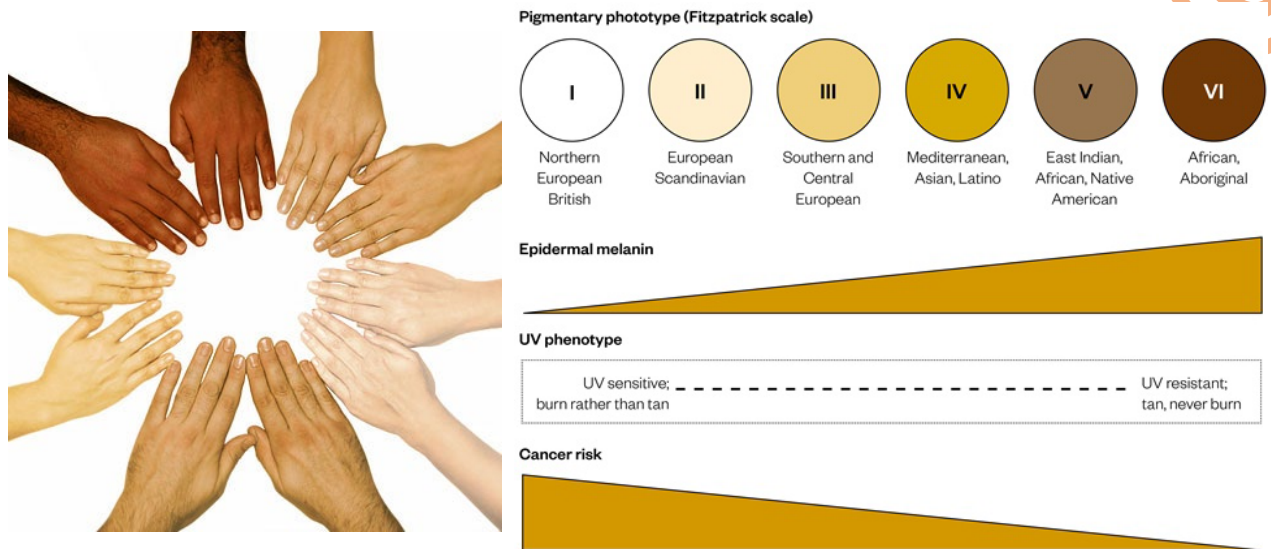
The dermis lies beneath the epidermis and divided into the more superficially dermis and deeper reticular dermis. The most predominant cell in the dermis is the fibroblast, which is abundant in the papillary dermis and sparse in the reticular layer. Fibroblasts synthesize most components of the dermal extracellular matrix (ECM), which includes structural proteins such as collagen and elastin, glycosaminoglycans such as hyaluronic acid, and adhesive proteins such as fibronectin and laminins.

Beneath the dermis and above the underlying muscle is the subcutaneous layer or superficial fascia. This layer mainly comprises both fatty and fibrous components.

Skin Analysis: Skin colourings & Ethnicity

Skin colour is due primarily to the presence of a pigment called melanin. Both light and dark complexioned people have this pigment. The number and size of melanin particles differ will in individuals.

The Fitzpatrick scale (also Fitzpatrick skin typing test; or Fitzpatrick photo typing scale) is a numerical classification schema for human skin colour. It was developed in 1975 by Thomas B. Fitzpatrick as a way to estimate the response of different types of skin to ultraviolet (UV) light.



Type 1	Type 2	Type 3	Type 4	Type 5	Type 6
Highly sensitive •Always burns •Never tans Example; a person with red hair and freckles.	Very sun sensitive •Burns easily •Tans minimally Example; a person who is fair skinned. Fair haired	Sun sensitive skin •Sometimes burns •Slowly tans to a light brown Example; a darker Caucasian	Burns minimally •Always tans well •Tans to moderate brown – think	Sun reactions rarely occur •Minimal freckles •Almost never burns •Always tans	Has dark brown or black skin •Tans easily •Almost never burns •This skin type is more prone to keloid scarring

The following table can be used as a guide for determining someone's Fitzpatrick skin type.

To use this, circle the answer that relates to you for each category. The column that has the most circled answers will be the Fitzpatrick skin type that best fits you.

	Fitz 1	Fitz 2	Fitz 3	Fitz 4	Fitz 5	Fitz 6
Eye Colour	Light blue, grey or green	Blue, grey, or green	Blue, grey, green or hazel/brown	Brown	Dark Brown	Brownish Black
Natural hair colour	Strawberry blonde, red	Blonde or light brown	Chestnut or dark blonde	Brown	Dark brown	Black
Colour of visible skin	Reddish tones Very pale	Pale with a beige tint	Olive tones	Light brown	Brown	Dark brown
Freckles on the skin	Plenty	Several	A few	Incidental	None	None
Burn reaction	Painful, redness, blistering and peeling	Redness followed by peeling	Sometimes burn with a little peeling	Rarely burn	Never burn	Never burn
Short term tendency to tan	Hardly or never tans	Light colour to the skin	Reasonably good tan	Tans easily	Go dark brown quickly	Go dark brown
Long term tendency to tan	Never	Rarely stays long	Sometimes stays for a bit	Lasts well	Stays for some time	Stays for some time
Photosensitivity	Very sensitive	Some sensitivity	Normal	Rarely have a problem	Never have a problem	Never have a problem

Photosensitivity occurs when the skin reacts in an abnormally sensitive way to light from the sun or an artificial source of ultraviolet (UV) radiation, like a tanning bed. Photosensitivity generally presents as a rash. It may look like a sunburn or eczema. Blistering may be present and affected areas may be hot or painful.

Skin Ageing

The visible signs of ageing are a combination of physiologic and environmental factors known as intrinsic and extrinsic factors. Over-exposure to ultraviolet (UV) radiation is one of the main factors responsible for skin damage, commonly referred to as sun damage, photoaging, actinic damage and UV-induced ageing. Other extrinsic factors that contribute to the ageing process include smoking, diet, sleep habits and the consumption of alcohol. Photoaging will present in the clinic with one or more of the following conditions:

Textural changes

- Wrinkles
- Dry or rough skin
- Solar elastosis
- Dilated pores
- Sagging and lax skin

Pigmentation

- Hyperpigmentation such as lentigines, darkened freckles, mottled pigmentation
- Poikiloderma or civaite
- Hypopigmentation
- Sallow discolouration

Vascular changes

- Telangiectasias
- Erythema

Degenerative changes

- Benign such as seborrheic keratoses, sebaceous hyperplasia, cherry angiomas
- Preneoplastic and neoplastic, actinic keratoses, basal and squamous cell cancers and melanomas

Photoaged skin has slower, much more disorganised keratinocyte maturation and increased cellular adhesion relative to younger skins. These factors reduce the desquamation process and result in a rough and thickened stratum corneum that has an impaired barrier function. The stratum corneum also has a poor light reflectance which presents as sallow, dull skin. Water escapes more easily from the skin, causing dehydration. This disrupted barrier also allows an increase in penetration of irritants which can be associated with skin sensitivity and erythema. Sun-damaged skin has signs of pigmentary changes due to overactivity melanocytes and disorganised melanin deposition in the epidermis. Areas with excess melanin are evident as hyperpigmentation, and areas with melanin deficits are shown as hypopigmentation.

In the dermis, chronic UV exposure is very damaging to the ECM. Structural proteins such as collagen are degraded due to the upregulation of enzymes (e.g. matrix metalloproteinases) and weakened due to cross-linkage. This accelerated collagen degradation combined with reduced collagen synthesis that occurs over time contribute to the formation of fine lines and wrinkles. In some cases of advanced sun damage, solar elastosis occurs, which consists of tangles masses of damaged elastin proteins in the dermis, seen as deep wrinkling, sallow complexion and thickening of the skin. Abnormal dilation of dermal blood vessels is also common, leading to visible erythema and telangiectasias

Glycosaminoglycans

Glycosaminoglycans (GAGs), also known as mucopolysaccharides, are polysaccharides that deal with the support and maintenance of skin structural proteins such as collagen and elastin. Frequently occurring glycosaminoglycans include hyaluronan and chondroitin sulphate, which function as water-binding molecules that can hold nearly 1000 times their own weight. This ability may serve to provide moisture for other skin components (i.e., collagen and elastin). For this reason, the use of glycosaminoglycans in skincare are renowned for being excellent ingredients for increasing overall hydration. Lastly, glycosaminoglycans may also inadvertently supply anti-ageing benefits.

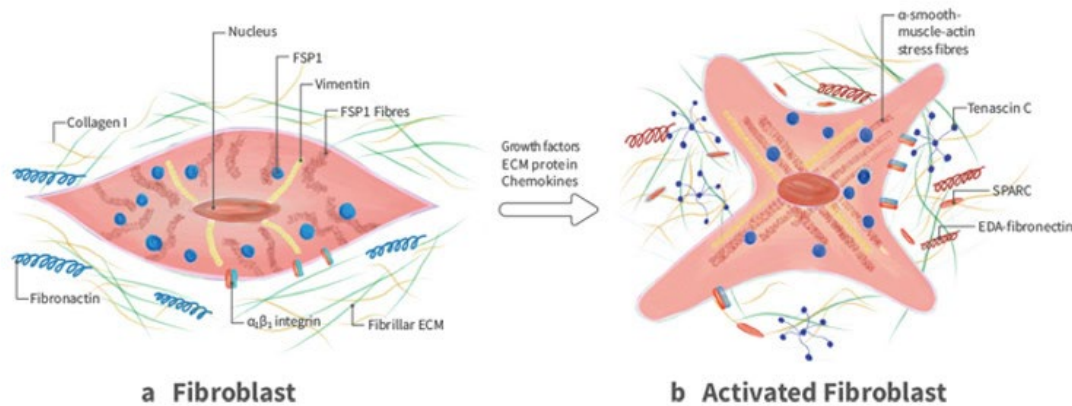
Examples of common glycosaminoglycans are chondroitin 6-sulfate, keratan sulphate, heparin, dermatan sulphate, and hyaluronate.

Glycosaminoglycans (GAGs) have widespread functions within the body. They play a crucial role in the cell signalling process, including regulation of cell growth, proliferation, promotion of cell adhesion, anticoagulation, and wound repair.

The GAG's retain water and form a gel substance through which ions, hormones and nutrients can freely move.

The main component of this gel is hyaluronic acid, which is a large polysaccharide made of glucuronic acid and glucosamine that attract water and is increased in tissues under repair or growth.

Fibroblast



A fibroblast is a type of cell that is responsible for making the extracellular matrix and collagen. Together, this extracellular matrix and collagen form the structural framework of tissues in humans and plays an important role in tissue repair. Fibroblasts are the main connective tissue cells present in the body.

Elastin

The same as collagen, elastin is present in many structures in the body, not just in the skin. Elastin makes up only around 3% of the skin, whereas collagen makes up 70% of the dry mass of skin. Degradation of elastic fibres is associated with UV exposure, and elastosis is one of the key features of photo-aged skin.

The fact that new elastin fibres are not produced is a challenge in the aesthetic industry.

Collagen

Collagen is an abundant protein; it is the main component of connective tissue and is found not only in fibrous tissue like the skin but also in tendons, ligaments, cartilage, bones, corneas and blood vessels.

There are 18 collagen subtypes, 11 of which are in the dermis of the skin.

Types of collagen

The basal lamina serves as structural support for tissues and as a permeable barrier to regulate movement of both cell and molecules.

The dermal-epidermal junction contains type IV collagen, laminin and highly specialised type VII collagen.

During wound healing, type III collagen appears in the wound about four days after the injury. Wound collagen or type III is immature collagen tissue and does not provide a great deal of tensile strength. It is initially deposited in the wound in a seemingly random fashion.

It will take approximately three months for type III collagen to mature into type I collagen.

As skin ages, reactive oxygen species, associated with many aspects of ageing, lead to increased production of the enzyme collagenase, which breaks down collagen. Then fibroblasts, the critical players in firm, healthy skin, lose their normal stretched state. They collapse, and more breakdown enzymes are produced. People in their 80s have four times more broken collagen than people in their 20s.

Immune functions of the skin

Langerhan cells are 'guard' cells, found mainly in the Stratum Filamentosum (Spinosum) but start in the dermis. They move across the skin and are stimulated to action by the entry of foreign materials, acting as macrophages to engulf bacteria.

If someone has a bad immune system, any micro wound treatment will not be as effective.

Skin Analysis & Skin Types

Skin analysis must be carried out before treatment. Ask the client to attend their appointment wearing no make-up.

Skin Type

- *Skin type* is how our skin behaves or looks due to the different genetic and hormonal make-up of our bodies.
- It cannot be changed by external treatments but can change over time internally. For example, oily skin may become lipid dry due to the reduction in oil production caused by the menopause
- It can only have its appearance improved and made more manageable – the skin type will still remain
- Products will only have an effect on skin type for as long as your client maintains a good routine

Skin Types are categorised as

Oily Skin - experiences an excessive production of sebum due to an excess of the androgen hormone dihydrotestosterone (DHT)

- Sebum prevents water-loss
- The skin will have widespread sebaceous filaments, which are little pockets mainly composed of solidified sebum, inside the tiny hair follicles of the face.
- A greasy sheen can be seen on the skin.
- There are visible enlarged or thickened pores and an uneven texture.
- The skin will have some slip to it, especially on the t-zone.
- Puberty results in an increase in androgens, and this, in turn, increases sebaceous activity. It may result in enlarged pores as sebum fills up the follicles. The results are most pronounced on the t-zone, which is in the shape of a capital T starting at the chin, proceeding up the nose with the top across the forehead.
- The increase in sebum usually results in comedones.
- During the menstrual cycle, progesterone rises, and so do DHT levels; which is why the skin becomes oily and spot-prone at certain times, stopping progesterone rise.

Lipid (oil) Dry - has an underproduction of sebum and therefore a lack of lipids.

- Dry skin can easily become dehydrated as the Natural Moisturising Factor in the skin can evaporate easily without a protective barrier of lipids.
- Low levels of sebum combined with dehydration leads to cells not functioning properly.
- Results in premature ageing if not treated.
- Clients complain of flakiness and the fact that nothing seems to keep their skin supple.
- Their skin may feel tight.
- Skins look scaly and flaky.
- Look thickened, and milia may be present.
- A client may suffer from eczema or psoriasis elsewhere on the body.
- Fine lines and deep wrinkles are more prominent on these skin types.
- May be some evidence of sun-damage, with sunspots or broken capillaries visible through the skin.
- It feels very rough to the touch.
- Sebaceous filaments are minimal.

Sensitive Skin - skin that is sensitive is categorised and treated as so, regardless of whether it is oily, lipid dry or a combination. This is because products normally used to treat other skin types will cause irritation to a sensitive skin

- Sensitive skin has reduced barrier function, making the skin more vulnerable, easily irritated, and easily dried and dehydrated.
- Sensitivity means that it has an overactive immune response to ingredients – causing the skin to attack healthy cells, breaking down collagen, elastin and hyaluronic acid, making the skin become further dehydrated.
- This results in premature ageing if left untreated.
- Sensitive skin also reacts in an exaggerated manner to friction and pressure, causing the skin to flush easily.
- Widespread broken capillaries (telangiectasia, also called couperose skin) found particularly across the nose, cheeks and forehead in a butterfly pattern. Skin can look purple in places.
- The skin may produce erythema (redness) on seemingly unaffected areas at the lightest touch.
- It feels rough, slightly sandpapery and hot in flushed areas.
- May see lumps that look sore. Severe cases include a swollen and red nose.
- The client's skin feels bumpy and hot to the touch.

Combination Skin – has a slightly oily t-zone which contributes to the silkiness of the rest of the skin

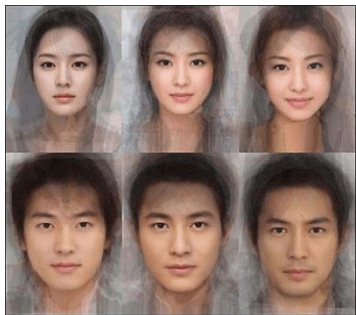
- Oils are needed to keep skin supple.
- The term 'combination' is useful when you are explaining to clients; they may need to treat the t-zone differently from the rest of the skin, and those occasional breakouts can still occur on good skin due to a surge in hormones when under stress, during menstruation or if the wrong product is used.
- Combination skin leans slightly over to the oily skin type category, not the lipid dry one.
- Confusion arises when people think skin type can be a combination of oily and lipid dry. But an excess of oil production on one part of the skin on the face does not make it possible to have a dry skin type on another.
- Oily skin type is an overproduction of oils.
- Dry skin type is an underproduction of oils.
- Combination skin can quickly become dehydrated with the use of products. For oily skin, these products strip away the protective barrier of lipids, leading to the Natural Moisturising Factor in the skin (which keeps it supple) evaporating much more easily.
- When treating a combination skin, you should consider its separate parts. A typical combination product usually focuses on only the oily part. It is, therefore, usually sebum-reducing and lacking in hydrating ingredients to balance out its oil reducing properties. The product may make an oily t-zone less oily, but, inadvertently, it will also make the rest of the skin (that was previously in good condition) become lipid dry or dehydrated.
- Treat the different areas of the skin with products that are designed specifically for them.

Skin Type	Causes	Treatment
Normal = well balanced sebum secretions	If neglected, the skin can become dry around the eyes, cheeks and neck	Because this skin rarely has problems it can be neglected Advise on good skin care routine
Dry = lacks oil or sebaceous secretions	Climate. Skin ageing – sebaceous secretions decrease with age. Hereditary. Medication. Diet lacking in fat/oil	To nourish and soften. To protect and rebuild the hydro- lipidic film. To provide a feeling of comfort and wellbeing.
Sensitive = reacts rapidly to aggressions	Excessive exposure to sun, wind, cold and pollution. Stress and fatigue. Illness and medication. Diet. Repeated use of unsuitable products.	To soothe, soften and desensitize To reinforce the skin's natural defences To provide a feeling of comfort and well being
Dehydrated = lack of moisture in the epidermis	- Central heating, air conditioning - Climate i.e. sun, wind - Diuretics - Not drinking enough water	To help skin maintain its moisture level by rebuilding the hydro-lipidic film
Oily produces excess oil or sebum	Hormones. Climate, sun exposure dries the skin initially but stimulates production of sebum after a few days. Use of strong cosmetic products. Food rich in fat or sugar Hereditary	To re-balance production of sebum To purify To soften and soothe
Combination	- T zone has greater number of sebaceous glands which are more active. - Inadequate cleansing programme - Use of strong cosmetic products	To balance over dry or over oily areas
Mature	Accelerated aging. Environment e.g. pollution, climate, central heating, air conditioning. Poor diet Alcohol, smoking, Illness and medication, stress and fatigue.	To improve condition of skin Lessen appearance of lines and wrinkles Hydrate and nourish

Pigmentation

The main difference between darker skin tones and Caucasian skin tones is the dispersal of melanocytes. In dark skins melanosomes (melanin pigment granules) are large and scattered singly, in lighter skins they are smaller and packed together. Melanin has the ability to absorb free-radicals, harmful particles in the environment, thus helping to fight against premature ageing. As the melanin is bigger and more widely distributed in darker skin colours this, scientifically, proves that darker skins will age slower than Caucasian skins.

The table below is just a guide of typical characteristics linked to skin colour and ethnicity. Also mixed ethnicity may have many traits linked across a variety of ethnicities.

White/Caucasian skin 	• Relatively thin skin – blood capillaries visible – also prone to broken capillaries • Fewer and less sebaceous glands – therefore fine in texture • Prone to burning in the sun due to less melanocytes • Also ages and wrinkles prematurely • Blue / pink tones • Some skin tones can be darker, particularly if the parents have brown or black hair • Red haired and blonde haired people have quite sensitive skin
East Asian and Southeast Asian  Korean Chinese Japanese	• Skin rarely shows blemishes, but can develop hyper-pigmentation, scarring and unevenness – therefore be careful if extracting blackheads. • Ages slower than white skin – good tolerance to UV light • Sebaceous glands are more active in the T-zone area, but not excessive • Yellow and olive undertones
South Asian and Middle Eastern 	• Melanin is quite high and skin tone can be yellow to dark • More sweat glands – which can give a sheen – not to be mistaken for oiliness • A strong skin, with supporting fibres – therefore ages well • Pigmentation problems – particularly around and under the eyes • Excess dark hair can be visible on the face and body

Black skin



- This skin has the most melanocytes– therefore has more protection from UV light and sun damage
- Sebaceous activity gives good lubrication and moisture, resulting in a slower aging process
- Cell renewal is fast, as the skin desquamates well
- Collagen and elastin fibres are strong with good support preventing poor muscle tone
- Keloid scarring can occur when skin is damaged
- Although the epidermis is thicker, harsh products should be avoided.
- Dermatitis apulose nigra occurs exclusively in black skins and more so in women. The condition forms brown to black lesions that resemble moles.
- Pseudofolliculitis barbae hairs are susceptible to growing back into the follicle, due to the natural curls, this can cause an inflammatory reaction (PIH) which results in tender spots. These spots often become infected and filled with pus and can be mistaken for acne. Shaving is a main cause of this condition, waxing can also be a cause.

Mediterranean/Latino skin



- Darker, olive skin tones – for people who live along the Mediterranean coast line – Spain, Italy, Portugal, Greece, France
- Sebaceous glands produce more oil to lubricate skin in the heat and rarely suffers from blemishes
- Hair tones are darker, which makes facial hair more visible
- Skin is strong and robust with good protection from melanocytes and tans well in the sun

Hyper-pigmentation= too much pigment in an area

Hyperpigmentation is where the skin has created too much melanin. This can be triggered by many different things hormone imbalances, sun exposure, photo-sensitivity to products, acne and scarring.



Unfortunately, the damage is often done before the pigmentation is seen and affects all skin colours. The increased distribution of melanin pigment means hyper-pigmentation is greatly increased in darker skins. Post inflammatory hyper-pigmentation, also known as PIH, can develop after the skin has been irritated or sensitised. This can occur from harsh beauty treatments, over-abrasion of the skin e.g. strong soaps, products with high alcohol content and squeezing spots. Hyper-pigmentation can occur in all skin colours but darker skins develop dark patches of pigmentation and Caucasian skins will appear red, this is referred to as post-inflammatory erythema (PIE). This occurs as a result of the healing process from injury. Irregular pigmentation can be a problem and is hard to treat.

Hypo-pigmentation= Lack of pigment in the skin



Hypopigmentation is a lack of melanin in the skin caused by depletion of melanocyte cells. This can be caused by numerous reasons, frequently in people suffering from thyroid conditions, addisons disease and pernicious anaemia. Other causes can include injury to the skin. Loss of pigment is highly visible in darker skins but can occur on any skin colour.

Post-inflammatory hyperpigmentation

History can include infestation, allergic reactions, mechanical injuries (picking acne lesions) or reactions to medications, phototoxic eruptions, burns, bruising and inflammatory skin diseases from eczema/dermatitis family.

This type of pigmentation can darken with exposure to UV light and with the use of various chemicals and medications, such as tetracycline, bleomycin, doxorubicin, 5-fluorouracil, busulfan, arsenicals, silver, gold, anti-malarial drugs, hormones and clofazimine.

Dermal pigmentation caused by trauma

A combination of the inflammatory response and ultraviolet causes the inflammation to disrupt the basal cell layer, a combination of melanin pigment being released and subsequently trapped by macrophages in the papillary layer. Once the wound healing has completed and the junction repaired, the melanin pigment granules caught within the dermal layer have no way of escape and thus a more difficult type of pigment granule to eliminate.

Post-Inflammatory hyperpigmentation is a darkening of the skin that's the result of acne scarring or skin injury due to inflammatory response in the skin. The cells associated with melanin production are closely linked with the skin immune system cells, meaning you can't stimulate one without stimulating the other.

Post-inflammatory hyperpigmentation can be seen after endogenous or exogenous inflammatory conditions. Essentially any disease with cutaneous inflammation can potentially result in post-inflammatory hyperpigmentation in individuals capable of producing melanin.

Several skin disorders such as acne, atopic dermatitis, allergic contact dermatitis, incontinenti pigmenti, lichen planus, lupus erythematosus, and morphea have post-inflammatory hyperpigmentation as a predominant feature. Exogenous stimuli, both physical and chemical, can cause injury to the skin, followed by PIH. These include mechanical trauma, ionizing and non-ionizing radiation, heat, contact dermatitis, and phototoxic reaction.

Optimal treatment for PIH includes prevention of further pigment deposition and clearing of the deposited pigment. Chemical peels work best when used in combination with topical bleaching regimens. Laser therapy should be used with extreme caution and care. Given the propensity of darker-skin types to develop post-inflammatory hyperpigmentation, superficial peels work best while minimizing complications.

Tyrosinase inhibitors, such as Vitamin C, arbutin, kojic acid and mulberry, have been favoured for their ability to inhibit melanin by targeting the tyrosinase enzyme, which covers the amino acid phenylalanine into the melanin precursors.

Effective topical vitamins include niacinamide and several forms of vitamin C, including L-ascorbic acid, magnesium ascorbyl phosphate (MAP) and tetrahexyldecyl ascorbate, an oil-soluble version.

In addition to having a direct skin-lightening effect, Vitamin C can help protect against sun damage by neutralizing free radicals that contribute to hyperpigmentation. Studies have shown that Vitamin C and E, in combination, can improve the efficacy of sunscreen. A great all-around skin vitamin, Vitamin A, helps pigmentation problems by treating slight discolouration and evening skin tone. Vitamin A can be taken orally as well as applied topically in the form of a retinol cream or other retinol.

The sex of the client

Males tend to have a more acidic skin surface and their stratum corneum/horny layer is thicker than that of females. Males also have coarse facial hair and shaving regularly removes the stratum corneum cells before they are ready to desquamate naturally. This can cause skin dryness and sensitivity, especially with males using after shave lotions which are very high in alcohol and are applied directly to the skin. It is important that moisturiser is applied to protect the skin.

Also the male collagen structure is different from that of females. Sebum and collagen production slows down in menopausal females causing the skin to age. Skin in the male does not seem to age as quickly because their sebum and collagen production remains constant.

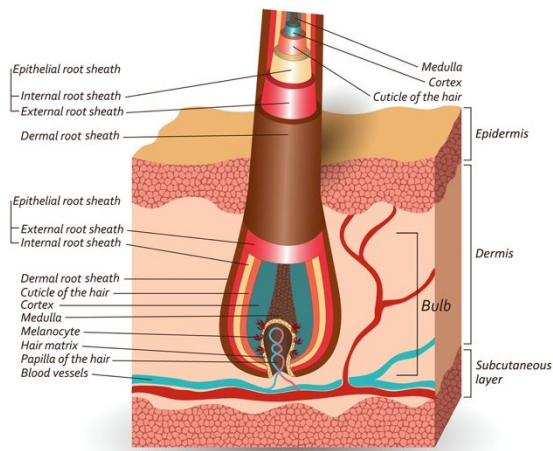
Males tend to have a facial to induce relaxation as well as improving their skin condition.

Key technical words that are associated with facials and skin care

Term	Definition
Elastin	A tissue in the dermis which allows the skin to stretch and return to shape
Collagen	A tissue in the dermis which provides strength
Keratin	The protein found in the skin (also hair and nails) which provides strength
Melanocyte	A cell which produces melanin
Melanin	Also known as pigment, gives the hair and skin its natural colour and provides protection against UV light
Arrector pili muscle	The muscle attached to the hair follicle and epidermis, which causes the hair to stand upright when the skin is cold
Comedone	Technical name for a blackhead
Pustule	Technical name for a whitehead
Papule	Technical name for a spot that has no head
Congestion	Polite way of saying a variety of spots on the skin
Milia	Milia occur when keratin becomes trapped beneath the surface of the skin. Often around the eyes where the pores can be tighter and the skin is thinner
Papillary layer	The wavy layer with a rich blood supply; joins the epidermis to the dermis
Reticular layer	The part of the dermis that holds everything in place
Sebaceous gland	Sacs attached to the hair follicle which produce the oil sebum
Desquamation	The process by which skin cells are shed
Humectant	Ingredient that attracts and retains moisture
Sebum	The oil produced by the sebaceous gland, which lubricates the skin and hair
Excretion	A function of the skin; the sweat glands excrete waste products in sweat
Secretion	A function of the skin; sebum is secreted onto the skin
Acid mantle	A layer made up of sweat and sebum, which makes the skin acidic (pH 4.5–5.5) and deters bacteria and germs from entering the body
Antioxidant	Antioxidants protect the skin by reducing and counteracting free radical production. Common antioxidants are ascorbic acid, benzoic acid.
Free radical	Free radicals can damage the skin by trying to grab an extra electron from atoms in the skin. When atoms are taken away from molecules in the skin, it causes damage to our skin's DNA that can speed along skin ageing.
Emulsion	2 liquids mixed together. In skin care this is often oil and water
Adipose	Technical name for fat cells

Structure of the hair

Anatomy of the hair bulb



Below the surface of the skin is the hair root, which is enclosed within a hair follicle.

At the base of the hair follicle is the dermal papilla. The dermal papilla is supplied with nourishment from the bloodstream to produce new hair. The dermal papilla structure is vital to hair growth because it contains receptors for male hormones and androgens.

Androgens regulate hair growth. In scalp hair, the androgens may cause the hair follicle to become progressively smaller, causing the hair to become finer in individuals who are genetically predisposed to this type of hair loss.

Hair Growth Cycle

Hair follicles grow in repeated cycles. One cycle consists of three phases:

Anagen	Growth Phase
Catagen	Transitional Phase
Telogen	Resting Phase

Each hair passes through the phases independent of neighbouring hairs.

Anagen Phase

Approximately 85% of all hairs are in the growing phase at any time. This growth phase can vary from 2 years to six years. Hair will grow approximately 10cm per year, and any individual hair is unlikely to grow more than one meter long.

In the anagen stage, the hair receives nourishment from the blood supply from the dermal papilla. This enables the cells to reproduce. Cells move upwards to form the different structures of the hair shaft. Melanin is also produced to form the hair colour.

Catagen Phase

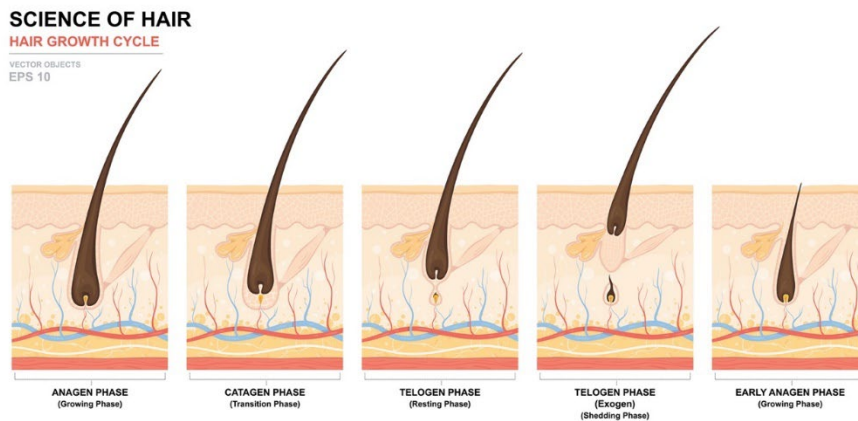
This is the transitional phase that follows the growth phase. The catagen phase lasts around one to two weeks. During the catagen phase, the hair follicle shrinks to about 1/6 of the normal length. The lower part is destroyed, and the dermal papilla breaks away to rest below.

This is the inactive or resting stage of hair growth. In this stage, the dermal papilla breaks away to make the lower end of the hair become loose from the base of the follicle. The hair is still being fed from the follicle wall and is sometimes known as club-ended hair. The hair starts to become drier and continues to move up to just below the sebaceous gland. At this stage, it can be easily brushed out.

Telogen Phase

This resting phase follows the catagen phase and lasts around five to six weeks. During this time, the hair does not grow but stays attached to the follicle whilst the dermal papilla stays in a resting phase below. Around 10-15% of hairs are in this phase at any time.

The hair follicle re-enters the anagen phase. The dermal papilla and the base of the follicle join together again, and a new hair begins to form. If the old hair has not yet been shed, the new hair pushes the old one out, and the growth cycle starts over again.



Hair Types

Vellus hair is the fine, non-pigmented hair that covers the body of children and adults. It does not usually grow longer than 2cms in length. Vellus hair is usually straight, regardless of ethnic origin, due to the fact that the follicles are not deep. The growth of vellus hair is not affected by hormones.

Terminal hair is the thick pigmented hair found on the scalp, beard, underarms, and pubic area. The growth of terminal hair is influenced by hormones.

Terminal hair is generally more abundant on males than females. However, variations exist within populations, with some women appearing hairier than some males.

These hair types can be straight, curly or wavy depending on ethnic origin, hereditary factors and chemical hair treatment such as perms.

European hair would appear to be oval in shape and would tend to be wavy. Asian hair would appear to be round in shape and tend to be straight. Afro-Caribbean hair would appear to be flattened and tend to be very curly.

In some cases, excess hair growth, called hirsutism (pronounced: hur-suh-tih- zum), maybe the result of certain medical conditions. In girls, polycystic ovary syndrome and other hormonal disorders can cause dark, coarse hair to grow on the face, especially the upper lip, and on the arms, chest, and legs. Some medications, like anabolic steroids, can also cause hirsutism.

Superfluous hair is coarse unwanted hair, also termed hypertrichosis. Superfluous hair is considered not only a physical burden but can become a psychological one, too if not treated. The modern woman is keenly aware of the importance of being well-groomed; her happiness, poise, even her success or failure in life very much depend upon the face she presents to the world.

The reluctance and timidity of women to discuss this condition would vanish if they realised superfluous hair is not something to be ashamed of, but a simple problem requiring remedial treatment.

It is estimated that 80% of the women in Britain have some superfluous hair growth. Generally considered a “cosmetic” issue, hair growth can cause real or perceived problems with social acceptance for many people, both male and female. Many cultures have a perceived ideal amount of hair growth. Changes in hair growth patterns are sometimes a symptom of hormonal imbalances. Managing or removing unwanted hair can go beyond being a simple “cosmetic” problem.

Changes in Growth Patterns

The hair growth pattern can change due to several factors:

Illness - Illness has a strong effect on hair growth, usually making it lank and lifeless. It can also cause hair loss, or growth of unwanted hair.

Medication - Drugs can affect the growth pattern; hair may become coarse and thick. Follicles can often be weakened, causing hair to fall out. In some cases, this can be temporary.

Hormones - Different changes of life can affect hair growth, e.g. women going through the menopause may find they develop whiskers of coarse hair on their face. Endometriosis or Polycystic Ovaries can cause male pattern hair growth in women.

Emotion - Sudden shock, an accident, or stress can all lead to hair loss. This is called alopecia (patches of hair loss).

Causes of Hair Growth

Excess hair growth can be either normal or abnormal and may be the result of a number of causes.

- **Topical** – Hair growth caused by irritation of the skin caused by friction which results in an increased blood supply. The hair follicles receive more nutrients and thus grow longer and thicker hair. The removal of vellus hair by plucking can also cause the hair follicle to become deeper, causing more blood supply and the change in structure from vellus to terminal. For example, sunburn can cause excess hair growth, as can moles, scars and birthmarks.
- **Congenital** – this type of hair growth is inherited. The person can be born with it or develop it later in life.
- **Systemic** – this includes normal hair growth caused by hormones from puberty, pregnancy and menopause, as well as abnormal hair growth caused by hormonal imbalances from diseases, surgery, tumours, medicine or stress.

Malfunctions of the endocrine system and the effects on hair growth

Abnormal hair growth is often caused by an abnormal change in the endocrine system, which causes a hormonal imbalance. This can be due to illness, tumours, medication or dietary disorders.

Virilization

This is when the female body becomes more masculine, and results develop heavy facial hair and excess body hair growth in the male pattern of growth. A hormone imbalance that can be due to a tumour on the adrenal cortex or a tumour on the ovaries can influence the hypersecretion of androgens and the reduction in the release of oestrogen. This causes abnormal systematic hair growth.

Virilization is also accompanied by loss of menstruation, deepening of the voice, loss of scalp hair, development of acne, and the breast tissue reduces, and the body thickens.

Polycystic Ovary Syndrome

A variety of symptoms can be seen with this condition, including heavy or irregular periods, excessive facial and body hair growth and infertility. It is caused by cysts or growths on the ovaries that develop due to non-completion of the ovulation process.

Cushing Syndrome

This is caused by tumours on the adrenal cortex where it causes the gland to produce too much cortisol. There is an associated overproduction of androgens, and as a result, a heavy male pattern of hair growth can be seen. Other symptoms may include a thickening of the trunk, round face, dowagers hump and thin legs and arms.

Anorexia Nervosa

Clients suffering from this eating disorder become very thin and undernourished. It is, therefore, quite common to see excessive hair growth all over the face and body. This is caused by a shutdown in the ovaries that reduces the amount of oestrogen produced and stimulating the androgens. Females who exercise or undertake athletic training may also be affected by the same symptoms.

Medication

Some prescribed drugs such as androgens or anabolic steroids have a secondary effect causing excess hair growth.

The Lymphatic System

The main functions of the lymphatic system are:

1. Removal of bacteria and abnormal material
2. Helps prevent infection
3. Drains away excess fluids which are then eliminated from the body.

Lymph is colourless, clear, and similar to a watery fluid resembling blood plasma which it supplies to tissues for their metabolism. It is filtered through the walls of the capillaries. In the spaces between the cells where there are no blood capillaries lymph provides nourishment.

It also carries **lymphocytes** – these are a type of white blood cell. There is also another type of white blood cell present which lines the inside walls of the lymph nodes. Macrophages destroy and engulf any debris, bacteria or foreign bodies carried in the lymph. They also manufacture antibodies to fight bacteria, which pass into the blood stream along with the circulating lymph. When we suffer from an infection, the lymph nodes that are nearest to the infectious site will swell (oedema) and as the white cells fight the bacteria the area tends to become tender.

The lymphatic system has no muscular pump (heart) as does the blood circulation. The lymph moves through the vessels and gets around the body through movements of large muscles contracting. Lymph travels in one direction, from body tissue back towards the heart.

Lymph vessels

Lymph vessels contain valves along their vessels to prevent lymph flowing backwards. The vessels run very close to the veins around the body, and are very similar in structure to veins.

The vessels join to form larger lymph vessels, until they eventually flow into one or two large lymphatic vessels; these are the thoracic duct (or left lymphatic duct) and the right lymphatic duct. The thoracic duct receives lymph from the left side of the head, neck, chest, abdomen and lower body. The right lymphatic duct receives lymph from the right side of the head and upper body.

These large lymph vessels then empty their contents into a vein at the base of the neck, which then empties into the vena cava. The lymph is then mixed into the venous blood as it returns to the heart.

Oedema is the swelling of the tissues. This can occur when fluids accumulate instead of returning to the blood stream.

Lymph nodes

These are usually called glands. They are tiny oval structures usually between 1mm and 25mm in length, which filter the lymph, extracting the bacteria, and defending the body by fighting against infection, destroying any harmful bacteria. Lymphocytes are found in the lymph glands, and produce the antibodies which fight against the invasion of any micro-organisms.

Lymph nodes of the head

- **Buccal group:** these drain the eyelids, nose, skin and face.
- **Mandibular group:** drains the lips, chin, nose and cheeks.
- **Mastoid group:** drains the temple area and skin of the ears.
- **Occipital group:** drains the back of the scalp and upper neck area.
- **Sub-mental group:** drains the lower lip and chin.
- **Parotid group:** drains the ears, eyelids and nose.

Lymph nodes of the neck

- **Superficial cervical group:** drains the back of head and neck.
- **Lower deep cervical group:** drains the back area of neck and scalp.

Lymph nodes of the neck and chest

These nodes are in the armpit: Axilla glands drain the various areas of the chest and arms.

The Lymphatic System: A system of fluid balance and immune defence

When plasma passes out of capillary walls into the surrounding tissues, it is called interstitial fluid and provides the necessary nourishing substances for cellular life.

This interstitial fluid contains proteins that help draw fluid across the capillary wall.

Here, it will be drawn to the hyaluronic acid content of the glycosaminoglycans gel, aiding the support of collagen, elastin fibrils and the many other cells that reside in the dermis. Some fluid will move up through the dermal/epidermal junction towards the epidermis to aid the hydration of the epidermal cells and become part of the trans-epidermal water loss (TEWL) of the epidermis.

After bathing the cells, 90-98% of the interstitial fluid re-enters the capillaries, returning to the heart through the veins. The other 2-10% returns via the lymph capillary system, which is a system of dead-end capillaries that extend into most tissues, paralleling the blood capillaries.

Lymph fluid is the nourishing fluid of the cells. The lymphatic system is not only a reservoir of organic fluids and defence system against microbial invasion. Lymph fluid is the healer of wounds, the builder of tissues and regenerator for the body.

Nutritional Function

It is in the lymphatic system that the daily metabolism, the combustion and absorption of nourishing elements coming from the intestine happen. Lymph fluid carries lipids and lipid-soluble vitamins absorbed from the gastrointestinal tract. This is one of the next most important functions of the lymphatic system.

The absorption of fats and fat-soluble vitamins from the digestion system and the subsequent transport of these substances to the venous circulation makes the lymphatic system invaluable to the health of the body and, of course, the skin. Particularly the absorption of beta-carotene (Vit A)

Metabolism of the Lymphatic System

Lymph flows slowly; there is no 'pump' to accelerate the flow, and it relies on body movement (like walking) to help with transportation. If the lymph flow is steady and regular, the result is a balanced metabolism. When we sleep or are sedentary for long periods of time, the lymphatic circulation becomes partly stopped. It has also been found fatigue, cold, over-exertion, and nervous tension will also slow it down.

When the lymph circulation slows down, waste products accumulate, and the lymph becomes viscous, with one of the first signs of an impaired lymphatic system is swelling in the hands and feet after periods of standing or sitting. Another indication is puffy eyes in the morning.

Because there are lymphatic capillaries not only in the sheaths around the nerves but also between the nerve bundles, the stagnant lymph exerts pressure, producing a feeling of pain on the tissues and nerve extremities. In addition, the stagnation of the fluid will produce a feeling of fatigue and heaviness in the limbs.

The effect of an impaired lymphatic system on skin cells of the dermis is very detrimental to cell renewal and repair. As cells dry out and vital functions like wound healing diminish, the tissues are poisoned by their own waste products.

As well as regular body movement, the lymphatic system relies on a regular fluid intake, as the internal hydration of the body must be maintained at an optimum level for the formation of these vital fluids. So, it is good to advise clients to increase water intake before and after treatment.

In conditions of poor body hydration, the supply of the vital interstitial fluids to the dermis is greatly reduced. This reduction of dermal fluid will have a knock-on effect on the epidermis, resulting in poor dermal/epidermal cell function and enzyme activity.

When addressing any skin condition that is related to hydration, treatment must begin with the systems that are responsible for the movement and maintenance of body fluids. Most importantly, the lymphatic system and the circulatory system they work together and are equally important.

Impaired Lymphatic System

Swelling of the ankles, feet and fingers as an early physical indication of an impaired lymphatic system. Ankles are the first place to look and to test these areas for fluid retention; use the simple toxaemia test of pressing into the swelling, which will be apparent just above the ankle bone.

Do a very firm press into the swelling for about 30 seconds, then a quick release. Count how long it takes for shape and colour to return to the depressed area. If you have counted over 3 seconds, the probability you have an impaired lymphatic system is high.

If a client has an impaired lymphatic system, advise them there will be fluid retention around the eyes for longer. This is normal

The Cardiovascular System

All body systems are linked by the cardiovascular system, a transport network that affects every part of the body. To maintain homeostasis, the cardiovascular system must provide for the rapid transport of water, nutrients, electrolytes, hormones, enzymes, antibodies, cells, and gases to all cells. In addition, it contributes to body defences and the coagulation process and controls body temperature. The term cardiovascular refers to the cardiac (heart) muscle, the vascular system (a network of blood vessels that includes veins, arteries, and capillaries), and the circulating blood. Thus, the three primary components of the cardiovascular system are:

- Heart

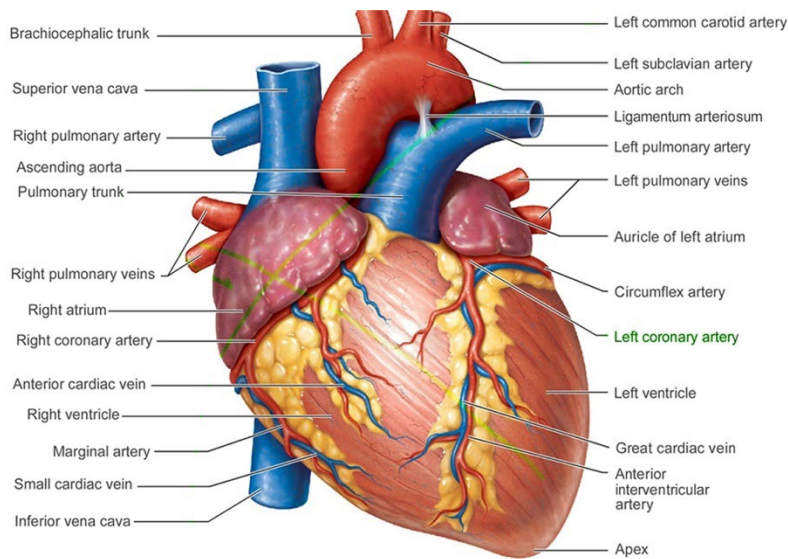
- Circulating blood
- Blood vessels (the circulatory system)

Organ/Structure	Primary Functions
Heart	• Muscular organ about the size of an adult's closed fist • Contractions push blood throughout the body • The average heart beats 60 to 80 times per minute
Arteries	• Transport blood from the right and left chambers of the heart to the entire body • Large arteries branch into arterioles the farther they are from the heart • Carry oxygenated blood that is bright red in colour • Have thicker elastic walls than veins do • Have a pulse • Are located deep in muscles/tissues
Veins	• Blood is transported from peripheral tissues back to the heart and lungs • Large veins branch into venules in the peripheral tissues • Deoxygenated blood is carried back to the lungs to release carbon dioxide • Carry blood that is normally dark red in colour • Have thinner walls than arteries; walls appear bluish • Valves prevent the backflow of blood • Are located both deep and superficially (close to the surface of the skin)
Capillaries	• Connect arterioles with venules via microscopic vessels • Oxygen and carbon dioxide, nutrients, and fluids in tissue capillaries are exchanged • Waste products from tissue cells are passed into capillary blood, then onto removal from the body
Circulating Blood	• Carry blood that is a mixture of arterial blood and venous blood • Oxygen and carbon dioxide, nutrients, and fluids are transported by circulating blood • Waste products are removed • Nutrients are disbursed • Regulates body temperature and electrolytes • Regulates the blood-clotting system

The Heart

The human heart is a muscular organ about the size of a man's closed fist. The heart contains four chambers and is located slightly left of the midline in the thoracic cavity. The two atria are separated by the interatrial septum (wall), and the interventricular septum divides the two ventricles. Heart valves are positioned between each atrium and ventricle so that blood can flow in one direction only, thereby preventing backflow. The right atrium of the heart receives O₂-poor blood from two large veins: the superior vena cava and the inferior vena cava. The superior vena cava brings blood from the head, neck, arms, and chest; the inferior vena cava carries blood from the rest of the trunk and the legs. Once the blood enters the right atrium, it passes through the heart valve (right atrioventricular, or tricuspid, valve) into the right ventricle. When blood exits the right ventricle, it begins the pulmonary circuit—it enters the right and left pulmonary arteries. Arteries of the pulmonary circuit differ from those of the systemic circuit because they carry deoxygenated blood.

Like veins, they are usually shown in blue on colour-coded charts. These vessels branch into smaller arterioles and



capillaries within the lungs, where gaseous exchange occurs (O_2 is picked up, and CO_2 is released). From the respiratory capillaries, blood flows into the left and right pulmonary veins and then into the left atrium. The left atrium also has a valve (left atrioventricular, bicuspid, or mitral valve). Blood flows through the mitral valve into the left ventricle. When blood exits the left ventricle, it passes through the aortic semilunar valve and into the systemic circuit by means of the ascending aorta. The systemic circuit carries blood to the tissues of the body. If a valve malfunctions, blood flows backwards and a heart

murmur results. The right side of the heart pumps O_2 poor blood to the lungs to pick up more O_2 ; the left side pumps O_2 -rich blood toward the legs, head, and organs. The heart's function is to pump sufficient amounts of blood to all cells of the body by contraction (systole) and relaxation (diastole). Because the lungs are close to the heart, and the pulmonary arteries and veins are short and wide, the right ventricle does not need to pump very hard to propel blood through the pulmonary circuit. Thus, the heart wall of the right ventricle is relatively thin. On the other hand, the left ventricle must push blood around the systemic circuit, which covers the entire body. As a result, the left ventricle has a thick, muscular wall and a powerful contraction.

Blood pressure increases during ventricular systole and decreases during ventricular diastole. Blood pressure not only forces blood through vessels but also pushes it against the walls of the vessels like air in a balloon. Therefore, it can be measured by how forcefully it presses against vascular walls.

The average heart beats 60 to 80 times per minute. Children have faster heart rates than adults, and athletes have slower rates because more blood can be pumped with each beat. During exercise, the heart beats faster to supply muscles with more blood. During and after meals, it also beats faster to pump blood to the digestive system. During a fever, the heart pumps more blood to the skin surface to release heat. Remember that all responses are designed to maintain homeostasis. The heart rate (pulse rate) is measured by feeling for a pulse and counting the pulses per minute.

The Vessels and Circulation

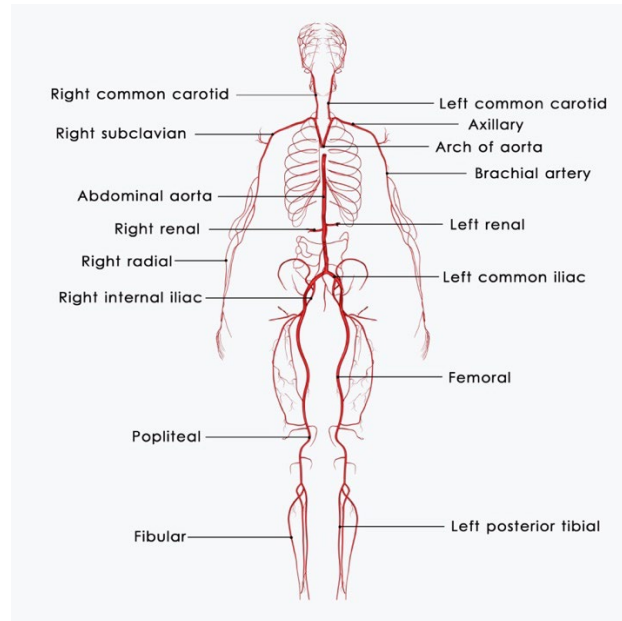
Three kinds of blood vessels exist in the human body:

- Arteries
- Veins
- Capillaries

This intricate system travels to every inch of the human body through repeatedly branching vessels that get smaller and smaller as they move away from the heart (arteries) and then get larger again as they return toward the heart (veins). The largest artery (aorta) and veins (venae cavae) are approximately 1 inch wide.

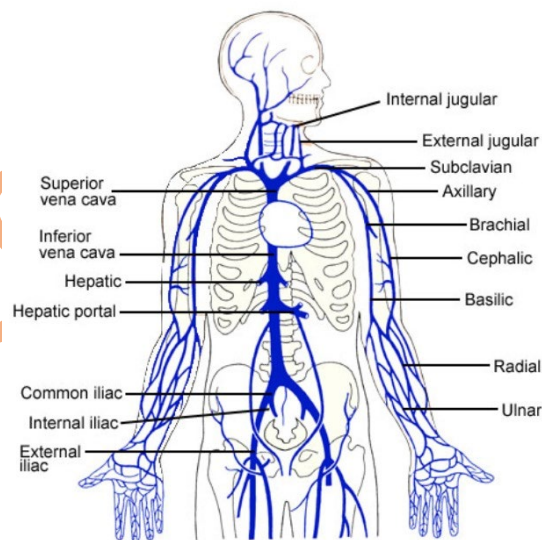
Arteries

Arteries are highly oxygenated vessels that carry blood away from the heart (efferent vessels). They branch into smaller vessels, called arterioles, and into capillaries. Arteries appear brighter red in colour, have thicker elastic walls than veins do, and have a pulse.



Veins

Blood is carried toward the heart by the veins (afferent vessels). It is remarkable that the blood in veins flows against gravity in many areas of the body; these vessels have one-way valves and rely on weak muscular action to move blood cells. The one-way valves prevent the backflow of blood. All veins (except the pulmonary veins) contain deoxygenated blood. Veins appear bluish in colour under the skin and have thinner walls than arteries. You should become familiar with the principal veins of the arms and legs. The antecubital area of the forearm is most commonly and generally the largest and best-anchored vein. Others in the antecubital area that are acceptable are the basilic vein and the cephalic vein.



Capillaries

Capillaries are tiny microscopic vessels that connect or link arteries (arterioles) and veins (venules) and may be so small in diameter as to allow only one blood cell to pass through at any given time. They are the only vessels that permit the exchange of gases (O_2 and CO_2) and other molecules between blood and surrounding tissues.

Capillaries do not work independently but are a part of an interconnected network. Each arteriole ends in dozens of capillaries (capillary bed) that eventually feed-back into a venule (when gas/ the nutrient exchange has been completed). Blood in the capillary bed is a mixture of arterial and venous blood.

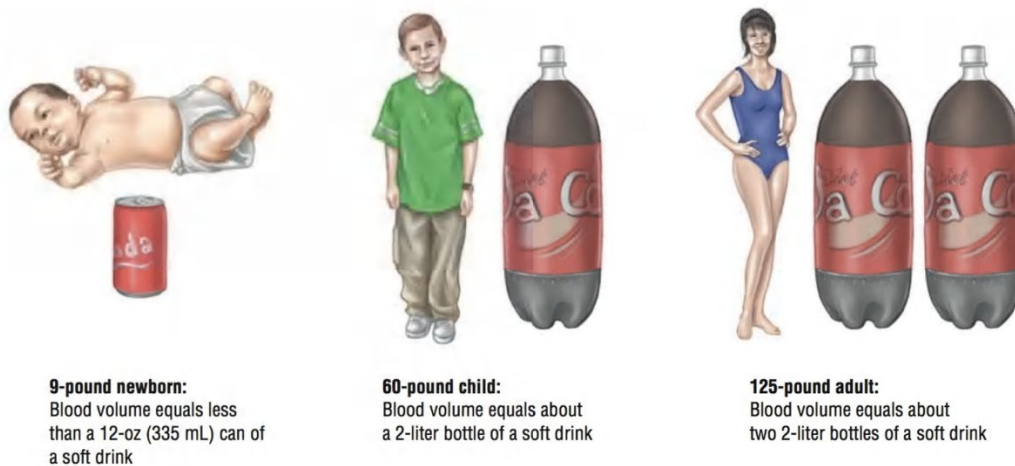
Capillary bleeding occurs slowly and evenly because of the smaller size of the vessels and the low pressure within the vessels. Capillary bleeding is usually considered minor and is easily controlled with slight pressure, or sometimes bleeding stops without intervention. Capillary blood is a colour between the bright red of arterial blood and the dark red of venous blood.

The Blood

Circulating blood provides nutrients, oxygen, chemical substances, and waste removal for each of the billions of individual cells in the body and is essential to homeostasis and to sustaining life. Any region of the body that is deprived of blood and O₂ soon becomes oxygen-deficient, and the tissues may die within minutes. This condition is called hypoxia.

Human bodies contain approximately 4.73 litres of whole blood, which is composed of water, solutes (dissolved substances), and cells. The volume of blood in an individual varies according to body weight; for instance, adult men usually have 5 to 6 litres of whole blood, whereas adult women usually have 4 to 5 litres.

Abnormally low or high blood volumes can seriously affect other parts of the cardiovascular system. Whole blood is normally composed of approximately 2.84 litres, or about 55 to 60 percent, of plasma and 1.89 litres, or about 40 to 45 percent, of cells. Thus, if a blood specimen is withdrawn into a test tube from a vein and centrifuged, about 55 percent will be plasma, and 45 percent will be formed elements (cells). The plasma portion contains approximately 92 percent water and 8 percent solutes. Solutes include proteins, such as albumin (maintains water balance in the blood); fibrinogen (for blood clotting); metabolites, such as lipids; glucose; nitrogen wastes; amino acids; and ions, such as sodium (Na), potassium (K), calcium (Ca), magnesium (Mg), and chloride (Cl).



Haemostasis and Coagulation

Haemostasis (not to be confused with homeostasis) is a complex series of processes in which platelets, plasma, and coagulation factors interact to control bleeding while at the same time maintaining circulating blood in the liquid state. It enables the human body to retain blood in the vascular system by preventing blood loss. When a small blood vessel is injured, the haemostatic process (clotting response) repairs the break and stops the haemorrhage by forming a plug or blood clot.

This intricate process involves the following phases:

- Vascular phase—Once a blood vessel is injured, a rapid constriction of the vessel (vasoconstriction) decreases the blood flow to the surrounding vascular bed.

- Platelet phase—Platelets degranulate, clump together and adhere to the injured vessel in order to form a plug and inhibit bleeding.
- Coagulation phase—Many specific coagulation factors (including fibrinogen, clotting factors, and calcium) are released and interact to form a fibrin meshwork or blood clot. This clot seals off the damaged portion of the vessel.
- Clot retraction—This occurs when the bleeding has stopped. The entire clot retracts to heal torn edges by bringing them closer together.
- Fibrinolysis—When the final repair and regeneration of the injured vessel occurs, the clot slowly begins to break up (lysis) and dissolve as other cells carry out further repair. The entire process is fast, intricate, self-sustaining, and remarkable.

It is important to focus briefly on the coagulation process (the third phase), which is a result of numerous coagulation factors. For simplicity, it is divided into two systems: intrinsic and extrinsic. All coagulation factors required for the intrinsic system are contained in the blood, whereas the extrinsic factors are stimulated when tissue damage occurs. For example, blood vessels are lined with a single layer of flat endothelial cells and are supported by collagen fibres. Normally, endothelial cells do not react with or attract platelets; however, they do produce and store some clotting factors. When the clotting sequence begins due to a vessel injury, endothelial cells react with degranulated platelets in forming the fibrin plug.¹ Bleeding from small arteries and veins can be controlled by the hemostatic process; however, large- or medium-sized veins and arteries require rapid surgical intervention to prevent excessive bleeding.

The Endocrine system

The endocrine system works closely with the nervous system to control and coordinate the body's activities. It consists of the Endocrine glands and the hormones. Hormones are often referred to as 'chemical messengers', which the glands secrete and/or store. They communicate between:

- a. Two endocrine glands to stimulate one gland to release a hormone.
- b. An endocrine gland and a target organ.

Each gland is rich in capillaries, which cluster around the glands so that hormones can be easily secreted and pass into the bloodstream. Hormones attach to plasma proteins in the blood and are transported around the body to their target organs. Hormones may affect a number of target organs.

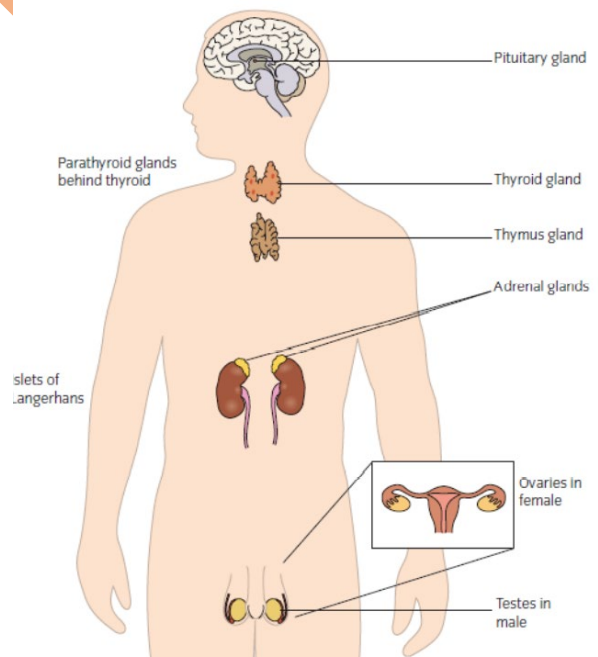
Hormones are secreted by the hormone glands into the blood stream; from there they are circulated around the body affecting the different organs. These organs are known as target organs.

The endocrine system – supply and demand

The amount of hormone released by an endocrine gland is determined by the need for the hormone at any given time.

The body is normally regulated so that hormones are not over or under produced (homeostasis). There are times when the regulating mechanism does not operate properly and hormonal levels may become too high, too low or not secreted at all. When this happens endocrine disorders occur.

Some hormones are associated with long-term changes, for instance the growth hormone, as this takes place over years. Others have fast changes, such as the adrenaline, which prepares the body very quickly for sudden stress.



Endocrine glands and their functions

1. The pituitary gland is situated in the brain and is known as the master gland, as it acts on other endocrine glands (tropic hormones). It secretes follicle stimulating hormone (FSH), luteinizing hormone (LH), which controls reproduction, and anti-diuretic hormone (ADH), which affects the water balance.
2. The thyroid gland is situated in the neck, on either side of the trachea, and secretes thyroxine, which controls the metabolism.
3. The parathyroid gland is made up of four small glands which are situated on the posterior of the thyroid gland. It secretes the para hormone, which controls the blood calcium levels.
4. The pancreas secretes insulin from the pancreatic islets of langerhans. This controls the blood sugar level.
5. The adrenal glands consist of two triangle shapes that lie on top of the kidney. They are made of two parts:
 - a. medulla. This secretes adrenalin, which is released at times of sudden stress.
 - b. cortex. This secretes:
 - glucocorticoids, which reduces stress responses such as inflammation
 - aldosterone, which controls the level of potassium and sodium in the blood. This hormone can also cause excess oedema (water retention)
 - corticosteroids (oestrogens and androgens) which controls the function of the sex organs and the development of sex characteristics at puberty.
6. Ovaries. There are two of these and they are situated below the kidneys. They secrete the hormones oestrogen and progesterone, which control female reproductive events such as puberty, menstruation, pregnancy and the menopause. This gland also influences the female shape, such as fat being stored in the breasts, hips and thighs.
7. Testes glands are situated in the groin of a male and are contained in a sac named the scrotum. These glands secrete testosterone, the function of which is to control the sex characteristics in puberty as well as produce sperm. It also causes facial and body hair to develop and muscular development to take place, which will influence the body shape

The Endocrine glands

Pituitary gland

Often referred to as the master gland, as it produces hormones that control the function of other endocrine glands. This gland is the size of a pea and sits in a hollow in the base of the skull, beneath the brain and behind the nose. Attached to the hypothalamus which controls its activity.

It has two parts:

Anterior – connects to the brain by blood vessels and consists of gland cells.

Posterior – part of brain and secretes directly into the bloodstream under the command of the brain.

The thyroid gland

Located in the front of the neck just below the larynx. Has a distinct butterfly shape with two lobes – one on each side of the trachea. Reliant on supplies of iodine in the diet to function effectively.

Parathyroid

Located in the front of the neck, just below the larynx and just behind the thyroid gland. There are four of these small pea-sized glands – two glands lie behind each wing of the thyroid.

The adrenals (suprarenal) glands

There is one adrenal gland on the top of each kidney. Each gland has two parts: • outer adrenal cortex • inner adrenal medulla.

Pineal gland

Located deep in the middle of the brain where the two halves meet. It sits above the thalamus.

Thymus

Located behind the sternum, between the lungs. Predominantly active during puberty then atrophies. Helps the body against autoimmunity and has a vital role in the lymphatic system.

Pancreas (Islets of Langerhans)

The pancreas is a large gland, about 15cm long, sitting alongside the stomach and small bowel. Both an exocrine and endocrine gland, it also plays an important role in digestion. The Islets of Langerhans contain endocrine tissue. These are clusters of cells making up 1–2% of the pancreas.

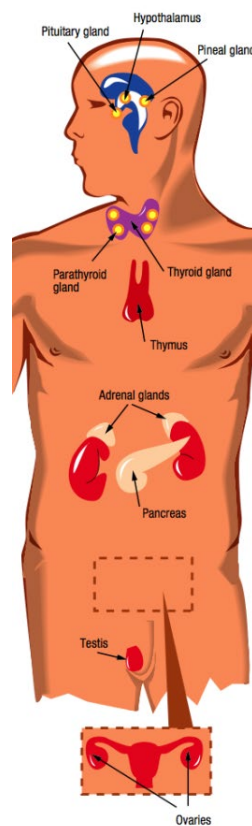
Ovaries

Small oval organs about 4cm in size. They lie on either side of the uterus, held in place by ligaments – they are not attached to the fallopian tubes. They produce ova and are part of the female reproductive system.

Testes

The two male gonads lie in the scrotal sacs – one each side of the penis. They form part of the male reproductive system.

Endocrine System



Gland	Hormone	Type	Action
Hypothalamus	Oxytocin	Peptide	Moves to posterior pituitary for storage
	Antidiuretic hormone	Peptide	Moves to posterior pituitary for storage
	Regulatory hormones of anterior pituitary hormones		Act on anterior pituitary to stimulate or inhibit hormone production
Pituitary gland	Oxytocin	Peptide	Initiates labor, initiates milk ejection
	Antidiuretic hormone	Peptide	Stimulates water resorption by kidneys
	Growth hormone	Protein	Stimulates body growth
	Prolactin	Protein	Promotes lactation
	Follicle-stimulating hormone	Glyco-protein	Stimulates follicle maturation and production of estrogen; stimulates sperm production
	Luteinizing hormone	Glyco-protein	Triggers ovulation and production of estrogen and progesterone by ovary; promotes sperm production
	Thyroid-stimulating hormone	Glyco-protein	Stimulates release of T ₃ and T ₄
Thyroid gland	Adrenocorticotrophic hormone	Peptide	Promotes release of glucocorticoids and androgens from adrenal cortex
	T ₃ (Triiodothyronine)	Amine	Increases metabolism, blood pressure, regulates tissue growth
	T ₄ (Thyroxine)	Amine	Increases metabolism, blood pressure, regulates tissue growth
	Calcitonin	Peptide	Childhood regulation of blood calcium levels through uptake by bone
Parathyroid gland	Parathyroid hormone	Peptide	Increases blood calcium levels through action on bone, kidneys and intestine
Pancreas	Insulin	Protein	Reduces blood sugar levels by regulating cell uptake
	Glucagon	Protein	Increases blood sugar levels
Adrenal glands			
	Adrenal medulla		
	Epinephrine	Amine	Short-term stress response: increased blood sugar levels, vasoconstriction, increased heart rate, blood diversion
Adrenal cortex			
	Norepinephrine	Amine	Short-term stress response: increased blood sugar levels, vasoconstriction, increased heart rate, blood diversion
	Glucocorticoids	Steroid	Long-term stress response: increased blood glucose levels, blood volume maintenance, immune suppression
Gonads			
	Mineralocorticoids	Steroid	Long-term stress response: blood volume and pressure maintenance, sodium and water retention by kidneys
Testes	Androgens	Steroid	Reproductive maturation, sperm production
Ovaries	Estrogens	Steroid	Reproductive maturation, regulation of menstrual cycle
	Progesterone	Steroid	Regulation of menstrual cycle
Pineal gland	Melatonin	Amine	Circadian timing
Thymus	Thymosin	Peptide	Development of T lymphocytes

Muscles

Functions of muscles-

1. **Generate skeletal movement:** skeletal muscle contractions pull on tendons and move the bones/joints of the skeleton.
2. **Support posture and body position:** Contraction in our skeletal muscles maintains body posture. Without constant muscular activity we could not even sit upright or stand!
3. **Strengthens and supports soft tissues:** the stomach wall and the floor of the pelvis consist of layers of skeletal muscle that support the weight of organs and prevent injury to internal tissues.
4. **Protects entrances and exits:** sphincter muscles encircle the openings of the digestive and urinary system. They provide voluntary control over swallowing, defecation and urination.
5. **Provides body temperature:** muscle contractions need energy; whenever energy is used in the body, some of it is converted to heat which working muscles release. This assists to maintain our body temperature within the normal range.

There are three kinds of muscle in humans: smooth, skeletal and cardiac.

1. Cardiac muscle
2. Skeletal voluntary muscle
3. Smooth involuntary muscle

1. Cardiac muscle

This is the strongest type of muscle and is a unique involuntary muscle. It is not under voluntary control but is controlled, involuntary, by nerves, which make it contract automatically. It comprises of irregular short striped cylindrical branched muscle fibres with a central nucleus.

2. Skeletal, voluntary or striated muscle

These are muscles that are under our voluntary control and contracts at will. They are cylindrical in shape with several nuclei. The muscle fibres lay parallel to each other in dark and light bands creating the appearance of strips, and is surrounded by a membrane holding them together.

3. Smooth, involuntary muscle

This muscle type is not under voluntary control and are found throughout the body within organs like the bladder, alimentary and respiratory tracts and the walls of the blood and lymph vessels. The muscle fibres are spindle shaped cells with one central nucleus and are bundled together with a connective tissue sheath.

Muscle tone

Muscle tone is the slight but continuous tension or contraction in the muscles at all times. This keeps the body upright. Without this the muscles would all relax at once and the body would collapse.

Muscle contraction

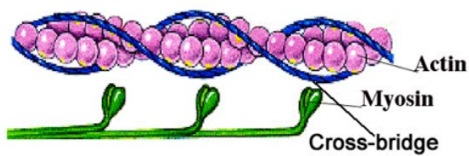
Skeletal muscles only contract when activated by the axon of a motor neuron/nerve. The nerve carries the impulse to the specific muscle fibre. The point at which a motor neuron enters the muscle is called the motor point.

Muscle fatigue

This occurs when the muscle is continuously stimulated and used a lot. This leads to the muscle contraction gradually weakening until it can no longer contract. This is due to the build-up of lactic acid and carbon dioxide which are waste products (this can often be felt as a burning sensation in the muscle) and lack of adenosine triphosphate which provides the muscle with energy.

Sliding filament theory

A sliding movement occurs within the muscle's contractile fibres when it contracts. Actin protein filaments move inwards towards the myosin and the two filaments merge. This causes the fibres of the muscle to shorten and thicken and pull on their attachments (bones and joints) to achieve the movements required.



It is a very similar action as using a row going through water. The action of pulling on the row moves the boat forward.

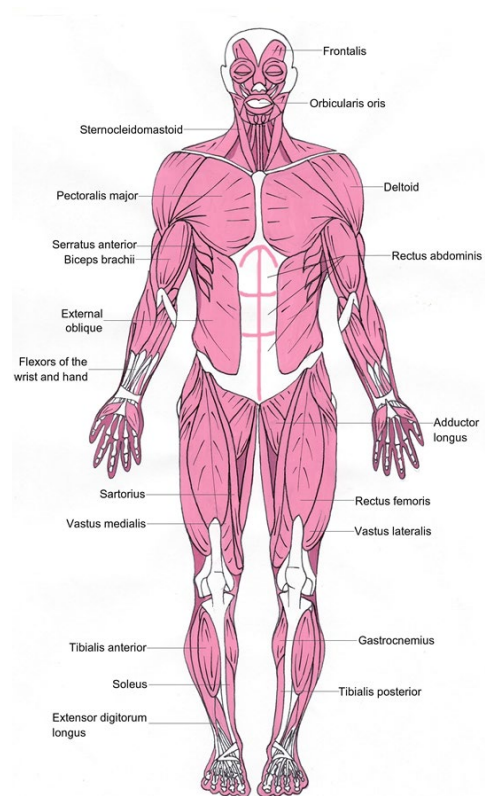
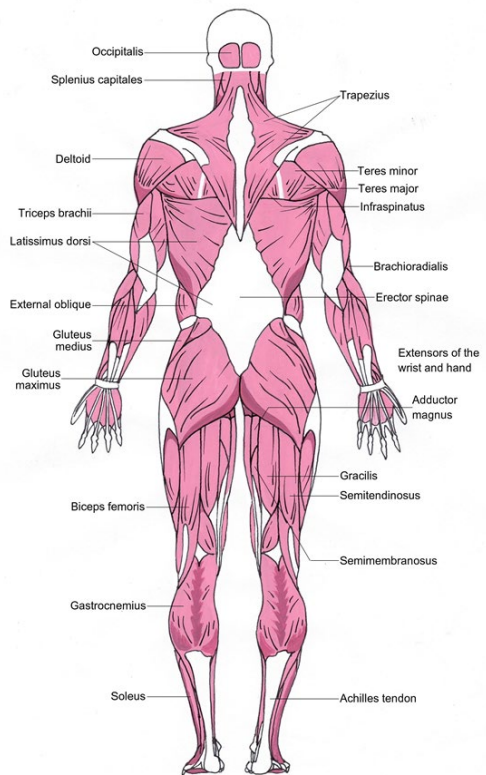
When relaxing, the muscle fibres return to their normal shape.

Muscle tone

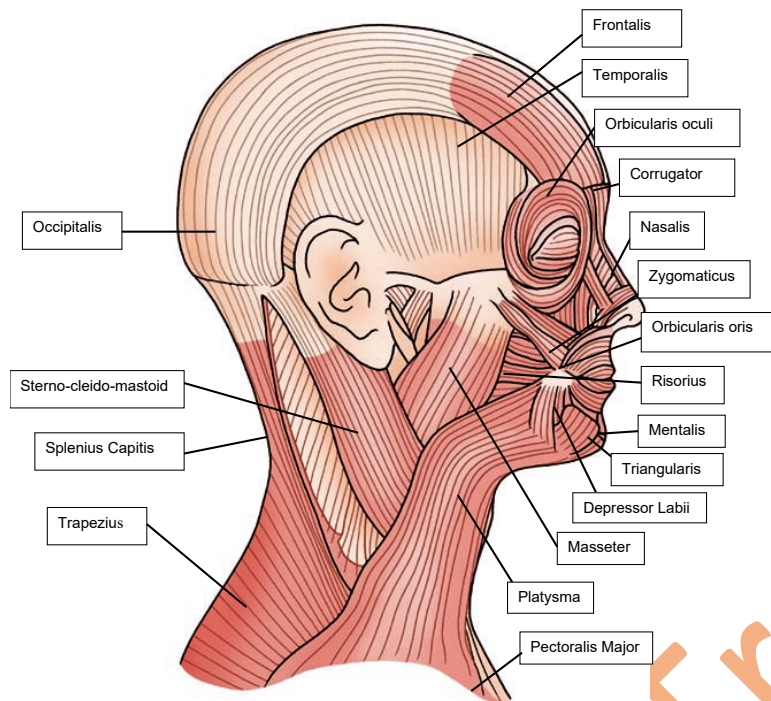
Even when muscles are relaxing, a number of muscle fibres will still be in partial contraction – this is what is referred to as muscle tone.

Muscle tone is often described as being either flabby or firm. A muscle that has less than normal tone is described as being a flaccid muscle; if this type of muscle is not used it will start to waste away (atrophy). A flaccid muscle may also be caused by damage to the nerve supply.

Firm muscle tone can be achieved by exercising. Muscle tone is important in maintaining posture, as it assists the body in standing up and keeps the muscles prepared for action.



Muscles of the face



On the face the muscles and the skin are connected.

This causes facial expressions and also explains how wrinkles are formed on the face.

Muscle	Location	Action
Frontalis	Across the forehead	Wrinkles the forehead and raises eyebrows creating a surprised expression
Orbicularis oris	Surrounding the mouth	Closes and opens the mouth
Orbicularis oculi	Surrounding the orbit of the eye	Closes and opens the eye as in winking and blinking
Masseter	Runs at an angle down the face from the cheek bone to the jaw	Lifts, lowers and closes the jaw aiding mastication by exerting pressure on teeth
Buccinator	Forms the main muscle of the cheek	Compresses the cheeks as in blowing
Zygomatic	Runs down cheek to corner of mouth	Pulls the corners of mouth upwards and sideways
Risorius	Corner of the mouth above Buccinator muscle	Pulls the corner of the mouth upwards and sideways as in grinning

Muscles of the neck and shoulder

Muscle	Location	Action
Levator Scapula	On the side and posterior surface of the neck	Elevates the scapula and shoulders
Erector Spinae	Either side of spine column	Extends the spine and keeps the body upright
Splenius Capitus	On the posterior surface of the neck	Bring the head upright. Extends head and neck. Rotates and laterally bends neck
Sterno mastoid	Either side of the neck	Individually rotates the head to one side together pulls the chin onto the chest
Platysma	Front and side of the neck, down to collar bones	Helps to draw down mandible and lower lip and wrinkles skin of neck
Trapezius	Posterior surface of upper neck and shoulders	Lifts clavicle. Shrugs shoulders. Raises and rotates shoulders
Deltoid	Caps the shoulder on the anterior and posterior surfaces	Abducts the arm. Draws the arm backwards and forwards
Biceps	Anterior surface of upper arm	Flexes the forearm
Triceps	Posterior surface of upper arm	Extends the forearm

Bones

Bone is the hardest structure in the body. It protects the underlying structures and supports the softer tissues.

Functions of the skeletal system

1. Supports the soft tissues as a framework
2. Protection for internal organs and brain
3. Assists in movement
4. Storage of minerals such as calcium and phosphorus
5. Production of blood cells from the bone marrow

Bone formation

The process of bone formation is called ossification. Specialised cells called osteoblasts make bone tissue, which secretes collagen to form a strong framework. Minerals such as calcium and salts are deposited within the bone where it hardens and becomes calcified. The osteoblasts become trapped in the bone tissue and become osteocytes. The osteoblasts continue to make new bone tissue to replace the old as it is broken down.

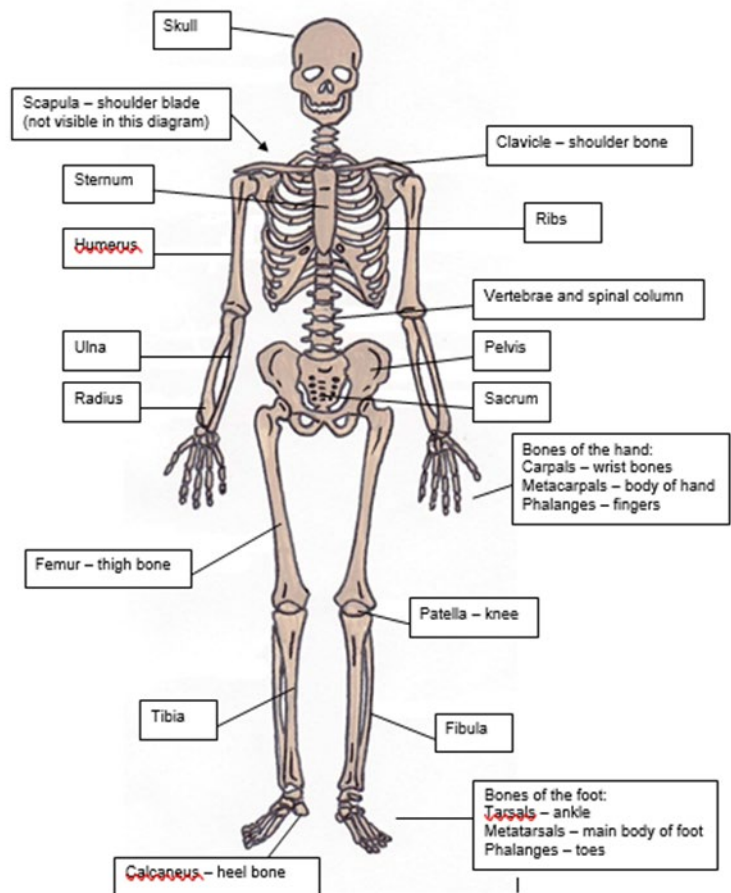
Types of bones

- Long bones – found in the arms and legs
- Short bones – found in the wrist and ankles
- Flat bones – plate-like, protect the brain
- Irregular bones – found in the spine

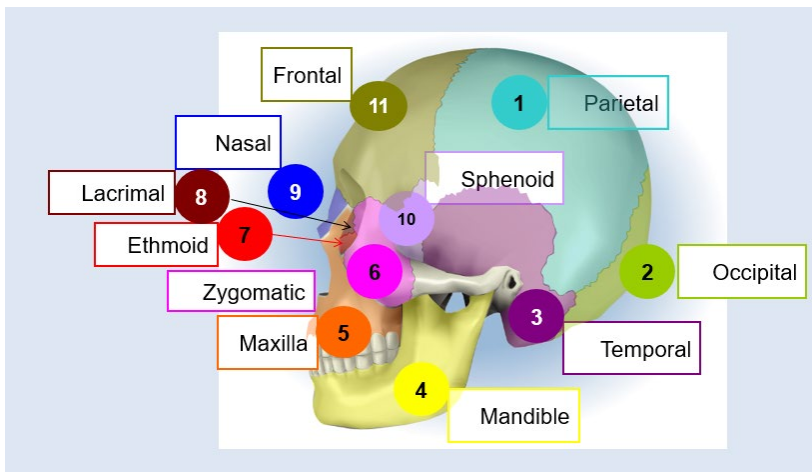
Composition of bone

Compact or dense bone is hard and forms the outer part of bones. Spongy or cancellous bone lies inside the compact bone and is porous with tiny holes.

The skeleton



Bones of the head, face and neck



The cranium is made up of 8 cranial bones and 14 facial bones. The shoulder girdle comprises of four bones, along with three bones in the arm.

These bones protect the brain and support other structures such as the eyes and teeth etc. All the bones are joined together by sutures which make the joints immovable after childhood. The cranium is attached to the body via the vertebral column. The weight of the head rests on the neck and shoulder girdle.

The skull or cranium

The function is to protect the brain and is made up of eight fused bones and rests on the spinal column.

- There are two parietal bones which form the upper sides and crown of the head.
- Just below the parietal bones lie two temporal bones which form the sides of the skull down to the ears and part of the cheekbones.
- One sphenoid bone which lies just in front of the temporal bones and joins the skull with the facial bones.
- One frontal bone that forms the forehead and front of the skull.
- One ethmoid bone which forms the nasal cavities between the eye sockets.
- One occipital bone which forms the back and base of the skull and has a large hole through which the spinal cord passes.

The facial bones

Comprises fourteen bones on either side of the face. There are:

- Two zygomatic bones which form the cheekbones of the face.
- Two maxillae bones which are the largest bones of the face and form the upper jaw.
- One mandible bone which forms the lower jaw, it is the only moveable bone.
- Two nasal bones these are very small bones which form the bridge of the nose.
- Two lacrimal bones which form the inner walls of the eye socket and are the smallest of the facial bones.
- Two turbinate bones form the outer walls of the nasal cavities.
- Two palatine bones. These two L-shaped bones form the roof of the mouth and floor and side walls of the nose.
- One vomer forms part of the nasal septum dividing the wall of the nose.

The bones of the neck and shoulder girdle

Comprises of six bones which join the upper limbs to the chest.

- The Atlas: the first cervical vertebra that supports the skull.

- The Axis: the second cervical vertebra that allows the head to rotate.
- There are 7 cervical bones within the neck area and 12 thoracic vertebra form the upper and middle of the back.
- Two clavicle bones which are long thin bones located on either side of the upper body, which meet at the base of the neck and join the sternum and shoulders together.
- Two scapulae bones are large flat triangular bones which are located on either side of the upper posterior surface of the back and joined to the clavicle and humerus upper arm bone.

Foundation Wrinkle Relaxing

Botulinum Toxin

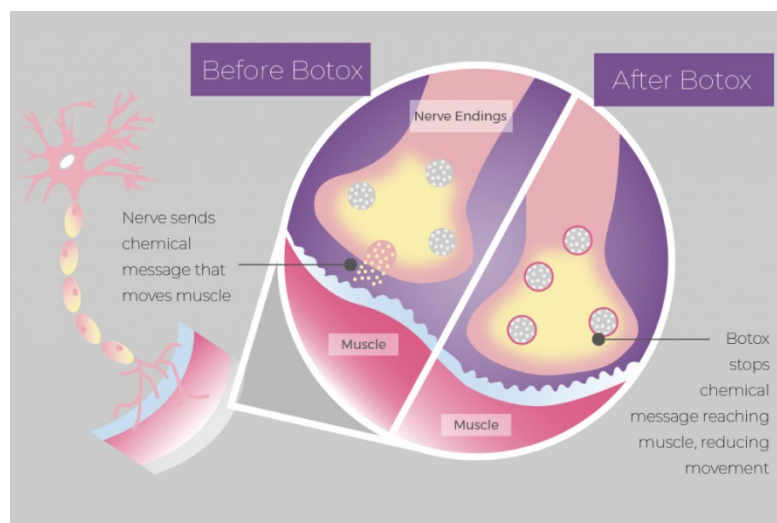
Botulinum Toxin is a neurotoxic protein. It is produced by the bacterium clostridium botulinum and other related varieties. The cosmetic form of the toxin, sometimes referred to by patients as 'Botox' is a very popular injectable treatment that temporarily reduces or eliminates facial fine lines and wrinkles. It is important to remember that Botox is a brand name, so it cannot be advertised.

History

- The toxin was first found in the 1820's by a doctor called Justinus Jerner who was researching the cause of death of Germans who consumed sausage. He deduced it was a food-borne botulinum toxin.
- In the 1930's the Japanese fed their prisoners of war C botulinum cultures which led to fatal effects.
- In the 1960's A San Francisco ophthalmologist became the first to work on a standardised botulinum toxin in preparation for therapeutic purposes. It was used in humans to treat crossed eyes and uncontrollable blinking.
- In December of 1989 a company called Allergan manufactured a product called Botox which was approved by the FDA for the treatment of facial spasms and other medical issues in patients over the age of 12 years old. Plastic Surgeon, Richard Clark, was the first to document its effect on wrinkles.
- Since 2013 botulinum toxin has been used to treat upper motor neuron syndrome, sweating, cervical dystonia, chronic migraines and facial aesthetics.
- In 2018 the global market for botulinum toxin reached over £2.9 billion.

How does it work?

- When the botulinum toxin is injected locally, it will temporarily block the chemical signal which is usually sent to make the muscle in that area move.



The Three Muscles

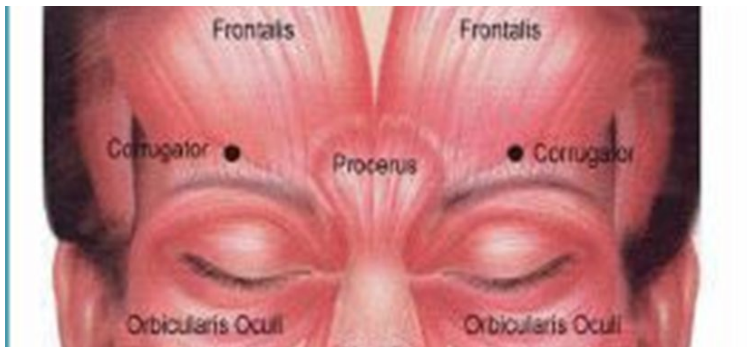
In this Foundation Wrinkle Relaxing course, you will learn how to treat the three main muscle areas on the face.

These are:

Forehead – Frontalis Muscle

Frown Lines – Glabella: treating two muscles – Procerus and Corrugator

Crow's Feet – Orbicularis Oculi Muscle



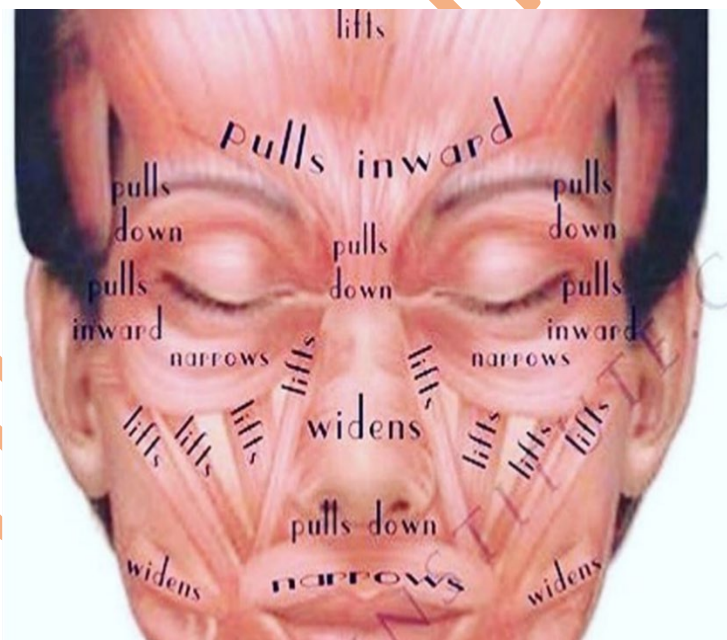
Lines and Wrinkles

Static Lines and Wrinkles are there when the face is at rest.

Dynamic Lines and Wrinkles are there when we express our face.

Botulinum Toxin can only treat dynamic lines and wrinkles. It is good for softening static lines and wrinkles but will not completely diminish them. It is important to know your clients' expectations before carrying out the treatment. This should be fully explained to them.

The diagram below shows how the muscles on the face move:



○ As you can see on the diagram the frontalis muscle lifts when expressing (lifting) your eyebrows. Because of this we must treat the procerus and corrugator muscles too. This is to avoid any droopiness. When treating the forehead, it must come as a pair with the frown lines.

(x2 areas)

○ The Glabella (procerus and corrugator muscles) pull down and inwards when expressing (frowning). The frown lines can be treated as a single area.

(x1 area)

○ The Orbicularis Oculi muscles also pull down and inwards when expressing (smiling). This means that they can be treated as a single area.

(x1 area)

What is meant by Prescription Only Medication (POM)?

Some aesthetic procedures require the use of prescription only medication (POM). The Royal Pharmaceutical Society (RPS) has developed a competency framework that is for both medical and non-medical settings (The Royal Pharmaceutical Society, 2021). This covers the prescribing, use, recording and storage of control drugs. The JCCP has also provided clarification on the use of unlicensed and off-license prescribing (Joint Council of Cosmetic Practitioners, 2021)

* Joint Council of Cosmetic Practitioners, 2021. *JCCP.org*. [Online], The Royal Pharmaceutical Society, 2021. The Royal Pharmaceutical Society. [Online]

Who can prescribe?

Prescription-only medicines, such as Botulinum Toxin (Botox®), must be prescribed by a qualified and registered, within the country they are practicing in, health professional. This may be a GP, hospital doctor, dentist, nurse, pharmacist, optometrist, physiotherapist or podiatrist.

Which drugs (for aesthetics) come under POM?

Treatments that involve the use of prescription-only medication (POMs). Botulinum toxin, often referred to as Botox®, or Hyaluronidase (Hyalase®) for dissolving filler, are the most common POMs required. Other POMs include vitamins (B12, Biotin, C, D) for infusions or injections and lidocaine for painkilling.

Legislation related to POMs-

The legislation that controls and limits the supply and use of medicines, of all types, is the Human Medicines Regulations (2012), implemented by the Medicines and Healthcare Regulatory Agency (MHRA). There are many parts of the Human Medicines Regulations that are relevant to cosmetic practice, but section 214 of this legislation reads -

- A person may not parenterally administer a prescription-only medicine unless the person is -
(b) acting in accordance with the directions of an appropriate practitioner* (Parliament, 2012)

*In this instance the appropriate practitioner will be the prescriber.

Currently, legislation does not provide a requirement to the legal enforcement of face-to-face consultations (JCCP, 2022).

Face-to-face consultations-

Many professional statutory regulators like the General Medical Council (GMC), the General Dental Council (GMD), the Nursing and Midwifery Council (NMC), the Royal Pharmaceutical Society (RPS), the JCCP and the CPSA (The Cosmetic Practice Standards Authority) made the decision not to approve or allow remote prescribing of any injectable prescription medicine or medical device (dermal filler) when used for non-surgical cosmetic procedures (JCCP, 2022). These regulators are overseen by the Professional Standards Authority.

As medical professionals are members or associated with their corresponding statutory regulator, they must follow the regulations that they set. Therefore, if the regulator states face-to-face consultations must be completed the prescriber must adhere to this.

Working Collaboratively with a prescriber.

If a prescriber is required, to be able to administer the treatment, then this is an example of working collaboratively with a medic. Prescribers are professionally accountable for the administration of POMs that they prescribe, even if they are not the ones that administer the treatment (JCCP, 2021).

The importance of working collaboratively (medics and non-medics) is to ensure safer practice. Referrals, to a prescriber may be needed if complications (vascular occlusion (VO), infection, ptosis) occur after a treatment has been administered. As the prescriber, they are also responsible for the client's safety and well-being.

Ensuring a client's safety and well-being are governed by a mix of professional standards and professional ethics. Both of these professional guidelines are enforceable within the boundaries of legislation. For example, from the 1st of October 2021 it became an illegal offense to book an appointment, or administer botulinum

toxin, or filler for a cosmetic purpose, to a person under 18 in England (General Pharmaceutical Council, 2021). Ethically, it is deemed as anyone under 18 is a minor and legally cannot make the decision to alter their appearance using cosmetic aesthetic practices.

Finding a prescriber

Prescribers can often be found through apps/providers like 'faces' or you may have already found one through your own research. Prescribers must also be trained for the treatment you plan to administer. Prescribers will also ask to see your certificates/proof of training as well as your insurance.

Advertising

Advertising is permitted within the aesthetics industry but there are strict regulations that must be met to ensure that the advertisements are legal and ethical (JCCP, 2022).

There are different rules to follow, regarding advertising, on different platforms. The Advertising Standards Authority (ASA) is the UK's independent regulator for advertisements and ensures that advertisers are following the advertising codes. The Committee of Advertising Practice (CAP) and Broadcast Committee of Advertising Practice (BCAP) are the organizations that write the advertising codes (Advertising Standards Authority (ASA), 2022).

The CAP/ASA has written a specific guide that can be used within the aesthetics industry to assist with adherence to the advertising regulatory requirements (ASA, 2016).

To summarise this guidance-

- Adverts must be targeted to those over 18's (CAP code 12.25)- Aesthetic cosmetic procedures will alter the client's appearance. Clients have to legally be an adult, aged 18+, to give consent for the treatment to take place. Therefore, adverts mustn't be targeted where the audience can be under this age. This can be hard to isolate when posting on social media platforms, as there are no formal age checks carried out when someone signs up to a social media platform. Professional bodies, like the JCCP, produce guides for practitioners that are based on ethics (JCCP, 2021). Sponsored adverts on social media will be subject to more thorough checks and will be flagged up and potentially banned.
- Claims about product or service must not be misleading and unsubstantiated- There must be proven evidence of any claims that are made, often the producers of the products or treatment will provide this evidence. When a practitioner is considering a particular product or treatment, they must be responsible and ensure that the claims that are being made can be proven. This can be achieved by asking for proof and marketing material can be requested.
- Marketing communications and photographic evidence must not be misleading- As well as not exaggerating claims photographic evidence must not be exaggerated either. A practitioner can demonstrate ethical behaviour by not using filters on pictures that exaggerate results and if filters are used identify this.
- Advertising material must also not cause any offense to the targeted audience- Ethically, the material must not offend people on grounds of race, age, ethnicity, gender or sexual orientation, disabilities, or religion.

These rules can be applied to any treatment or product, but there are further regulations for procedures that use prescription only medication.

Prescription only medicines cannot be advertised to the general public (ASA, 2019). This also includes adverts that indirectly allude to the use of these medicines. An example of this is a banned Instagram that featured the Kardashians and its links to toxin treatments (ASA, 2019).

Cosmetic clinics can promote treatments but select terminology must be adhered to. This terminology can include-

- Treatments for wrinkle relaxing but they cannot use the brand name of the toxin (MHRA, 2020)
- Consultations for wrinkle-relaxing treatments can also be promoted (ASA, 2019)

Often legal regulations are written with ethical practices at the forefront of deciding factors of stating a rule. This opinion was stated as a recommendation (number 29) in the Keogh report in 2013 regarding advertising and practices within the aesthetics industry.

Unethical practices include-

- Setting time-limited offers and promotions- Tactics like 'quick offer ends in 24 hours!' or 'Hurry, don't miss out this offer ends on November the 1st' go against the Advertising Standards Agency (ASA) regulations. Examples of this include cases where consumers had felt under pressure to sign up due to time constraints. The companies who had advertised these promotions did explain there was a 'cooling-off period' but the ASA deemed that the time limits were irresponsible and likely to cause pressure.
- Offering procedures as a 'prize'- There is no regulation prohibiting this practice, but ethics still need to be considered. The JCCP states that this method of advertising is unethical therefore anyone registered with them cannot use this method of advertising (JCCP, 2022). The ASA states that this method can be used if the winner has a full consultation and is deemed suitable for the procedure to go ahead. There is also a recommendation that the ASA is contacted before this promotion is used to ensure compliance.
- Trivializing procedures- Although aesthetic procedures are more common nowadays, they are still cosmetic procedures that are more invasive than standard beauty procedures. Clients need time to consider their options and not make 'flippant' decisions (ASA, 2022). In addition to this wording within adverts must not be deemed as trivializing, this includes words like safe, easy, and risk-free.
- Ensuring adverts are age appropriate- All aesthetic cosmetic procedures are to be carried out on people aged eighteen or above. The style of the adverts must therefore be age appropriate and not exploit insecurities within the younger age ranges (ASA, 2022).
- Ensuring adverts targeted at vulnerable groups- Adverts designed to target certain groups is also unethical practice. Preying on a particular group of people, for example, new mums feeling insecure about their bodies post-pregnancy, definitely contravenes responsible ethical behavior (ASA, 2022).
- Unsuitable images used- Most digital pictures are enhanced for advertising, but images must not be over-enhanced to ensure they still reflect a realistic result (Keogh, 2013). Imagery must also not be degrading, objectifying, or gender stereotyping in nature (ASA, 2022).

Product Knowledge

Three types of brands currently on the market:

Bocouture – manufactured by Merz Pharma Group (Belotero Dermal Fillers)

Botox – manufactured by Allergan (Juvederm Dermal Fillers)

Azzalure – manufactured by Galderma (Restalyne Dermal Fillers)



POM – Prescription Only Medicine

- Botulinum Toxin is a prescribed drug
- You will need a prescriber to create a prescription for your client
- Each prescription will be tailored to one client only
- Each prescription can cost from £25.00.
- A good place to find a prescriber local to your area is FACES CONSENT on the app store
- These can be face to face or virtual depending on what your insurers will insure you for and how the prescriber works

Bocouture

- Comes in a powder form
- This needs reconstituting to make the product into a liquid
- Bacteriostatic Sterile Water is used to mix with the powder
- Bocouture comes in a 50 or 100 unit vial
- A 50 unit vial will cover all 3 areas on a client
- Once the vial has been opened and reconstituted, it will only keep in the fridge for 2 weeks



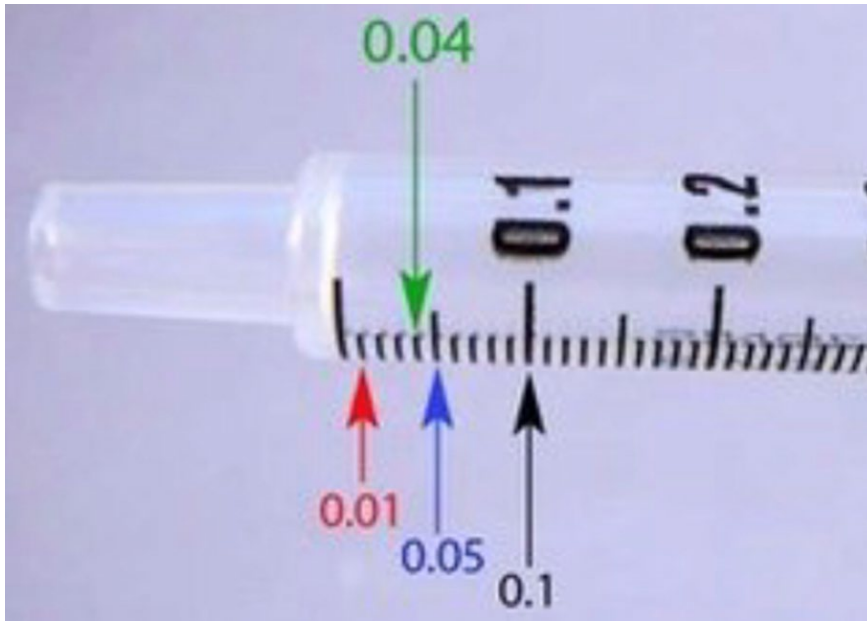
Dilution Instructions for BOCOUTURE

100-unit vial of Bocouture contains 100 units of botulinum toxin

50-unit vial of Bocouture contains 50 units of botulinum toxin

Vial Amount	Amount of Solution Added	Resulting Dose (Units per 0.1ml)
100 unit vial of Bocouture	2.50ml of 0.9% sodium chloride	4.00 Units
50 unit vial of Bocouture	1.25ml of 0.9% sodium chloride	4.00 Units

See the image below on how to read a syringe



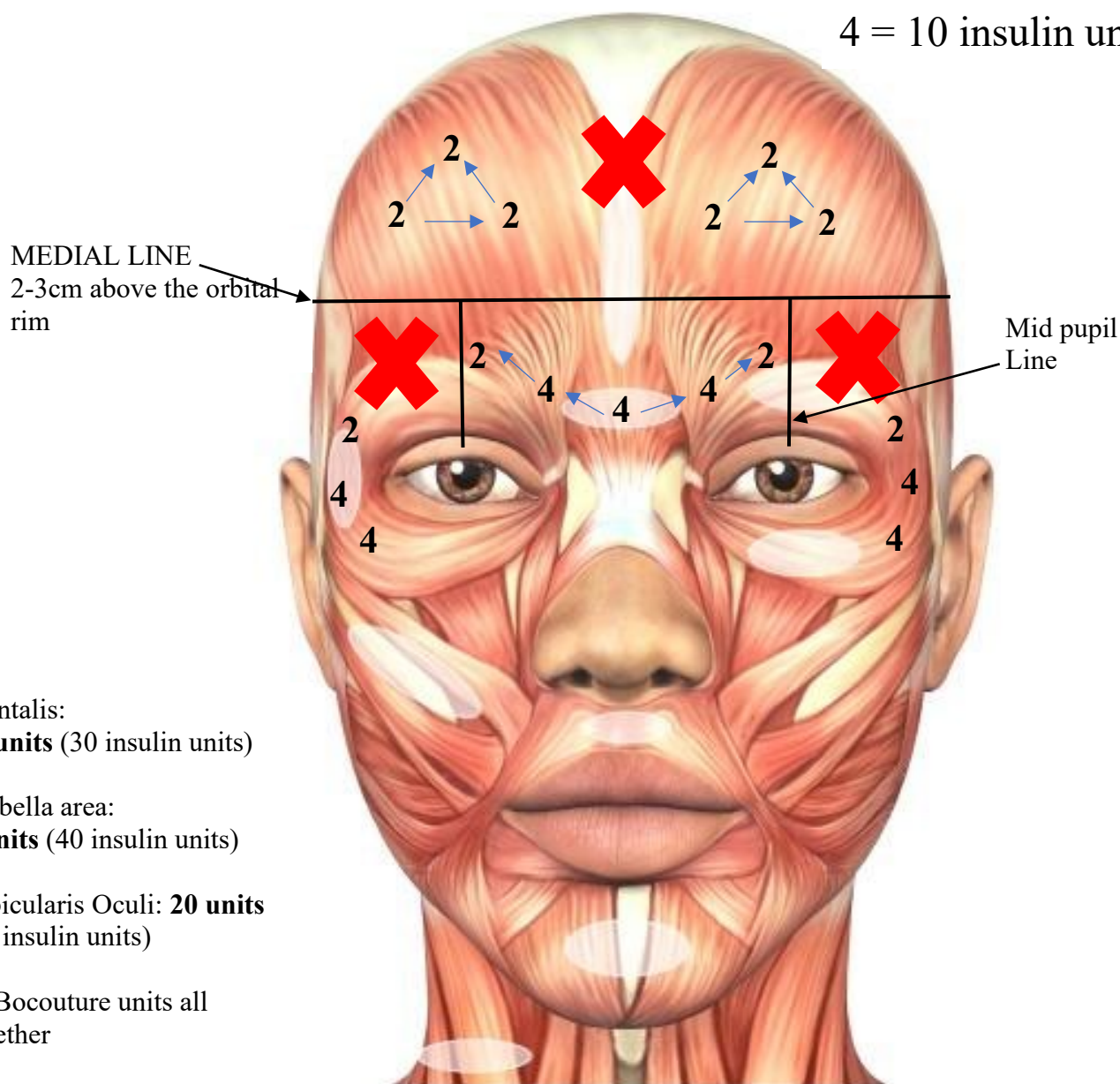
How to Reconstitute –

- Open the Bocouture box
- Snap the cap off the vial
- Check the unit vial you are using (50 or 100)
- Use a 1ml syringe and a 23 or lower gauge needle to pull up the solution
- Insert either 1.25ml for a 50 unit vial or 2.50ml for a 100 unit vial
- Slowly roll in the palm of your hands to mix, do not vigorously shake



Face Mapping

2 = 5 insulin units
4 = 10 insulin units



The arrows marked in blue on the diagram show the areas that should be at least 2cm away from each injection point. → (2cm apart) using your index and middle finger placed side by side gives a good indication. For both sides of the face this advice should be followed.

Treating (genetic) Male Clients

Genetically male muscle tissue can sometimes be stronger but not always. If you have a genetically male client you can assess their muscle pull individually and decide if you feel that more units are required at the first appointment. This can seem quite daunting if you are new to performing this treatment!

The advice we give to new practitioners when treating a genetically male client is to do the same treatment you would perform on a genetically female client in the standard map and units.

When the client returns for a top-up/review you can administer up to another full treatment of toxin units (50 unit vial) depending on the movement that they still have when you see them face-to-face. If they have minimal movement then you can go with the standard top-up protocol of 1-2 units (2.5-5 insulin units) in the areas that need additional toxin.

Potentially you may administer 2 vials of toxin over these two appointments so make sure you potentially price accordingly. It is also recommended that on the client's initial prescription, you order 100 units (2X50 units vials).

This will ensure that you have enough toxin for the review and will cut down on a second prescription cost.

Eventually, you will establish an understanding of treating your genetically male clients so you may start to increase your initial dose. This may be an extra 1-2 units (2.5-5 insulin units) per injection site.

Insulin Needles

A 0.5ml insulin needle is used to inject the botulinum toxin. The needle is very small and thin making it very easy to use and administer product.

On the face map above you can see we have converted the toxin units into insulin units to be able to read the insulin syringe correctly. It is important you do not mix up the two units when reading the face map.

Read the insulin needle and for each area pull up the correct amount of product you need.

For example, for x3 areas you will need x3 insulin syringes.

X1 with enough product in so that the plunger is on 30
X1 with enough product in so that the plunger is on 40
and X1 with enough product in so that the plunger is on 50

Injection Technique

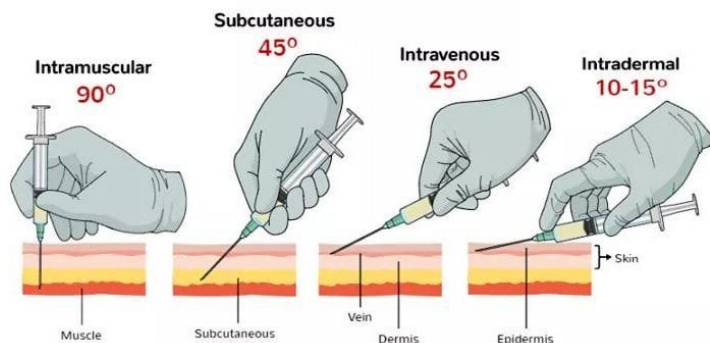
Each of the three areas you are treating have different angles of placement, you will find some suggestions below..

- 90-degree angle – procerus point (x1 injection site)
- 45-degree angle – corrugator points (x2 injection sites each side)
- 25 degree angle – orbicularis oculi points (x3 injection sites each side) **always inject away from the eye!**
- 10-15 degree angle –the frontalis points (x3 injection sites each side).

The injection angle will vary depending on the thickness of the skin and muscle tissue. The angle may differ from the suggestions above slightly. Your practical training will help you to further understand this.



Injection technique



Consultation

- Medical History Form
- Prescription (prescriber)
- Consent Form

Contra-indications

- Skin diseases, skin disorders. i.e viral, fungal, infections
- Neurological disorders, Brain Tumours, Seizures
- Serious medical conditions. i.e cancer
- Blood thinners
- Allergy to egg (Azzalure contains eggs)

You will need

- 0.5-unit insulin syringes
- 1ml syringe for reconstitution
- Size 23 or lower gauge needle for drawing up the product
- 0.9% sodium chloride solution (bacteriostatic saline water)
- Sharps bin
- Vita sept
- Gauze
- Kidney dish
- Bibs
- Wipes
- Makeup pencil for marking up
- PPE – gloves, apron, mask & goggles (optional)
- Botulinum Toxin

Treatment start to finish

- It is paramount that the area you are performing injectables is clean and free of clutter
- Make sure you are dressed appropriately and are well presented
- Welcome your clients into your clinic room and begin by asking how they are feeling today
- Follow on with your medical history questions and consultation
- Once these have been completed, begin to study their face and ask them the areas that concern them
- When they have disclosed this to you, clean the skin with a disinfectant and mark up the areas you are going to treat using the face map for guidance
- Ask them to lay back on the bed when you have finished your face map
- Take out the first insulin syringe and administer the product with the correct amount of toxin in each area
- Remember to angle the needle at the correct depth. And slowly inject. Hold the corrugators and procerus when injecting in those areas and for 5 seconds after to avoid the product trickling into other areas
- Complete all the areas being treated. Ask your client if they are feeling ok before they get up. If they have been laying down for a long while they may feel dizzy when they stand up.
- Discard all sharps into the sharps bin and all clinical waste into the orange bag pedal bin.
- Clean the areas with a disinfectant spray to make sure the area is clean, and the client doesn't walk out with any makeup pencil markings on their face.
- Advise them of normal and abnormal side effects
- Let them know when they will start to see results
- A two week review can be arranged if needed for any top ups

Two-week review

A two-week review would only be necessary if:

- They still have movement in some areas
- There is obvious unevenness

This can be charged as an extra. As you would need to open another vial if you used a 50 unit vial to treat the areas with movement or correct asymmetry.

Side Effects



Spock Brow- is the term given to eyebrows which upturn sharply and unnaturally.

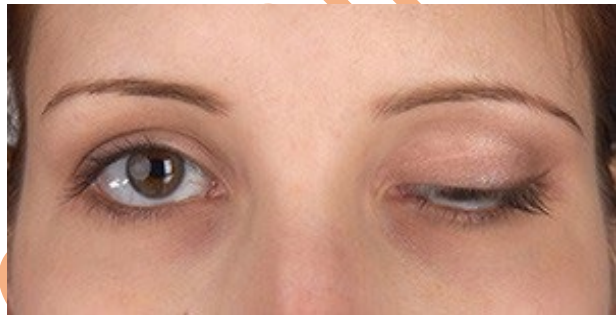
- Injection could have been too superficial
- High dosage of the product
- Area wasn't pinched and held for the count of 10 when administering
- A gap of 2cm above the orbital rim wasn't followed

Correction method-

Inject two units above the tail of the brow that is affected to make it drop slightly. Within 4-5 days it should improve.

Eyelid Ptosis- when the upper eyelid droops over the eye and looks 'lazy' or closed.

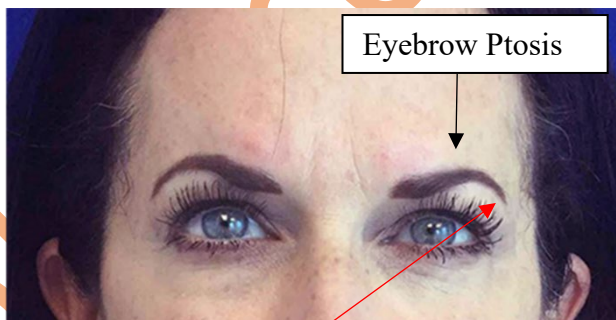
- High dosage of product administered
- Injection was administered too quickly
- No pressure was placed when administering



Correction method-

Ask your prescriber to prescribe the client some Apraclonidine 0.5% eyedrops.

Eyebrow Ptosis- an adverse effect of toxin which causes the feeling and appearance of heaviness above the eyebrows



- Injecting too high on the corrugator may have caused migration of the product
- Injecting superficially
- Injection point has crossed over the medial line of the pupil
- Client was not a suitable candidate (see below)

Option 1-

The safest option is to leave it! You can use an electric toothbrush to stimulate the nerves to speed up the reactivation of the muscle. They should see an improvement within a month, and full recovery 2-3 months after the treatment.

Option 2-

Inject 5 insulin units (iu), under the tail of the affected eyebrow to help raise the brow slightly. This will only work if you have not already treated the orbicularis oculi. Within 4-5 days it should improve.

Clients unsuitable for treating frontalis...



This client is unsuitable due to having a heavy overhang of skin on the upper lid. Treating the forehead/frontalis muscle would further drop their brow.

A horizontal line across the nose indicates a heavy brow/forehead. Administering toxin in the frontalis would make this heavier and cause a brow ptosis.



Treatment planning

You can treat the frown (corrugator and procerus muscle) by itself as one area. If you are treating the forehead/frontalis muscle you MUST also treat the frown.

You can treat the crows feet/Orbicularis oculi you can treat this also as 1 area.

Aftercare

- Do not lay flat for the next 4 hours
- Avoid any vigorous massaging of the areas
- Avoid sunbeds, steam rooms, saunas, hot showers for 24 hours
- Avoid alcohol, exercise and makeup for 24 hours
- Keep the area clean and free of germs
- Express the muscles a few times for the next 4-5 days

Delayed Side Effects

- Headaches
- Flu like symptoms
- Bruising/Swelling

Top Ups

It is hard to know how many units you will need to top up with until you have your client sitting in front of you. It also depends on how much movement they still have after the full two weeks.

If after the full 14 days your clients have returned and they still have movement in any of the areas you treated, half the amount of toxin you have already put in two weeks ago. You do not need to top up any areas that have fully taken to treatment. Half the amount of toxin units is shown on the face map below.

After the review appointment, your client will not be able to return for anymore top ups until after three months have passed. This is simply because it is very easy to overdose on botulinum toxin if you are having it done too regularly. Full movement must be back in all the areas you have treated before you can have another session.

For any areas where you think some more units are needed, always refer to your consultation form where you have written the previous appointment dosages. Ask them to express, then you should be able to work out how many units you need to top up that specific area.

Remember that not everyone will experience complete smoothness across the treated areas. Botulinum Toxin will smoothen fine lines and wrinkles, it does not get rid of them. Make sure your clients are aware of this prior to carrying out any treatments.

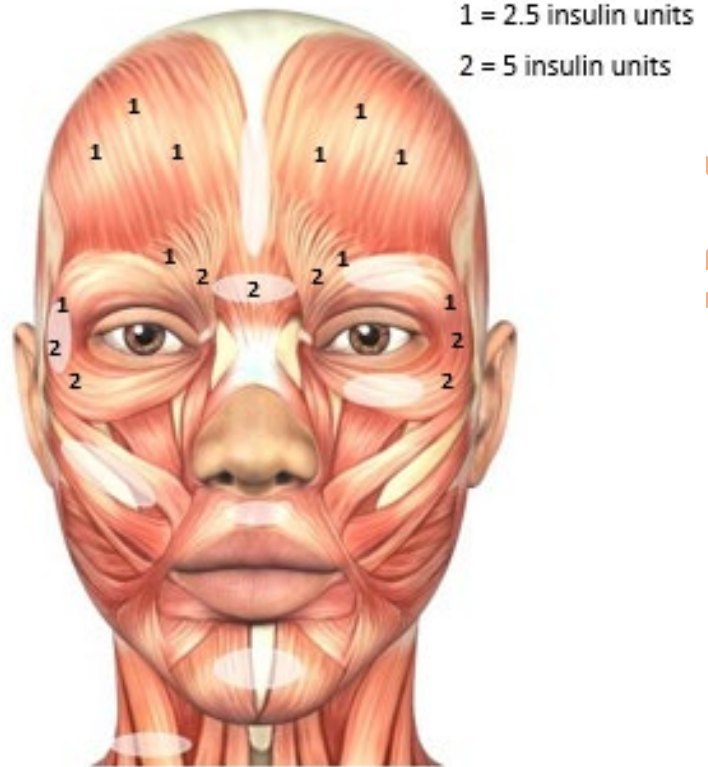
On the next few pages are copies of our own:

Aftercare Leaflet

Consent Form

Medical Form

Thankyou for choosing to train with Enhance Me Academy 😊



After the procedure

- Do not consume alcohol for 24 hours after the procedure.
- Do not do any aerobic exercise for 24 hours after the procedure.
- Do not massage the areas treated.
- Do not have any facial massages, facials or put any excessive pressure to the areas treated for 1 week after the procedure. This should include avoiding scuba diving or wearing tight fitting motorbike helmets.
- Do not go to sleep or lay down for 4 hours after the procedure and try to sleep lying flat in the bed the night after the procedure.
- Try to exercise the muscle treated for 4 hours after the procedure, so keep smiling and frowning.
- If you get any small bruises do apply ice and arnica cream. Mineral-based make-up may be applied immediately after the procedure.
- If you bruise easily, you may want to take arnica tablets for 1 day before the procedure and for 5 days after.
- Avoid sunbeds and saunas for 3-4 days after the procedure.
- In the case of underarm sweating treatment, do not use any deodorant for 24 hours.
- If there is anything that is not clear or if you are not sure that results have come up to your expectations, do contact us and arrange for a free 2 week follow up.

Anti-Wrinkle Injection Consent form

This is an informed consent document that has been prepared to help inform you concerning Anti-wrinkle injections and the risks involved. It is important that you read this information carefully and completely.

Please complete each section, indicating that you have read the page and sign the consent at the bottom prior to your treatment.

INTRODUCTION: Anti-Wrinkle injections involve a series of small injections in order to weaken the chosen muscles. The weakening of the injected muscles begins to be apparent after 2-3 days with the peak effect being reached after 10-14 days. Results can last 3-6 months.

The procedure can be repeated after 3 months; however, injections given at less than 3-month intervals may reduce the efficacy of the injections.

RISKS OF ANTI-WRINKLE INJECTIONS: Every procedure involves a certain amount of risk, and it is important that you understand the risks involved. An individual's choice to undergo a procedure is based on the comparison of the risk to potential benefit.

Although the majority of patients do not experience these complications, you should discuss each of them with your practitioner to make sure you understand the risks, potential complications, and consequences of Anti-Wrinkle injections:

Bleeding, Bruising/Swelling, Infection & Unsatisfactory Outcome/Temporary loss of function of nearby muscles.

PUBLICITY MATERIALS I authorize the taking of clinical photographs and videos. I understand that photographs and video may be taken of me for educational and marketing purposes. I hold the practitioner harmless for any liability resulting from this production. I waive my rights to any royalties, fees and to inspect the finished production as well as advertising materials in conjunction with these photographs.

You certify by signing this form that you have read the information in this document and completely understand it. You choose to proceed based entirely on the information provided in this informed consent document. You have been given all the necessary opportunities for discussion and all your questions regarding anti-wrinkle injections have been answered. You therefore and hereby consent to the care or treatment described herein.

Any discrepancies must be taken up with the practitioner within 2 weeks of treatment.

Anti-Wrinkle Injection Consultation Form

Name: _____

Date of Birth: _____

Address: _____

Home Phone: _____ Mobile Number: _____

E-mail address: _____

Occupation: _____

Does your job require that you work outdoors? Yes/No

What would you like to achieve from your treatment today?

Do you have any important engagements in the next week?

Do you currently have any health problems? _____

Are you pregnant, Breastfeeding or undergoing IVF?

Do you smoke? _____

Please list any accidents or surgeries in the last 12 months:

Please answer yes or no to the following questions, if you've ticked yes then please explain below:

	Yes	No
Is there any possibility that you are pregnant?		
Are you breast-feeding?		
Do you suffer from Anaemia?		
Do you have any allergies?		
Heart disease?		
Diabetes?		
Liver disease?		
Had heart arrhythmia problems?		
Weight issues?		
Irritability / moodiness?		
Memory loss / Alzheimer's?		
Have Polycythaemia Vera?		
Sleep disorders?		
Osteoporosis?		
Asthma?		
Tendonitis?		
Immunosuppression?		
Have low levels of potassium?		
Thyroid disorders?		
IBS / Inflammatory bowels?		
Numbness or tingling of body?		
Suffer from Gout?		

If you've answered yes to any of the follow please specify

here:.....
.....
.....
.....
.....

Past surgeries & hospitalisations (please include year and hospital)

Have you ever had a blood transfusion? _____

Any other medical problems that haven't been mentioned above:

Have you had any cosmetic procedures such as dermal fillers in the last 12 months? Including skin peels, facials, Botox?

Medical & Allergy review

Do you have any allergies? _____

Have you ever had an allergic reaction? _____

Do you take any blood thinning medication such as warfarin or aspirin?

List all medications or supplements you take:

By signing below, you certify that the included information is accurate and inclusive of all information relevant to your care. You are confirming that you are not withholding any information and doing so can be detrimental to your health during the procedure.

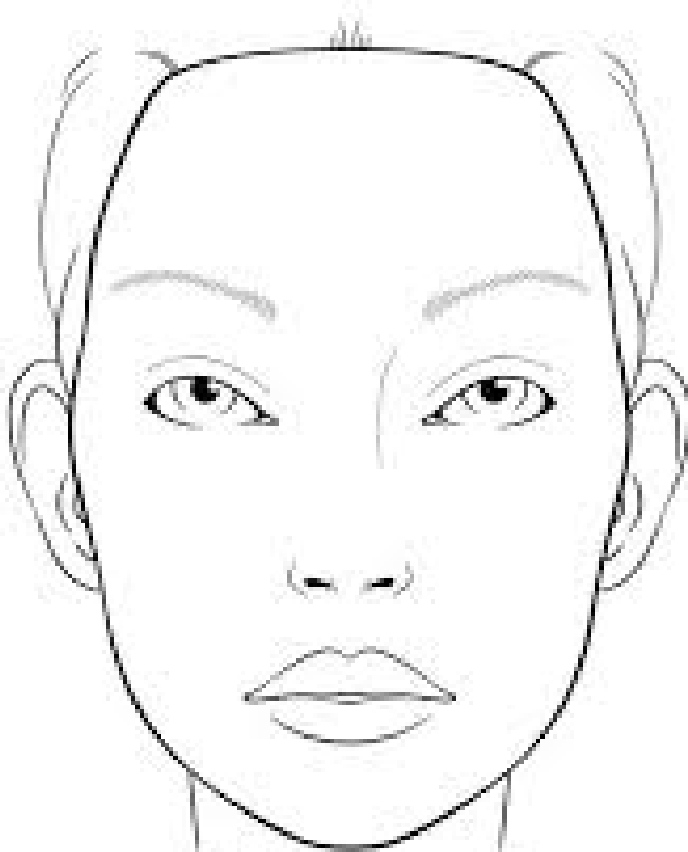
You are confirming that your practitioner has also verbally asked you all the above questions.

Client Signature: _____ Date _____

Therapist signature: _____ Date _____

There have been no changes to my health history since my last treatment and I am not taking any new medication

Client Signature: _____ Date _____



Use this face map to record the units you use.
If the client returns for a 2 week review, you can use this to determine how many units they need for a top up.