VITAMIN B12
VITAMIN C
INJECTABLES
TRAINING MANUAL

Contents

Health & Safety at Work Act

The purpose of this act is to promote, stimulate and encourage high standards of health and safety at work. It protects not only all people at work – whether employers, employees, or self-employed – but also the health and safety of the general public who may be affected by your work activities.

Main Duties of employers

Employers must safeguard so far as reasonably practicable the health, safety and welfare of the people who work for them. This also applies in particular to the provision and maintenance of safe systems of work, and covers all machinery, equipment and products used.

All reasonable precautions must be taken in the use and handling of any substance likely to cause a risk to health. All storage and transport arrangements should be kept under review.

Employers need to provide any necessary information, instruction and training in safe practices. Consider specific training needs with particular reference to processes and activities with special instructions.

Provide a safe place of work including safe means of access to and from it. Welfare facilities and arrangements must be adequate.

Duties to others

An employer must carry out his work in such a way that it does not affect the health and safety of others i.e. other employees, members of the public.

Duties of employees

All employees must take reasonable care for the health and safety of themselves and of other persons who may be affected by what they do, or fail to do, at work. This duty implies positive steps to understand the hazards in the workplace, to comply with safety rules and procedures, and to ensure that nothing they do or fail to do puts themselves or others at risk.

Workplace (Health, Safety and Welfare) Regulations 1992

The Workplace (Health, Safety and Welfare) Regulations 1992 cover a wide range of basic health, safety and welfare issues and apply to most workplaces.

Under these regulations, an employer must comply with the following -

- **Maintenance** - the workplace and equipment must be maintained in good condition. Where appropriate, there must be a planned system of regular maintenance
- **Ventilation** - enclosed workplaces must be provided with fresh or purified air
- **Temperature** - a reasonable temperature must be maintained inside the building during working hours. Thermometers must be provided for staff to consult.
- **Lighting** - suitable and sufficient lighting must be provided. Natural light should be used where possible. Emergency lighting must also be provided where necessary
- **Cleanliness** - the workplace and equipment must be kept clean. Waste should not be allowed to accumulate (except in suitable receptacles)
- **Space** - room dimensions should provide sufficient floor area, height and unoccupied space for the health safety and welfare of the staff
- **Workstations** - workstations must be suitable for the workers who use them and the work which is done
- **Seating** - where work can be done sitting, suitable seating must be provided for each person doing that work
- **Floors** - floors should be suitable and not uneven, holed or slippery. They should be kept free from obstruction or contamination likely to cause slipping. Staircases should normally have a hand-rail
- **Falls** - precautions should be taken to prevent people from falling or being struck by falling objects.
- **Windows** - transparent or translucent doors or walls must be made of a safety material or protected against breakage and must be clearly marked. Opening windows must be safe to use. All windows and skylights must be designed to allow safe cleaning
- **Traffic routes** - design must allow safe circulation of pedestrians and vehicles and traffic routes should be clearly indicated
- **Doors and gates** - doors and gates must be suitably constructed. Devices should be fitted to keep sliding doors on their tracks, to prevent upward opening doors from falling back, and to ensure safe operation of powered doors. Doors which can be pushed from either side should have panes to provide a clear view of the space around the door
- **Escalators** - escalators and moving walkways shall be safe in use, and fitted with necessary safety devices, including emergency stop controls
- **Sanitary conveniences** - suitable and sufficient toilets shall be provided at readily accessible places. They must be well ventilated and

lit and kept clean. A schedule to the Regulations specifies how many are needed, depending on the number of workers

- **Washing facilities** - washing facilities, including showers if needed, with hot and cold water, soap and hygienic means of drying must be provided
- **Drinking water** - a supply of drinking water must be provided for all workers at readily accessible places
- **Clothing** - accommodation must be provided for storage of a person's own clothing not worn at work, work clothing kept at the workplace, and for changing facilities
- **Rest and meals** - suitable rest facilities must be provided at conveniently accessible places. Arrangements must be made to protect non-smokers from discomfort from tobacco smoke in rest rooms and rest areas. Pregnant women and nursing mothers must be given suitable facilities. Facilities for eating meals must be provided where meals are normally taken at work

Management of Health and Safety at Work Regulations 1999

The Management of Health and Safety at Work Regulations 1999 place an obligation on the employer to actively carry out a risk assessment of the work place and act accordingly. The assessment must be reviewed when necessary and recorded where there are 5 or more employees. It is intended to identify health and safety risks.

The regulations require an assessment of ALL working activities.

The regulations require that certain measures need to be followed:

- avoid risk where possible
- assess risks that cannot be avoided
- combat risks at source
- adapt the working environment of the individual
- use technology to reduce risk
- implement risk prevention measures to form a coherent policy and approach
- give priority to measure that protect the whole workforce rather than one person
- ensure employees understand the control measures
- encourage a positive health and safety culture

Control of Substances Hazardous to Health Regulations 2002 (COSHH)

COSHH stands for the Control of Substances Hazardous to Health and includes many chemicals, fumes, dusts and biological agents. Under the Control of

Substances Hazardous to Health Regulations there is a requirement for employers to control the exposure to these substances in order to prevent ill health in employees and others who may be exposed.

The effects of exposure to these substances can range from minor skin irritations to eye injuries, lung diseases, cancers and even death. A failure to control exposure can lead to employers facing enforcement action, loss of business and civil claims.

COSHH Assessments
The Control of Substances Hazardous to Health Regulations specify what substances must be controlled. Suppliers of these substances must provide a safety data sheet for the substance which specifies the hazards and suggested precautionary measures. These should be referred to when carrying out an assessment under these regulations.

There are several steps that must be taken when carrying out an assessment under these regulations.

Step 1 - Assess the risks:
Identify the hazardous substances and the risks that they present. Consider how the chemical is used and by whom. This will allow you to determine how people could be exposed to harm (e.g. inhalation, ingestion, and skin contact)

Step 2 - Decide what precautions are needed:
Precautions should be considered in the following order and the highest possible on the list adopted.

1. Substituting the substance with a less harmful one
2. Change the process (e.g. eliminate the release of fume)
3. Use a safer form of the substance (e.g. pellets not powder)
4. Enclose the process
5. Provide specific or general ventilation
6. Provide Personal Protective Equipment (PPE) as a last resort (e.g. gloves, masks, goggles)

Step 3 - Prevent or control exposure:
It may be necessary to measure the concentration of substances in the air from time to time to ensure that employees are not exposed to unacceptable levels of hazardous substances.

Step 4 - Ensure that controls are used and maintained:

Measuring the concentration of substances in the air may also show whether the control measures are working properly.

Step 5 - Monitor employee exposure:
It may be necessary to monitor individual employee’s exposure to certain substances.
Step 6 - Carry out Health Surveillance:

This is required where employees are working with certain substances and full details are provided in the Control of Substances Hazardous to Health Regulations.

Step 7 - Inform and train employees:
You must ensure that employees understand the risks associated with the substances used, use the control measures and report any concerns or faults.

Code of practice for Hygiene in Beauty Salons

Hygiene is not so much a set of rules as an attitude of mind and common sense. The stricter the rules, the less risk there is of error causing complications.

In the Beauty Industry we are working in a close body contact situation where the risk of cross infection exists between the client and the therapist, as well as between the clients. Clients have a right to expect that in all such personal treatments there will be a high standard of hygiene and cleanliness of surfaces and instruments, and the washing of hands prior to treatment should become second nature.

Remember that there are many infections that afflict client's, which may not just be of AIDS proportions, but are nonetheless avoidable.

Hands

The therapist should always ensure that waterproof plasters cover any obvious cuts or abrasions on their hands. In addition, any obvious cuts or abrasions on the client in areas to be treated must be similarly covered or additional care taken in cleaning and disinfecting. The therapist should wash their hands before and after treatment and wear disposable gloves.

Footwear

Clients should wear foot coverings at all times. We recommend that floors be cleaned daily with a cleaner that destroys protein. The therapist should wear closed shoes as to protect the feet from any accidents such as needle prick injuries if you were to drop the roller.

Hygiene

Surgical spirit is useful for cleansing skin, instruments and surfaces to remove grease and organic matter. A concentration of 70% alcohol should be considered minimal for most other purposes. Items such as blankets, towels and headbands have been commonly used and cleansed by washing, several councils will not allow the use of material items within the room. Areas that will come into contact with blood should be barrier wrapped where appropriate. Again, this is not always a recommendation of your local council, however we believe that the best practice is the only way to remove risk of infection or cross contamination.

Your beauty couch should be wrapped in barrier film. Your trolley should also be covered, or you can use disposable surgery packs or dentist bibs to put down the items you will be using. Dentist bibs are absorbent on one side and waterproof on the other. These can then be disposed of straight after the treatment in a biohazard waste bag.

The Appearance of the Therapist

A beauty therapist should be an example to her trade.

A client will look to her therapist as a professional and this will be reflected not only in how she looks, but also her attitude and deportment.

A therapist is a reflection on the company in which she works. If a client does not feel satisfied with the hygiene of either the therapist or the salon, she is not likely to return.

Overall or uniform:

- Should be worn at all times during working hours.
- Should be clean and smell fresh. Ideally a clean uniform should be worn each day.
- Should not be decorated with anything other than a name badge or that of a professional organization to which the therapist is a member.
- A disposable apron should be worn for each client to help reduce cross contamination and keep your uniform clean.

Hair:

- Should be clean and secured off the face.

Nails:

- Should be of a workable length.
- If nail extensions are worn, these should be cleaned underneath every time you wash your hands and they should be of a decent length and shape so as not to piece your gloves.

Footwear:

- No high heels to be worn for health and safety and comfort reasons.
- You should have closed in back and no peep toes.
- Should be clean. It is good practice to keep a pair of shoes in work and travel to and from work in outdoor shoes.

Personal Hygiene:

- Deodorant should be worn at all times.
- No heavy perfumes should be worn.
- Smokers must take extra care with their personal hygiene. The smell of cigarette smoke clings to fingers, clothes and hair. Clients may find this offensive.
- Be aware of fresh smelling breath. If having close contact with a client, avoid garlic and excessively spicy food the previous night. Face masks also help mask smells and allow you to work at close contact with your client.

Sterilisation and Disinfecting

Sterilisation: This is the complete destruction or removal of living organisms on an object. Micro-organisms (bacteria, viruses and fungi) may be destroyed by heat, chemical disinfectants and ultraviolet radiation. All tools must, however, be cleaned to remove grease before disinfection is to take place.

Autoclave: This is similar to a pressure cooker, with the water contained inside it is reaching temperatures of 121 – 134 C. This is the most effective method for the sterilisation of tools within the salon.
Not all objects can safely be placed in an autoclave; check your tools can withstand the heating process. To avoid damage to the autoclave, distilled water must be used. Metal tools placed in the autoclave must be of a good quality to avoid rusting. Take care when removing tools from the autoclave –as they will be very hot.

Glass bead steriliser: Small glass beads are retained in a beaker and heated to a temperature of 190C. Tools are placed in these beads for 10 minutes. A disadvantage of glass bead sterilizer is that it cannot hold large items.

UV Steriliser: UV light will only be effective on surfaces that are exposed to the UV light. Tools will therefore need turning during the process to ensure that all surfaces are thoroughly sterilised. UV sterilisation is not suitable for brushes.

Disinfection: This is the destruction of micro-organisms, but not usually bacterial spores, reducing the number of microorganisms to a level, which will not be harmful to health. (Inhibits the growth of micro-organisms)
In most salons, ‘Barbicide’ is a recognised name as a germicide and disinfectant liquid in which tools can be stored.

Surgical spirit can also be used.

Antiseptic: Is a substance that inhibits the growth of bacteria but not kill the bacteria.

Bacteria: A single cell organism without a nucleus, which produces a compound called a toxin.

Fungus: This is a low form of vegetable life, which includes mushrooms and moulds. Some varieties cause disease, such as ringworm. A fungi stat will inhibit growth of any fungus while a fungicide will kill fungus outright.

Virus: A small part of a group of infectious agents. They have the ability to copy themselves outside of a living host cell. Viruses can be classed as pathogenic – causing disease as opposed to non-pathogenic (not causing disease)

Infestations: This is the presence of animal parasites, e.g. Mites, ticks or worms, either in the body, clothing or house.

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 a 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.

The Personal Protective Equipment at Work Regulations 1992

This act covers your requirements under the COSHH regulations. You are required to wear or provide to your employees 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
- Eye wear (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 Provisions and Use of Work Equipment Regulations 1998

Under these regulations all electrical equipment used in your workplace must be suitable for the purpose for which it is used. Equipment must be properly maintained, and all staff should be trained in the use of the equipment. These regulations apply to both new and second-hand equipment.

The Environmental Protection Act 1990

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 Environmental Protection Act 1990 are as follows:

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

Under the Environmental Protection Act 1990 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 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.

Safe Disposal of Sharps

EU Directive 2010/32/EU on the prevention of sharps injuries in the health care sector. Does it mean anything to you?

As set out in the Health and Safety Executive the aims of the Directive are as follows:

- To achieve the safest possible working environment
- To prevent workers' injuries caused by all medical sharps
- To protect workers at risk
- To set up an integrated approach establishing policies in risk assessment, risk prevention, training, information, awareness raising and monitoring
- To put in place response and follow up procedures.

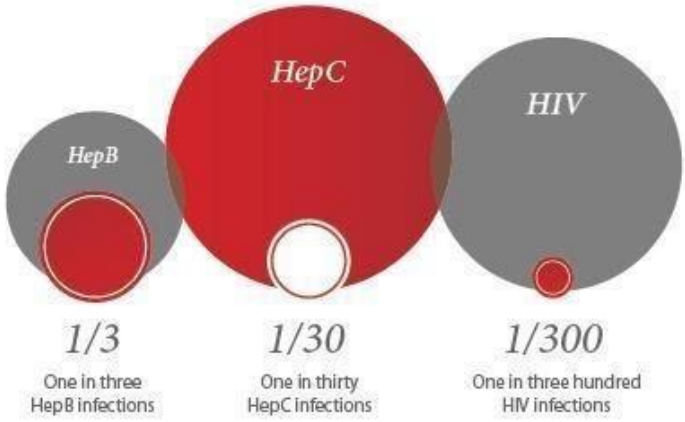
So how does the EU Directive affect me?

The EU Directive is aimed at employers, requiring them to make appropriate provisions for staff in respect of the risk of sharps injuries. It is the employer's duty to ensure the health and safety of workers. The directive reinforces the need for appropriate levels of training and equipment. A risk assessment must be carried out and where there is a risk of exposure, employers need to identify how exposure can be eliminated. Where exposure cannot be eliminated exposure should be prevented through:

- Providing sharps disposal equipment as close as possible to where sharps are being used
- Banning the practice of re-sheathing
- Implementing safe procedures for using and disposing of sharp medical instruments and contaminated waste
- Eliminating the unnecessary use of sharps

Employers should be aware of their legal duties under existing legislation and the new directive, which emphasise carrying out risk assessments on the prevention of sharps injuries. There should be a strategic level commitment to reducing sharps injuries.

Health and safety law is criminal law, and companies can be subject to enforcement action if they fail to comply with the legal requirements relating to the prevention of sharps injuries.



According to www.needlestickforum.net 100,000 needle-stick injuries occur each year in the UK[1].

What do I need to know?

- Only one roller/stamp to be used per client.
- Rollers should be disposed of immediately after use.
- Be careful when working on your clients so as not to catch yourself with the needle.
- Your sharps box must be close to hand and ideally wall mounted.
- Sharps boxes must be disposed of as soon as they are three quarters the way full and closed with the safety seal.
- Have a needle prick procedure policy to hand in case of injury to remind you of what to do.

Waste Electrical and Electronic Equipment Regulations 2006

Under this act anyone that disposes of waste has a duty of care to ensure that all waste is disposed of responsibly.

Any chemicals that you may use in a salon will be considered waste. However, most of these may be diluted with water and often disposed of down the sink. However, you should ask the manufacturer of the best and correct way of disposal. You can also seek advice and guidance from your local council.

The Waste Electrical and Electronic Equipment Regulations places a duty on Manufacturers, importers and retailers with regards to safe disposal of products. There is also a duty on salons to ensure that you only purchase from respectable suppliers and dispose of any unwanted equipment at registered sites which are able to take electrical waste.

The Regulatory Reform (Fire Safety) Order 2005

The Government is committed to regulating only where necessary and in a way that is more suited to the needs of a modern business. That is why the order was made, under the Regulatory Reform Act 2001. It replaces most fire safety legislation with one simple order. It means that any person who has some level of control in premises must take reasonable steps to reduce the risk from fire and make sure people can safely escape if there is a fire. [Extract from A short guide to making your premises safe from fire]

Your responsibility as an employer:

- Carry out a fire risk assessment for the premises
- Develop evacuation procedures
- Provide and maintain clear means of escape, signs and notices
- Provide emergency lighting
- Provide fire detection and alarm systems
- Provide adequate means of fighting fires
- Train Staff
- Consult with all staff on the fire procedures.

Types of Fire Extinguishers

There are five classes of fire:

Class A:	Fires which involve solids such as paper, wood and hair.
Class B:	Fires which involve liquids such as solvents.
Class C:	Fires which involve gases such as propane and butane.
Class D:	Fires which involves metals.
Class F:	Fires which involve hot oil such as cooking oil.

Water

There are Red with a label on that indicates that it can only be used for class A fires. This must not be used on electrical fires and can cause quite a lot of damage.

Foam

Red extinguisher with a cream label on the front and used for class B fires or small class A fires. These extinguishers cannot be used on electrical fires and can also cause quite a bit of damage.

Carbon Dioxide

These are Red with a Black label and can be used on all fires especially class B and electrical.

Dry Powder

Red extinguishers with a blue label and can be used on all classes of fires but especially suitable for class B, C and electrical fires. The big disadvantage to this type of extinguisher is the mess left over from the residual powder that has to be cleaned up and the powder can also damage other electrical equipment.

Wet Chemical Extinguisher

Red extinguisher with a yellow patch and it used for extinguishing cooking fats and oils.

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

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. There second role is to collate statistics and to assist in the implementation of initiatives to reduce accidents in the work place.
If any of your employees or trainees suffers a personal injury at work that results in either;

- Major Injury
- Death

Then you must contact the Incident Contact Centre on 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 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.

Health & Safety (First Aid) Regulations 1981

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 days 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 eye wash 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

Electricity at Work Regulations 1989

The most common causes of accidents in the salon environment include:

- Electrical Fires
- Electrical Shock
- Electrical Burns

There are simple precautions that you can follow to reduce these risks to you and your employees or clients.
The Law requires that electrical equipment should be maintained to prevent danger. Regular checks should be undertaken on all electrical equipment. This should include:

- Checking that there are no frays or tears in the leads.
- Checking that plugs have no damage or bent pins.
- Looking for damage to the outer cover of the equipment.
- Looking for any signs of overheating, such as burn marks or stained plugs.
- Check that cables are not trapped under trolleys, seats or furniture.

Annually (or on the 1st anniversary of any new equipment) you should get a Portable Appliance Test (PAT) done on all your electrical equipment. This isn't mandatory but may form part of your licencing and insurance requirements. PAT testing costs as little as 30p per item and a sticker will be placed on the item to state whether it has passed or failed the test.

The Local Authority Licencing Application

The registration and bye 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. However, it is important that you call the Environmental Health department and ask them what their requirements are prior to application.

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 therapists 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:

The Room

The Environmental Health Officer (EHO) will first want to inspect your room. They will look at what type of flooring you have. Wipe clean flooring is preferred and they will ask how you clean it and how often. Your room should be free from curtains, drapes, towels and cushions and anything else such as absorbent woods and material.

You should have a sink in the room that has hot and cold running water. A soap and towel dispenser is also handy to have next to the sink and a 'How to Wash your Hands' guide. Sinks should be operated by an elbow lever tap or foot pedal.

Your trolley, mag lamp and beauty couch should be barrier wrapped. You will be asked how often this is changed (between clients or wiped down with special cleaners). They will expect to see a sharps box close to hand and usually hanging from the wall.

Your stool should also be wrapped and no trailing wires anywhere in the room. Mag Lamp cables can be clipped to the wall or taped out of the way or use cable grips to attached loose trailing wires to trolleys. You can purchase Velcro fasteners from eBay.

The room should be self-contained and have no contamination from spray tans, hair or nails. You should have adequate ventilation and lighting and changes in floor height clearly marked.

No smoking signs should also be clearly displayed.

Keeping Records

The EHO will ask you to provide a copy of your consultation form and whether or not you keep photographs of the clients. They may also ask how you store this information and for how long.

They will also ask to see copies of Medical Safety Data Sheets (MSDS or SDS) for any products or anaesthetics you may use during the treatment.

They will also want to see how you dispose of your waste and copies of the contract with your waste removal contract.

Cleaning

The EHO will ask what products you use to clean your work surfaces and floors with and how you use the product. Make sure you are familiar with how long a product has to be left on for and what PPE you may need when using such products.

They will also ask how you dispose of derma rollers and other items you use during the treatment. As most are now disposable it is easy enough to just throw these items away and you will not need to have a cleaning procedure for these.

Preventing Cross Contamination

Your EHO will want to know how you prevent cross contamination. A few basic points should cover any questions that she/he may have:

- You protect your trolley with fresh barrier film or dental bibs before every new client.
- You use a new roller for each client and open this up in front of them before starting the procedure.

- Use a new roller for each new client and each new appointment.
- You get out everything you need so you have it to hand, such as wet wipes, cotton wool, dispense the right amount of anaesthetic into a small pot.
- Wipe down all products after each treatment.
- Use a new pair of powder free latex free gloves on each new client. Make sure you wash hands before and after putting on or removing gloves.
- You may be required to produce proof of your Hepatitis B Vaccinations.

What else may I be asked?

- The EHO will ask to see what anaesthetics you use and how you use them.
- They will require to see a copy of your aftercare form.
- You may also be asked if and how you perform a patch test for anaesthetic.
- You may be asked what you use post treatment and how this is applied.
- Have you displayed your training certificates?
- They will ask for copies of your liability insurance.
- Proof of your first aid training and if you have spill kits for cleaning up sick or blood.
- Do you have an up-to-date tetanus?

Effective Cleaning

When working within the beauty industry it is important to ensure high standards of hygiene. This becomes increasingly more important when you are performing invasive procedures.

Having a good cleaning routine not only protects yourself, but also prevents cross contamination between clients.

It is best practice to clean your room between clients, with a thorough clean being done at least once a week, if not more dependent on the amount of how many clients you treat each week.

Cleaning physically removes contamination which includes microorganisms but will not kill all microorganisms even if the surface look clean.

You can clean all work surfaces using a detergent and warm water. Read the instructions carefully on any products you use to make sure they won't damage your work surfaces.

Ultrasonication

Is a liquid-based method of cleaning that is recommended for some types of metal equipment. The process is performed in a lidded tank and can clean in between apertures and recesses. The tank of the Ultrasonic cleaner should be cleaned twice a day and kept clean and dry overnight.

Disinfection

This reduces the number of living microorganisms, but may not necessarily kill all fungi, viruses, bacteria and spores. Disinfection is not the same as sterilisation. Items or surfaces must be cleaned before disinfection can occur.

Sterilisation

Sterilisation kills all microorganisms and also bacterial and fungal spores that may survive the disinfection process. Steam sterilisation is the preferred method of sterilising any equipment you may use as it fast, easy to use and non-toxic. UV sterilisers and glass bead sterilisers are not considered to be adequate methods of sterilisation.

Types of cleaning agents

Agent	Instruments	Skin	Work Surfaces
Powder or liquid based detergents that are diluted in hot water as per the manufacturer's instructions.	This can be used for initial cleaning of instruments before disinfection or steam sterilisation	No	Effective enough to use on all work surfaces between clients or at the end of the day before disinfection
Bleach or Hypochlorite. On application bleach products must contain minimum 1000ppm available chlorine. For example from sodium dichloroisocyanurate (NaDCC) soluble tablets.	No	No	Yes on hard manmade work surfaces.
60-80% alcohol is available as spray or as wipes.	No	Yes	Yes however the surface must be cleaned beforehand.
Halogenated Tertiary Amines and quaternary ammonium compounds (e.g. Trigene); these products are available as spray or wipes.	Yes but may cause damage to metal surfaces with prolonged use	No	Yes
Chlorhexidine based products often combined with alcohol such as Hibisol.	No	Yes	No

Glutaraldehyde based products	This substance should never be used on the skin and is an irritant and Allegan. Exposure is strictly controlled under COSHH. Its use is not recommended unless appropriate measures are in place.

Blood Bourne Pathogens

What are blood borne pathogens?

Blood borne 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 blood borne 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 blood borne pathogens.

What can be done to control exposure to blood borne pathogens?

In order to reduce or eliminate the hazards of occupational exposure to blood borne 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 minimizing employee exposure and include the use of safer medical devices, such as the derma pen.

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

Hepatitis B:

This is a disease of the liver caused by a Virus (HBV) that is transmitted by infected blood and tissue fluids.
The virus is very resistant and can survive outside the body. People can be very ill for a long time with Hepatitis B infection. It is a very weakening disease, which can be fatal.

Strict hygiene practices are essential to prevent Hepatitis B from spreading in the salon.

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 sterilizing agent on blood spills. The bleach treatment will destroy the viruses, which will cause AIDS and Hepatitis B.

Gloves

We prefer to use Nitrile gloves when performing derma roller treatments. They fit snugly on the hand like latex gloves but without the allergy risk.

You should always wash your hands prior to putting on your gloves following the NHS guidelines.
How to properly remove gloves:

1. Using your right hand grasp the rim of the left glove and remove it turning it inside out.
2. Whilst holding onto the glove turned inside out, use your left hand, grasp the rim of your right glove and pull it off of your hand without touching anything.
3. Dispose of the gloves in your bio-hazard waste bag.
4. Wash your hands following the recommended guidelines.

Blood borne and Body Fluid Exposure Policy and Procedures BLOODBORNE PATHOGENS POLICY AND PROCEDURE HBV IMMUNIZATION AND PREVENTION TRAINING

Before engaging in a treatment where exposure to human blood and/or Other Potenti ally Infectious Materials is probable or possible, each student, trainer or therapist must present either evidence of
HBV immunisation against hepatitis B virus disease (HBV) and undergo training to prevent or
minimise exposure. Each person should check with their local GP or Health Clinic about such costs and must produce evidence of such costs for reimbursement. Students, Trainers or
Therapists who want to forego such immunisation must sign a formal disclaimer stat ement.

DEFINITIONS

Bloodborne Pathogens- pathogenic microorganisms present in the human blood and other body fluids which can cause disease in humans.

Potentially Infectious Material- include:

1. human body fluids including; semen, vaginal secretions, pleural fluid, amni otic fluid, saliva.
2. anybody fluid/excretion that is contaminated with blood.

Universal Precautions - Strict adherence to standard precautions is required in all tre atment situations.

All staff and
students are required to use appropriate personal protective equipment whenever contact with blood or other infectious material is expected. Personal protective equip ment includes but is not limited to, gloves, masks, aprons, face shields, and eye prot ection.

WASH HANDS before and after all contact with clients. Consider all blood, visibly b loody secretions
and fluids and genital secretions from **ALL CLIENTS** to be infectious

GLOVES are required for all anticipated contact with human blood, body fluids, or m ucous membranes.

CHANGE GLOVES and wash your hands after each procedure and before contact with another Client.

WEAR MASK OR GOGGLES when blood or body fluids may splash into your face.
WEAR WATERPROOF APRONS when blood or body fluids may soak through a clo th gown.
YOU ARE RESPONSIBLE for properly disposing of any sharps or infectious materia ls you have used in designated containers.
Definition of blood and body fluids (for blood borne pathogens):

- Human blood and blood products
- Semen and vaginal secretions
- Cerebrospinal fluid (CSF), synovial fluid, peritoneal fluid, pericardial fluid, amn iotic fluid
- Saliva in dental procedures (assume blood contamination)
- Anybody fluid visibly contaminated with blood (especially from spots)

Notice that other body excretions such as saliva, urine, stool, vomitus, and respirator y secretions are
not included on this list (unless visibly contaminated with blood). However, many of t hese excretion present other infectious hazards. Bloodborne and Body Fluid Exposure Policy and Procedures

Needle Prick or Cross contamination Procedure

1. Immediately wash wounds and skin sites that have been in contact with blood or body fluids with soap and water or flush mucous membranes with water. (No evidence exists that using antiseptics for wound care or expressing fluid b y squeezing the wound further reduces the risk of Bloodborne pathogen transmission; however, the use of antiseptics is n ot contra-
indicated). Or After any exposure, the first thing to do under every circumstan ce is to tend
to the exposure to minimize your contact to blood or body fluid. Wash the area with soap
and water for five minutes, or if a mucosal exposure, rinse with water or saline for five minutes.

Any other first aid should be begun as needed, e.g. direct pressure to the wou nd. DO NOT irrigate the wound.

2. Immediately inform your Manager or another member of the team.
3. Attend your nearest hospital Accident and Emergency Department.

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. If you have an adrenaline auto-injector - use it immediately.

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.

If your client experiences these critical symptoms, Call 999 and say “anaphylaxis”.

Treatment

Adrenaline is the first line treatment for anaphylaxis. If you have an adrenaline autoinjector - use it immediately.

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. Use your adrenaline auto-injector according to its instructions. If in doubt, use your adrenaline auto-injector - it can save their life. Then lay them down with their legs slightly elevated. • Call 999 and say “anaphylaxis.” State your name, location and telephone number.
- If possible, someone should wait outside to show the ambulance crew where you are.
- Let ambulance personnel know about the clients medical history and treatment undertaken.

Why Vitamin B12?

- After water and oxygen, vitamin B12 is the next essential micronutrient molecule vital for health.
- Vitamin B12 deficiency is common and can manifest at any age and is largely unrecognised.
- Vitamin B12 is crucial for many systems of the body to function correctly.
- Pernicious anaemia is just one illness related to a deficiency in vitamin B12.
- It is believed that vitamin B12 deficiency is not always detectable on blood tests.
- Symptoms such as depression, anxiety and psychosis as well as the early onset of dementia are common with vitamin B12 deficiency.
- Causes of B12 deficiency include genetic disorders, poor diet, gastrointestinal illness or surgery, alcoholism and use of antacids.
- Vitamin B12 is non-toxic – even at really high doses.

Why Vitamin C?

- Vitamin C is antioxidant and helps prevent oxidative stress
- Works with enzymes to make collagen
- Brightens skin and complexion
- When taken by injection Vitamin C can reach much higher levels in the blood than when taken orally
- Vitamin C is used to treat colds, boost immune,
- Lowers Hypertension
- Guards against heart disease
- Higher dosage by injection over oral counterparts
- Vitamin C is non-toxic, even at high doses
- Can be used to facilitate healing

What is Vitamin B12

Vitamin B12 is the generic name for a group of compounds based on the cobalamin molecule that has cobalt as the trace mineral at its core. Cobalamin is a highly active complex organometallic molecule. It is the largest and most chemically complex of all

of the 13 known vitamins and is generally red in colour. Like other B & C vitamins, Cobalamin is water-soluble, a characteristic that effects how it is absorbed, excreted and stored in the body. Vitamins A, D, E & K are all fat-soluble.

It is classified as a vitamin as it is an essential nutrient for the human body and is regularly obtained from the food we eat. Like other vitamins its role is to catalyse or regulate metabolic reactions in the body. Vitamin B12 plays an important role in the body responsible for hematopoiesis (producing all types of blood cells), neural metabolism, DNA & RNA production, and carbohydrate, fat and protein metabolism. It also helps to improve iron function in the metabolic cycle and assists folic acid in choline synthesis.

Vitamin B12 can only be made by microorganisms, such as bacteria and algae, if the cobalt mineral is available in the soil or water. The main source for humans to obtain vitamin B12 is from the consumption of meat and fish. The vitamin is made by microbes in the digestive tract of animals, where it is absorbed and deposited into their tissues. As well as meat and fish, vitamin B12 can also be obtained by the consumption of cheese, milk and eggs. There are no known sources of vitamin B12 in plants, although some species of seaweed have been found to contain it. Therefore it is quite common to see vegetarians or vegans present with vitamin B12 deficiencies.

Vitamin B12 is absorbed into our tissues through the digestive tract, however this process can be disrupted from poor digestion, intestinal disease or the use of some medications etc. Main causes are due to atrophic gastritis and lack of Intrinsic Factor (IF), a glycoprotein produced by the stomach that is required for the absorption of B12. As well as from poor diet and digestion, vitamin B12 deficiencies can also be affected by a genetic condition such as:

- Pernicious anaemia
- Crohn’s disease
- Treatment with proton-pump inhibitors
- Atrophic gastritis
- Coeliac disease
- Use of antacids (acid is required to release B12 from food)
- Gastrointestinal surgery
- Use of certain medications
- Use of illegal drugs and substances including nitrous oxide

Forms of Vitamin B12

Methylcobalamin

Methylcobalamin is a co-enzyme in the folate cycle leading to DNA synthesis and in the interlinked homocysteine-methionine cycle. By extensions, affects DNA methylation and supply of S-adenosyl methionine (SAM), impacting on nerve schwann cell insulation, hormone management and immune system management. Can be manufactured and can be injected or taken in oral tablet form.

Methylcobalamin is a biologically active form which is used to transfer methyl groups from one molecule to the another in cells and so assist with lipid metabolism and the regulation of DNA (gene switching on and off or epigenetics). The Methyl- (CH3+) group is exchanged in many biological reactions. For example, in the interaction between B12 and folate (vitamin B9), B12 takes a methyl group from folate, allowing the folate cycle to complete, leading to correct synthesis of DNA.

Methylcobalamin appears to be the most important active form in the cell cytoplasm. However, in at least one organelle with the cell, the mitochondria, the most important active form appears to be adenosylcobalamin.

Adenosylcobalamin

Used in the Krebs cycle, the sequence of reactions by which most living cells generate energy during the process of aerobic respiration. It takes place in the mitochondria, using up oxygen and producing carbon dioxide and water as waste products, and ADP is converted to energy-rich ATP

Appears to be the active form of B12 in ‘active b12’ (holotranscobalamin) in blood serum. Can be manufactured and can be injected or taken in oral tablet form.

Adenosyl-, is the active group attached to the reactive site of B12.

Adenosylcobalamin needs particular conditions, a particular pH, and accompanying electrolytes, to become soluble. It is usual to take Adenosylcobalamin in oral tablets rather than by injection. It is often sold as an athlete performance enhancer because it increases energy and enthusiasm.

Hydroxocobalamin

Stable form of commercially manufactured cobalamin which converts easily in the human body into methylcobalamin and adenosylcobalamin.

An artificial form of vitamin B12 it is rapidly converted to both of the biologically active forms. Hydroxocobalamin is the form of B12 used in injections in the UK and the most usual form or B12 recommended by the B12d.org charity.

Hydroxocobalamin has a hydroxy- (OH-) group attached to the cobalt atom. The hydroxy- group is extremely soluble and releases the B12 rapidly which frees B12 to interact with other biochemicals.

Cyanocobalamin

Highly stable form of commercially manufactured cobalamin. Whilst the majority of humans can convert cyanocobalamin into an active form of B12 a proportion are not able to make use of cyanocobalamin because the molecule is too stable, and the molecule is rapidly removed from the body by the kidneys because it is recognised as B12 + Toxin molecule.

The cheapest form of B12 available and a very stable form, produced through an industrial process by combining B12 with cyanide (poison). The main disadvantages of this type of cobalamin is that it is lost from the body very quickly.

History of the discovery of vitamin B12 in brief

- **1824-1926** ○ James S. Combe (1796-1883) of Edinburgh, described a deadly wasting disease. ○ Medical reports described a wasting disease among people not obviously suffering from starvation or nutritional deficiency.
  ○ Thomas Addison (1793-1860) made an association with neuropsychiatric disorder. ○ In 1872, Anton Biermer of Switzerland (1827-1892) gave the illness the name 'pernicious anaemia' because it was always fatal. ○ Symptoms identified included megaloblastic red blood cells, and plaques in the spinal column (post mortem). ○ In 1910, American physician Richard C. Cabot (1868-1939) presented a natural history of the disease for 1,200 patients. Only six were in remission. The remainder only survived one to three years after developing symptoms. ○ By the 1920's, government sources reported 10,000 unexplained deaths each year in the US alone, with similar symptoms. ○ Haematologists considered this to be a haematological condition and the progress to identify the cause and develop a treatment was delayed. ○ The depletion of red blood cells was considered the most important aspect of the illness until more modern investigations were undertaken.
- **1926-1979**
  - An accidental discovery of the liver diet in 1926 by George R. Minot and William P. Murphy, they were developing a more integral multidimensional view of disease. ○ They discovered that the liver diet could cure deadly disease. ○ They were studying a cure for anaemia in dogs and had already discovered that a liver diet helped bleeding dogs recover more quickly (dogs were deliberately bled to give an artificial anaemia effect). ○ They tried the diet on adults who presented with pernicious anaemia and found a similar recovery. ○ The disease, and death from the disease must have been widespread at the time as they were awarded the Nobel Prize for Physiology & Medicine in 1934, for their discoveries concerning liver therapy in cases of anaemia. ○ The actual factor that cured the disease was not known, liver was readily available, and many people benefitted. ○ People would also undergo extremely
    painful injections of half a litre of liquified liver monthly. ○ In 1929, the haematologist William Bosworth Castle (1897-1990) discovered that a gastric component he called 'Intrinsic Factor' IF was missing in pernicious anaemia. ○ In the 1940's, Vitamin B12 had been identified as the active factor in curing pernicious anaemia. ○ In 1948 the 'extrinsic factor', that is, vitamin B12, was isolated in crystalline form as cyanocobalamin from liver by two independent scientific teams.

- B12 was associated with neurological problems including multiple sclerosis like presentations, and problems with absorption had been connected with the failure of the stomach to produce acid.

- **1979- Present Day** ○ Widespread refusal to accept that vitamin B12 deficiency exists. Perhaps by pharmaceutical companies that have nothing to gain by people becoming well.
  - ○ Patients can fail the test for B12, despite showing all the symptoms. ○ Criteria is set that only extreme cases of B12 deficiency is diagnosed and treated.

What is Vitamin C?

Vitamin C Injection is also known as Ascorbic acid. It plays an important role to maintain healthy skin, bones, teeth, and cartilage. This vitamin is an essential nutrient to protect cells of the body from damage. Vitamin C Injection acts as an antioxidant. Insufficient amounts of this vitamin can cause scurvy, muscle weakness, joint pain, skin rashes, and tiredness**.** Vitamin C is important for healthy bones, tissues, veins and help in the production of red blood cells. The disease scurvy which is caused due to deficiency of Vitamin C is treated by supplying enough of the vitamin to the body from external sources. Ascorbic acid is used in such treatment. It also helps in better iron absorption in the body. Vitamin C is a vitamin absorbed by the body from different food sources, mostly from citrus fruits like oranges, lemons, kiwi, papaya etc. as well as smaller amounts in some vegetables. You should not be taking Vitamin C Injection if you have a problem of hemochromatosis or iron overload, or any kind of complications related to kidney stones in the past. Vitamin C injections are safe when taken in proper dosage according to the need of your body. But over-dosage, improper administration, or allergic tendency towards it can produce side effects in your body. Some of the side effects are- nausea, diarrhoea, joint pain, weakness, weight loss, upset stomach, stomach cramps, painful urination, fever, shivering etc. Aluminium present in antacid medicines may react with ascorbic acid hence the client needs to undergo a full consultation and be aware of the dangers of mixing both. Vitamin C works as a coenzyme and reducing agent in a number of metabolic pathways. It is also involved in the conversion of folic acid to folinic acid, tyrosine metabolism, carbohydrate metabolism, iron metabolism, cellular respiration and others.

Vitamin C injections are sometimes used off-label for other conditions, including:

- Cancer
- General Health
- Immune Function
- Weight Loss

Off-label drug use means that a drug that’s been approved by the FDA for one purpose is used for a different purpose that has not been approved. However, a doctor can still use the drug for that purpose. This is because the FDA regulates the testing and approval of drugs, but not how doctors use drugs to treat their patients. Learn more about off-label prescription drug use.

Cancer

As early as the 1970s, some researchers were suggesting that using high doses of intravenous vitamin C along with cancer drugs could improve treatment of cancer. Intravenous vitamin C can produce very high levels of vitamin C in the body. Researchers believe that these high vitamin C levels can be toxic to cancer cells without harming the healthy cells of the body. Some researchers also believe that vitamin C might be able to reduce the side effects of cancer drugs. They say vitamin C injections can make chemotherapy work better or prevent some chemotherapy side effects. There is some research that suggests vitamin C injections might help reduce side effects and improve quality of life. More research is needed to determine if vitamin C can help fight cancer. However, the potential benefits of intravenous vitamin C in cancer treatment remains controversial. In a systematic review Trusted Source, researchers found inadequate evidence to determine if intravenous vitamin C was beneficial for cancer treatment.

General health and immune function

Some people receive vitamin C injections for general health or to boost immune function and for convenience. The injection means they don't have to remember to take a supplement pill each day.

It's true that vitamin C has an important function in the body, but it's controversial whether taking additional vitamin C — orally or by injection — offers any advantage for people who consume adequate vitamin C in their diet.

The research is inconclusive regarding whether vitamin C reduces the chance of developing cancer, prevents heart disease, prevents eye disease such as macular degeneration, or prevents the common cold.

Weight loss

Vitamin C injection is sometimes used for weight loss. Some research Trusted Source suggests that people who don't have adequate vitamin C intake aren't able to burn fat very well. This means that it's important to ensure adequate intake of vitamin C. However, there is no scientific research showing that taking vitamin C supplements orally or vitamin C injections causes weight loss.

Side Effects of Vitamin C injection

An inappropriate amount of Vitamin C Injection can cause various side effects. This is a list of possible side-effects that may occur due to the constituting ingredients of Vitamin C Injection. These include joint pain, weakness, abdominal cramps, weight loss, and painful urination. Vitamin C Injection is not adequate for the patients having kidney stones and a problem of hemochromatosis. The most common side effects of this drugs are:

- Vomiting
- Nausea
- Back Pain
- Diarrhoea
- Headache
- Flushing
- Skin Redness
- Stomach Cramp
- Stomach Upset

Vitamin C Injection is used if your diet does not provide enough Vitamin C Injection. It can also be used to treat certain conditions caused due to low levels of Vitamin C Injection in the body. However, it would be best to consult your doctor before taking Vitamin C Injection to get maximum benefit. If you stop using Vitamin C Injection too early, the symptoms may return or worsen.

Key highlights of Vitamin C injection

Vitamin C and interaction with alcohol is unknown, if your client is intending to drink alcohol around or just after your injection please ask them to consult their doctor first. Vitamin C injections should not be administered to pregnant women unless ordered by doctor. Studies on pregnant humans or animals are not available. It is likely to be safe to use during breast feeding but again clients must get permission from a doctor. You do not need to give any specific advice for driving.

Storage and Disposal of Vitamin C Injection

Vitamin C Injection should be stored at room temperature, away from heat and direct light. Keep it away from the reach of children and pets. The patient should consult a doctor for its further uses and side effects and should inform the doctor about any ongoing medications and treatment before using to avoid undesirable effects. All sharps should be disposed of in a sharps box. See legislation for more information.

Deficiency prevalence and manifestation – B12

The 1926 figure of 10,000 deaths per year in the US suggests that vitamin B12 was a serious problem. In a population of 117 million at least 0.5% would have been given vitamin B12 deficiency as the cause of death. The majority of others that had B12 deficiencies may not have had as severe symptoms of rapid muscle wastage and death that lead to a post mortem diagnosis. Many would have died from other causes such as falling to sleep whilst working machinery, autoimmune disease, starvation due to their inability to work or other neurological conditions.

The true prevalence of vitamin B12 deficiency today is not known. This is because studies may be more focused towards specific groups such as vegetarians.

A recent World Health Organisation (WHO) technical consultation on folate and vitamin B12 deficiencies noted that B12 deficiency had the potential to be a worldwide public health problem that could affect millions of people.

In the UK, the nutritional status of the population is assessed through the National Diet and Nutrition Survey (NDNS) rolling programme, begun in 2008, funded by the Public Health England (PHE) and the UK Food Standards Agency (FSA). This is done on a small representative sample of just 1000 people and a very low cut off point for serum B12 of 150 pmol/L. A deficiency rate of 6% of the population under 60 in the UK is suggested, however this will probably be far higher.

Vitamin B12 deficiency can occur at any age but is more prevalent in the elderly due to malabsorption issues. The range of B12 deficiency in this age range are thought to be between 5-40%.

Vitamin C Deficiency

Vitamin C deficiency can lead to scurvy. Characteristic symptoms of vitamin C deficiency include:

- swollen and bleeding gums
- fatigue
- poor wound healing
- joint pain
- loose teeth
- coloured spots on the skin

In some cases, signs of scurvy can occur within a month of consuming less than 10 milligrams (mg) per day of vitamin C. Today, scurvy is rare in developed countries. It's most likely to occur in people who:

- smoke
- consume a limited variety of food
- have nutrient absorption problems

Vitamin C injections are approved by the U.S. Food and Drug Administration (FDA) for treating vitamin C deficiency. They're also approved for helping to treat serious wounds from trauma or burns. However, vitamin C injections are typically only used when vitamin C levels need to be increased quickly or when poor absorption exists.

The body systems where B12 is important

Vitamin B12 plays a key role in many body systems and organs and this list is increasing. It is needed for energy production through the Krebs Cycle, for the synthesis of DNA via the folate cycle which affects trillions of cells in the body, and for the expression of genes through epigenetic processes. It affects the proper functioning of the nervous and peripheral systems, mood and cognitive functions and the formation of blood in the bone marrow, skin and mucous membranes, bones, the

glandular system, the immune system, the digestive system, fertility and pregnancy and development of the embryo.

Vitamin B12 deficiency consequently manifests as a wide range of different symptoms, some of which appear to be unrelated or may even be misdiagnosed. B12 is fundamental to animal life and metabolism that the symptoms are also widespread.

B12 is responsible for:

- Manufacture and normal function of blood cells.
- It rapidly divides all cells from epithelial cells to bone marrow cells.
- Energy production through the Krebs Cycle.
- Metabolism of fats, carbohydrates and proteins.
- Nerve cell conduction.
- Neurotransmitters.
- Endocrine systems.
- Immune systems.
- Conversion of homocysteine to methionine, then to SAMe (mood enhancing) and amino acids, with effects on many metabolic processes.
- Correct synthesis and transcription of DNA.
- Removal of toxins.

Illness and conditions linked to B12 deficiency

Neuropsychiatric disorders

The earliest symptoms of B12 deficiency and include:

- Irritability
- Mood swings
- Confusion
- Forgetfulness
- Fogginess
- Psychosis
- Hallucinations or delusion
- Depression
- Anxiety/Panic attacks
- Tension headaches
- Onset of dementia

Neurological disorders

- Bells palsy
- Chronic Fatigue Syndrome (CFS)
- Myalgic Encephalomyelitis (ME)

Autoimmune disorders

Autoimmune disorders take many forms, they include overactive immune system disorders when the body's immune system attacks and destroys its own tissue and underactive system disorders when the body's defence against disease is reduced. Such disorders are frequent with vitamin B12 deficiency. The list includes:

- Addison's disease
- Amyloidosis
- Ankylosing spondylitis
- Coeliac disease • Crohn's disease
- Dermatomysositis
- Graves' disease
- Guillain-Barre syndrome
- Hashimoto's thyroiditis
- Multiple sclerosis (MS-like presentation/SACD (subacute combined degeneration))
- Myasthenia gravis
- Pernicious anaemia/B12 deficiency
- Reactive arthritis
- Restless leg syndrome (RLS)
- Rheumatoid arthritis
- Sjogren's syndrome
- Systemic lupus erythematosus
- Type 1 diabetes
- Ulcerative colitis

Many of the above conditions have overlapping symptoms, for example fatigue, general ill-feeling, joint pain and rash. Many of these conditions cease to exhibit their symptoms once vitamin B12 balance is restored in the body.

How vitamin B12 deficiency is diagnosed

The traditional way of diagnosing vitamin B12 deficiency has been with a serum B12 blood test to determine the patients B12 levels as well as the presence of any signs or symptoms of pernicious anaemia. The problem with this is that many sufferers of a B12 deficiency may not have anaemia or have a serum B12 blood level within an abnormally low range in accordance to the 'normal' ranges set. There are no national or international agreements of what a normal range is. The tests can also give false readings where they do not assess the bioavailability of the B12 or whether it is functional or not.

It is therefore better practice to look for trigger symptoms and undertake a oneminute health check to see if a client will benefit from B12 injections.

Key triggers or symptoms of vitamin B12 deficiency are:

- Tiredness
- Depression
- Hair loss
- Pins & needles
- Numbness in the hands or feet
- Tremors or palsies
- Palpitations
- Recurrent headaches
- Dizziness

The one-minute health check

Ask the client to score using the one-minute health check. The client circles their symptoms in each group and then score the severity from 0-10 (where 0 = no symptoms, 5 = symptom affects daily life to a moderate extent or 10, where the symptom is present all the time, severe and debilitating).

One Minute Health Check – Vitamin B12 Deficiency

Please circle your symptoms in each group and then score the severity from 0-10 (where 0 = no symptoms (leave blank), 5 = symptom affects daily life to a moderate extent or 10, where the symptom is present all the time, severe and debilitating).

Signs & Symptoms	Score 1 -10	Signs & Symptoms	Score 1 -10
Energy/haemopoietic		Cardiovascular/respiratory	
Weariness, lethargy, tiredness, fatigue or fainting		Shortness of breath/Wheeziness	
Sleepy, tired in the afternoon		Palpitations, chest pain	
Nervous System		Pallor, lemon yellow complexion	
Tremor, foot drop		Bruising, vasculitis	
Loss of balance, Seizures, Falls*		Gastro-Intestinal (GI)	
Tingling or numbness in hands and/or feet, burning sensation*		Sore tongue, bleeding gums	
Restless leg syndrome		Red beefy tongue	
Facial Palsy		Cracking in the angles of the mouth	
Spastic movements, crampy pain in limbs		Metallic taste, unusual taste, loss of appetite, loss of weight	

Stiffness of limbs, muscle wasting*		Gastric symptoms – acidity, heartburn	
Weakness or loss of sensation in limbs, shooting pain in back/limbs, paralysis*		Intermittent diarrhoea, IBS	
Migraninous headache		Skin, Hair, Nails & Skeletal	
Psychiatric		Premature greying	
Irritable, snappy, disturbed sleep		Alopecia, unexplained hair loss	
Confused, memory disturbance, forgetfulness, fogginess		Joint inflammation, swelling, pain	
Tension headaches		Dry skin, brittle nails	
Mental slowness, mood swings, anxiety, panic attacks, depression*		Genito-urinary (GU)	
Psychosis, hallucinations, delusion*		Heavy painful periods, irregular periods, infertility and frequent miscarriages	
Ear, Eye & Throat		Polycystic ovarian disease	
Blurred vision, double vision, drooping of eyelid, orbital pain		Loss of libido	
Dizziness, tinnitus		Shooting pain from groin to perineum	
Difficulty swallowing persistent cough		Incontinence	
Immune System		Personal & Family History	
Prone to recurrent URTI, UTI Respiratory infections		Family history of B12 deficiency (pernicious anaemia), underactive thyroid, diabetes, vitiligo, depression	
Other auto-immune conditions		Vegetarian, vegan, poor diet	
Hypoadrenalism, myxoedema, underactive thyroid		Alcoholism, smoking	

- Please refer to GP for further diagnosis.

1-3 Body systems – Clinically significant
4-6 Body systems – Severe B12 deficiency

B12 Safety

Experience has shown that vitamin B12 is completely safe, at any concentration in the diet and in the blood.

The non-toxicity of Vitamin B12 is confirmed by the US National Institute of Health Office of Dietary Supplements which states that the US Institute of Medicine (IoM) has not established any upper limit for B12 ‘because of its low toxicity’. The IoM states that ‘no adverse effects have been associated with excess vitamin B12 intake from food and supplements in healthy individuals.

The European Food Safety Authority (EFSA) states that the European Committee on Food (SCF) has concluded that ‘it is not possible to derive an upper intake level, mainly because no clearly identified adverse effect could be identified’.

Vitamin C Safety

Vitamin C can be administered via injection intravenously, subcutaneously, or intramuscularly. In the case of intravenous injections, the solution needs to be diluted in sterile saline for safety and administered slowly. This is designed to prevent complications that can emerge when medications are delivered rapidly to the bloodstream. This vitamin is relatively low risk and the most common adverse effect from a high dosage is mild indigestion. As long as a vitamin C injection is administered in clean conditions with the use of a sterile needle, the risks to the patient are very low. While it is possible to experience irritation and infection at the injection site, swabbing the site with alcohol will limit this chance. There can be some soreness after the shot, especially if a patient needs a series of injections of vitamin C, and doctors are usually careful to give shots in different locations each time to prevent this problem.
Vitamin C increases iron absorption from the food you eat. If you take very high doses of vitamin C, your body might absorb too much iron. This could be a potential problem if you already have high levels of iron in your body. If you have kidney disease, very high doses of vitamin C might result in kidney damage. High-dose vitamin C injections might increase your chance of developing a kidney stone. People who’ve had kidney stones in the past may have a greater risk. When any injection is given, there is also risk for infection.

Dosing for Vitamin B12

Standard treatment is to give a loading dose of intramuscular injections of 1mg per 1ml ampoule of hydroxocobalamin on alternative days for two weeks, then inject once every three to four weeks.

Vitamin B12 injections are a nutritional supplement and not a medicine. With proper use of sterile technique there should be minimal to no risk. It is usual to inject into the muscle (intramuscular -IM). This is because B12 is water-soluble and flows into the

fluids. Surrounding the cells of the muscle. It is therefore easily transferred into the bloodstream from an IM injection.

Injection into the subcutaneous layer is not effective like it is with fat-soluble vitamins. Injecting into the subcutaneous layer can leave a red mark on the skin, which may be due to the red colour of the vitamin B12 being trapped in the fatty tissue.

Dosing for Vitamin C

For treating vitamin C deficiency, the typical vitamin C injection dose is 200 mg once daily for up to a week.
For wound healing, the typical vitamin C injection dose is 1 gram once daily for 5 to 21 days.
For off-label uses, a wide variety of vitamin C injection doses have been used. These typically range from 10 to 100 grams. Doses may be given daily or periodically at different intervals.

Withdrawing treatment

It is important that the client is made aware that upon stopping further vitamin B12 injections may cause a quick relapse back to their original symptoms.

Recommended daily amounts of B12

Age/Life Stage	Recommended amount, Micrograms (MCG)
Birth to 6 months	0.4 mcg
Infants 7 months – 12 months	0.5 mcg
Children 1-3 years	0.9 mcg
Children 4-8 years	1.2 mcg
Children 9-13 years	1.8 mcg
Teens 14-18 years	2.4 mcg
Adults	2.4 mcg
Pregnant teens and women	2.6 mcg
Breastfeeding teens and women	2.8 mcg

What to expect post injection

- Within hours ○ Enjoyment of friends ○ Sociability ○ Mood improvements
- Within a day ○ Fatigue lessens (although this can sometimes take some weeks) ○ Become more sociable

- Within a week ○ Brain fog lifts ○ Numbness and pins and needles start to remit
- Within 2 weeks ○ Strength may return to muscles and joints
- Within a month ○ Pains in hands and feet remit ○ Strength and grip improve ○ Cyclical hormones such as fertility cycles normalise ○ Thyroid and cortisol hormones normalise

Treatment Form – B12 Injection Title

(Mr, Mrs, Miss, Ms.): .....

First Name: ..... Surname.....

Address:.....

.....

Post Code: ..... Date of Birth.....

Tel: ..... Mobile: .....

E-Mail: .....

_____I am voluntarily consenting to the B12 Vitamin Injection.

_____I understand that the procedure is a nutritional supplement and not a replacement for medical treatment or diagnosis.

_____I also understand that I may require a series of treatments over the space of 2 weeks, then one injection every 3-4 weeks

_____ I have been informed that treatment can take 1-4 weeks to notice results and a load up dose may be necessary for best results.

_____I acknowledge that no written or implied verbal guarantee, warranty or assurance has been made to me regarding the outcome of the procedure.

_____ If symptoms persist or become worse, I agree to seek medical advice as symptoms may be related to other diseases.

_____I understand that the treatment can cause mild to moderate stinging sensation in the treated area that can last up to four hours.

____ I need to avoid hot baths and showers, saunas, steam rooms and public pools for 48 hours post treatment.

____There is a small risk of infection of the treated skin area after the procedure, although this is not expected to occur due to the sterility of the medical devices used.

____ Other side effects include, bruising, swelling, hematomas and slight reddening of the area that may be present for up to 7 days.

____ I understand that stopping treatment at any time may cause the original symptoms to return.

____ I understand that individual results may vary, and no guarantees are made in regard to the expected outcomes of this procedure. I am happy to proceed with this treatment on this basis. ____ I confirm that the treatment and product being used has been explained to me in full and that I am happy to proceed with the treatment on that basis. I have asked all questions that I may have and received all appropriate aftercare.

____ I understand that I am undertaking this treatment knowing the full facts, side effects, treatment outcomes and complications and I will not hold the clinic responsible should any issues mentioned above occur.

____ I give full consent to the use of my before and after images for marketing purposes, providing all identifying features are covered and that there is no way to identify myself from the image. Images will be kept for 6 years and may be used in the event of a claim being brought against us. They will be stored on a password encrypted hard drive.

____ Under GDPR rule I understand that I have full access to all data held on me. This data will be held by the clinic for no longer than 6 years for insurance purposes, after which, digital information will be deleted permanently, and paper documents will be destroyed. All information on myself is kept on password encrypted hard drives or locked in filing cabinets to which only selective staff members have access. None of my personal data will be sold or used for anything other than to provide the services of this clinic.

Please ensure you understand the potential complications and personal requirements of the B12 Injection procedure indicated below and please acknowledge or answer the points and q uestions:

	YES	NO
Are you allergic to local anaesthetics, do you have a history of anaphylactic shock (severe allergic reactions)?		
Do you consent to the use of a local anaesthetic?		
Do you suffer from any known allergies? If yes, please specify on the next page of this form.		
Have you taken oral retinoids (Roaccutane) in the last 12 months?		
Are you using topical retinoids/Vitamin A products?		
Do you have active acne with papules or pustules?		
Are you taking Aspirin, Warfarin, other anti-coagulant treatments or any other medication or dietary supplements such as Omega-3 that can affect platelet function and bleeding time?		
Do you have or have you had any form of skin cancer?		
Are you taking/receiving steroids, chemotherapy or radiotherapy?		
Are you taking any other medication? If Yes, please specify on the next page of this form.		
Do you suffer from any illness e.g. diabetes, angina, epilepsy, hepatitis, auto immune disease?		
Do you suffer from keloid or hypertrophic scars?		
Do you have a history of herpes simples (cold sores) or other skin infections?		
Have you undergone a laser resurfacing or skin peel in the last 6 weeks?		
Are you pregnant or is there any possibility that you are pregnant?		
Are you pregnant or breastfeeding?		
Will you refrain from intensive sunlight exposure and/or artificial UV exposure for a period of at least 2 weeks?		
Will you use topical sun protection products with an SPF 30+ or higher and with stated UVA/UVB protection on a daily basis with regular applications for the same period?		

Additional comments:

I confirm that to the best of my knowledge that the information that I have supplied is correct and that there is no other medical information I need to disclose.

I understand that treatments and products is not an exact science and therefore that no guarantee can be given as to the results of the treatment referred to in this document. I accept and understand that the goal of this treatment is improvement, not perfection, and that there is no guarantee that the anticipated results will be achieved.

Patient/Client Signature: ..... Date: .....
Practitioner Signature: ..... Date: .....

Date	I have read the consent	Signature

Treatment No.	Date.	Needle Batch No.	Product Batch No.
Notes:		Injection Site:	
		Next Visit Date:	
		Administered by:	

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Notes:		Injection Site:	
		Next Visit Date:	
		Administered by:	

Side Effects

Mild side effects and potential risks, which should be referred to a doctor if they persist or worsen, include:

- pain, redness, or itching at the site of the injection
- mild diarrhoea
- swelling sensation in the body

More serious side effects, which require immediate medical attention, include:

- muscle cramps
- irregular heartbeat
- unusual weakness or tiredness
- swelling of the ankles or feet

Severe reactions are very rare but require emergency intervention. These include:

- itching and swelling of the face, throat, or tongue
- breathing difficulties
- severe dizziness
- sudden vision changes
- slurred speech

Contra-indications for B12

- Allergy to any of the products ingredients
- Pregnancy or breastfeeding
- Liver or kidney disease
- When under close medical supervision at hospital
- Active cancer/undergoing chemotherapy or radiotherapy
- Prone to keloid scarring

Contra-indications for Vitamin C

Vitamin C can interact with some other medications amd can make your urine more acidic. In some cases, this can change how your body gets rid of certain medication. This in turn can change levels of some medications in your body and result in decreased effectiveness or increased side effects. Some of these medications include:

- fluphenazine (Prolixin)
- magnesium salicylate (Novasal)
- mexiletine (Mexitil)
- salsalate

There is some concern that high-dose vitamin C might make radiation therapy and some chemotherapy drugs less effective. However, this is controversial, and more evidence is needed. If a client is taking other medications or being treated for cancer, advise them to talk to their doctor before taking high-dose vitamin C injections.

Injecting

Good injection technique can mean the difference between less pain and injury. The administration of intramuscular injections is a common nursing intervention in clinical practice.

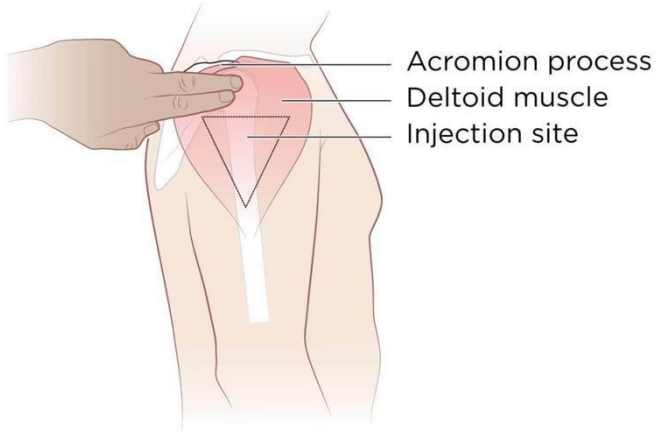
The importance of good injection technique cannot be understated. It should not be forgotten that among potential complications of IM injection are abscess, cellulitis, tissue necrosis, granuloma, muscle fibrosis, contractures, haematoma and injury to blood vessels, bones and peripheral nerves. Although IM injection is a commonplace nursing practice, there is a dearth of guidelines for anyone injecting. It has been outlined that there are no working policies or procedures on administering injections to which we can follow or refer. You will be shown the best method of injecting B12 intramuscularly in the upper arm.

The deltoid site

The ease of access, especially in an outpatient setting, possibly adds to the frequency with which the deltoid site is used for IM injections. This site is used for immunisations/non-irritating medications, hence vaccines which are usually small in volume tend to be administered into the deltoid site. This is a relatively small area and muscle mass, especially in atrophied patients compounded by the close proximity of the radial nerve, brachial artery and bony processes to this site means that more substantial injuries can occur.

- Find the knobbly top of the arm (acromion process)
- The top border of an inverted triangle is two finger widths down from the acromion process
- Stretch the skin and then bunch up the muscle
- Insert the needle at a right angle to the skin in the centre of the inverted triangle

Caution: This is a small site – give only 1-2ml or less of fluid in this site
It is important to limit volume of medication based upon size of muscle, i.e. 0.5-2ml.



Step 1

Thoroughly wash your hands before handling your supplies. Clean hands will limit contamination of the product and of the injection site. Wear non-latex gloves.

Step 2

Gather your B-12 medication vial, a 1 ml syringe and a 22- to 25-gauge needle that's 1 to 1 1/2 inches long. The larger-gauge needle is finer than the 22 and will provide the most comfort during the injection. Also, the needle needs to be long enough to reach the muscle of the person you're injecting.

Step 3

Attach the needle to the syringe. Make sure the needle locks onto the syringe by first inserting then turning it until it securely locks in place.

Step 4

Prepare the injection. Uncap the B-12 vial and wipe the top of it with an alcohol swab. Then draw an amount of air equal to the volume of your injection into the syringe. For example, if your dose is 1 ml, pull back the plunger on your syringe to the 1 ml mark. Pick up the vial and insert the needle of the syringe into the vial at a 90-degree angle. This will prevent coring--the introduction of pieces of the vial's rubber stopper into the vial. Inject the air into the vial and, after inverting the vial, draw the appropriate volume of B-12 solution into the syringe by pulling back the plunger. Withdraw the syringe and needle from the vial.

Step 5

Choose your injection site. Intramuscular shots are given in the upper arm. Prepare the injection site by cleaning it with alcohol.

Step 6

Inject the medication into the muscle by inserting the needle at a 90-degree angle using a quick and smooth motion. Then depress the plunger, slowly releasing all of the medication into the muscle. Withdraw the needle and discard it in a sharps container.

Step 7

Apply pressure to the injection site using a cotton ball to reduce bleeding. Apply an adhesive bandage if needed. **Things You'll Need**

- Sterile 1 ml syringe
- Sterile 1- to 1 1/2-inch 22- to 25-gauge needle
- Latex gloves
- Alcohol swabs
- Cotton swab
- Adhesive bandage
- Sharps container

Tip

If you give the injection in the arm, always choose the least dominant arm, because you may have residual soreness after the injection.

Warning

To avoid needle stick injury, never recap the needle.