Acrylic NAILS

TRAINING MANUAL



STUDENT NAME

Welcome

ACRYLIC NAILS TRAINING MANUAL

ARE YOU THINKING ABOUT BECOMING A NAIL TECHNICIAN?

With acrylic nails you can pretty much change up the shape and length anytime you want. Go from square to round, to almond, and back again. A nail junkie needs these kinds of options! You can do whatever you want with acrylics! Be as outrageous with the length, color, size, shapes, finishes, and even accessories. There's not limit to what you can create with them.

Yes, acrylics are artificial, but when applied correctly, no one can tell. The nails are super customizable, and when filed down to the right width and thickness, it's hard to spot where the natural nail ends and where the acrylic begins.



When your client wants all their nails to look the same, but some just grow totally different than others, acrylics help create gorgeous consistency. No one is the wiser to the differences anymore, including your client!

This Acrylic Course also includes how to safely apply, maintain, and remove the nail extensions so there is no need for expensive follow-on courses.

Once that acrylic is dry, your client's talons are a force to be reckoned with. From cans, to mail packaging, these babies are hard to break. So, if you're looking for a treatment which will provide your clients with strong nails, look no further!

This Acrylic Nail Extensions Training Manual will provide you with all the practical and theory knowledge you require to ensure you have the very best qualification to start your own business or gain employment in a salon. Acrylic nails are a very popular service so you can quickly start earning money!

Please Enjoy

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Nail Extensions

TECHNIQUES: AN INTRODUCTION



It is no longer sufficient for a manicurist simply to be able to carry out a manicure and a pedicure treatment. Modern technology has put within her reach a vast array of products and techniques which may be used to carry out permanent or semi- permanent repairs and extensions to broken, damaged, bitten, or short nails. It is the duty of a manicurist to be competent to provide these for her client,
immediately and on request. Such a manicurist is now more accurately known as a 'nail technician' - one who uses current advances in modern technology to provide the best possible nail service for her client.

Note: It is logical to study the different techniques of nail extension before studying methods of repairing nails, because the most efficient and durable repairs are carried out using modified nail extension materials and techniques.

Nail extensions fall within two main categories: ***temporary and permanent.***

Temporary Extensions

These are pre-formed complete nail covers which are designed to last from one to fourteen days, depending on the type of adhesive used.

Permanent' Extensions

These are built up and extended from the client's natural nail. They were originally designed for permanent and continuous wear, partly because of the difficulty of their removal! Improvements in products mean that many of the 'permanent' nails can now be removed at any time with no damage to the natural nail beneath. In order to wear these nails for any length of time, they need salon maintenance treatments every two weeks to deal with problems associated with the area of natural nail growth at their base. These nails fall into three main categories.



THE THREE MAIN SYSTEMS IN USE

There are three mains 'systems' that the industry is familiar with – acrylic, UV gel and fiberglass – but the names that are now in common usage are inaccurate and can be misleading. The inaccuracy of the names of the systems is unimportant as they are widely accepted and understood, but an understanding of the underlying chemistry will show the discrepancies. The three main systems have several derivatives that confuse the situation even more, but the different systems refer more to application methods than the system components and chemistry. We can briefly look at each of them.

Acrylic

This system uses a liquid monomer and a powder polymer that, when mixed together, form a solid. This should more accurately be called liquid and powder.



UV GEL

This system uses a gel that is supplied as a 'pre-mixed' product and forms a solid when exposed to ultraviolet (UV) light.



FIBERGLASS

This system utilizes the additional strength of a fiber mesh – that can be man-made fiberglass or natural silk or cotton – together with a resin that hardens.

The way in which each of these systems works from a chemistry point of view is actually very similar. The application and type of product differs enormously.

When a nail technician starts their career, or is thinking of starting, one of the most confusing and difficult decisions is which system to learn. It is important, in spite of any advice to the contrary, to concentrate on one system at the beginning. The application of artificial nails is a practical skill that needs lots and lots of practice.

Experience can be achieved only by working with different clients, as experience cannot be taught. A deep understanding will provide the knowledge of how to deal with every situation. While these skills and understanding are being gained it is better to avoid the complication of trying to understand system differences and characteristics. Once the skills have been achieved and the technician has plenty of experience of different situations and problems, it will be a very easy matter to 'add on' another system. In this way the intricacies of the system can be concentrated on.

The Science

ANATOMY AND PHYSIOLOGY: NAIL TREATMENTS

Hairdressers learn about the structure of hair, how it grows and where it comes from; beauty therapists learn about the structure of skin, the underlying muscles and bones and the basic workings of the human body. They do this in order to understand the area that is being treated, how to vary treatments for individuals, how to recognize potential problems and how to put right something that has gone wrong. Nail technicians must do the same. They must learn about the area of the human body they deal with. This will ensure that they work safely, understand when and how to adapt treatments, give the best possible advice to their clients, and know how to deal with problems.

Areas of the body are not isolated. The body functions because several systems within the human body work together. When one of these systems does not work properly, many areas of the body and other systems are affected. The main 'systems' in the human body are, the nervous system; cardiovascular system (heart, lungs and circulation); digestive system; skeletal system; endocrine system (glands); urinary system; and reproductive system. Many organs are concerned with and form part of these systems and, when they all function correctly and efficiently, we have a healthy body.

Although it is not necessary to have an in-depth understanding of all the workings of the human body, it is useful to have a basic understanding of how all areas affect the parts relevant to a nail technician.

A natural nail is an adaptation of the skin and is surrounded by skin. By understanding how the skin is formed and why, helps us to understand how a nail is created and what may be happening if the nail is growing less than perfectly. The hands and feet are a collection of bones, connected by muscles, nourished by a blood supply, and surrounded by skin.

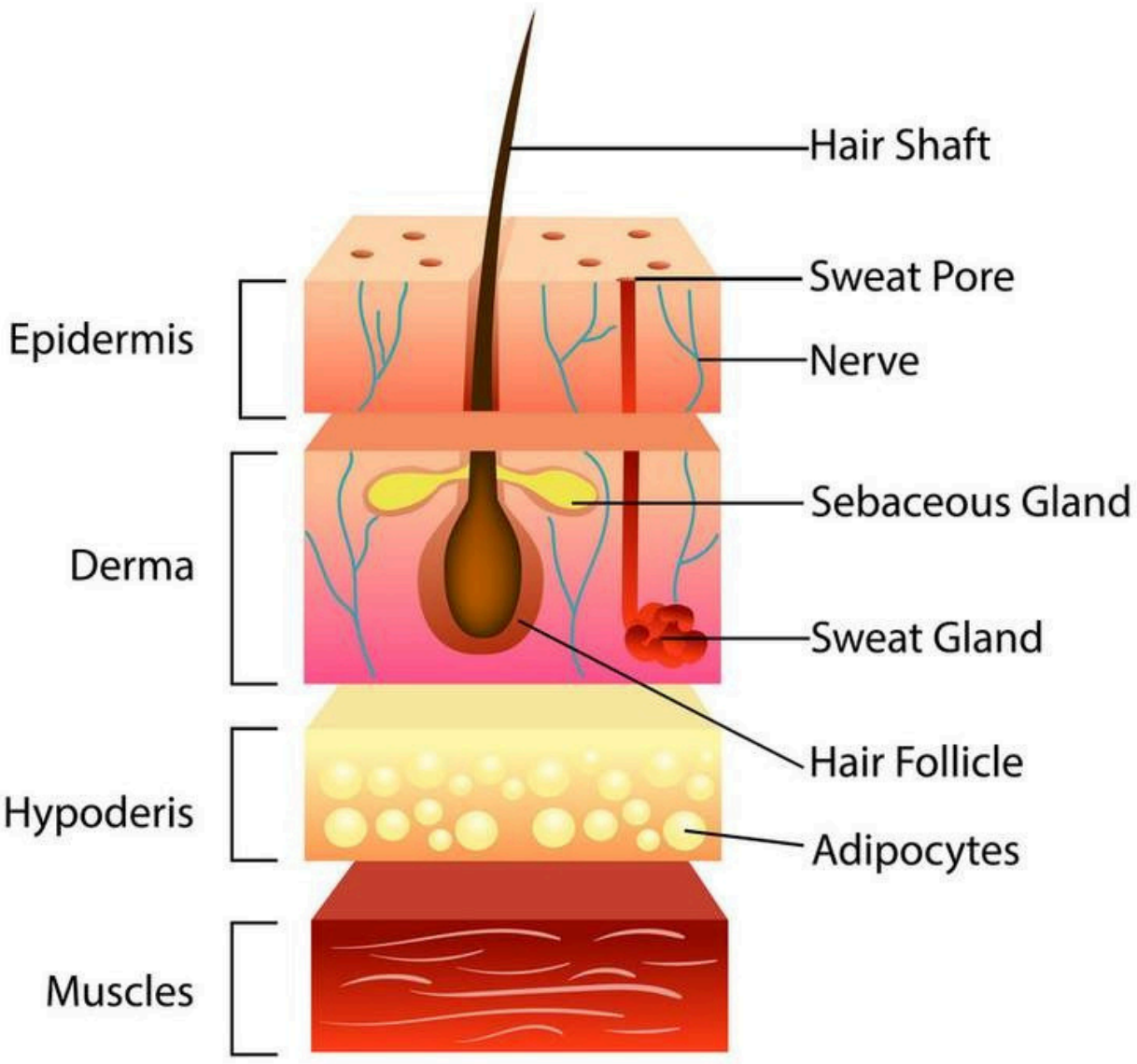
ANATOMY OF THE SKIN

The largest organ of your body is your skin. This amazing organ is a fine-tuned barrier that selectively allows certain substances into the body, while keeping harmful pathogens and pollutants out. It is a sophisticated filtration system that protects us from negative environmental factors.

Our skin is vital for preventing internal organs and tissues from being exposed to ultraviolet (UV) radiation, pollutants, toxins, temperature extremes (thermoregulation), and microorganisms such as viruses and bacteria (immunologic surveillance). Additional essential functions of our skin include sensory perception and fluid control.

The epidermis, dermis, and the hypodermis are the three main layers of skin. The layer we see in the mirror is the epidermis. This visible outer layer is made up of approximately four to five layers of skin cells. The thickness of the epidermis is dependent on where it is located on the body. Our sturdiest and thickest layers of skin are found on the palms of our hands and the soles of our feet.

These five layers of skin cells are 1.5 mm thick and regularly take a beating in daily use, so it is understandable that is where the thickest layer of skin would be found. The areas of the body with 4 layers are known as "thin skin." The thinnest layers of skin at 0.05 mm in thickness are found behind the ear and on the eyelids.



The middle layer of skin is referred to as the dermis. The dermis is the area often addressed in anti-aging treatments because it is where we find fibroblasts and collagen, factors that contribute to whether our skin looks wrinkled or more youthful in nature. The dermis contains not only collagen, and fibroblasts but hair roots, elastin, sebaceous glands, blood vessels and sensory structures.

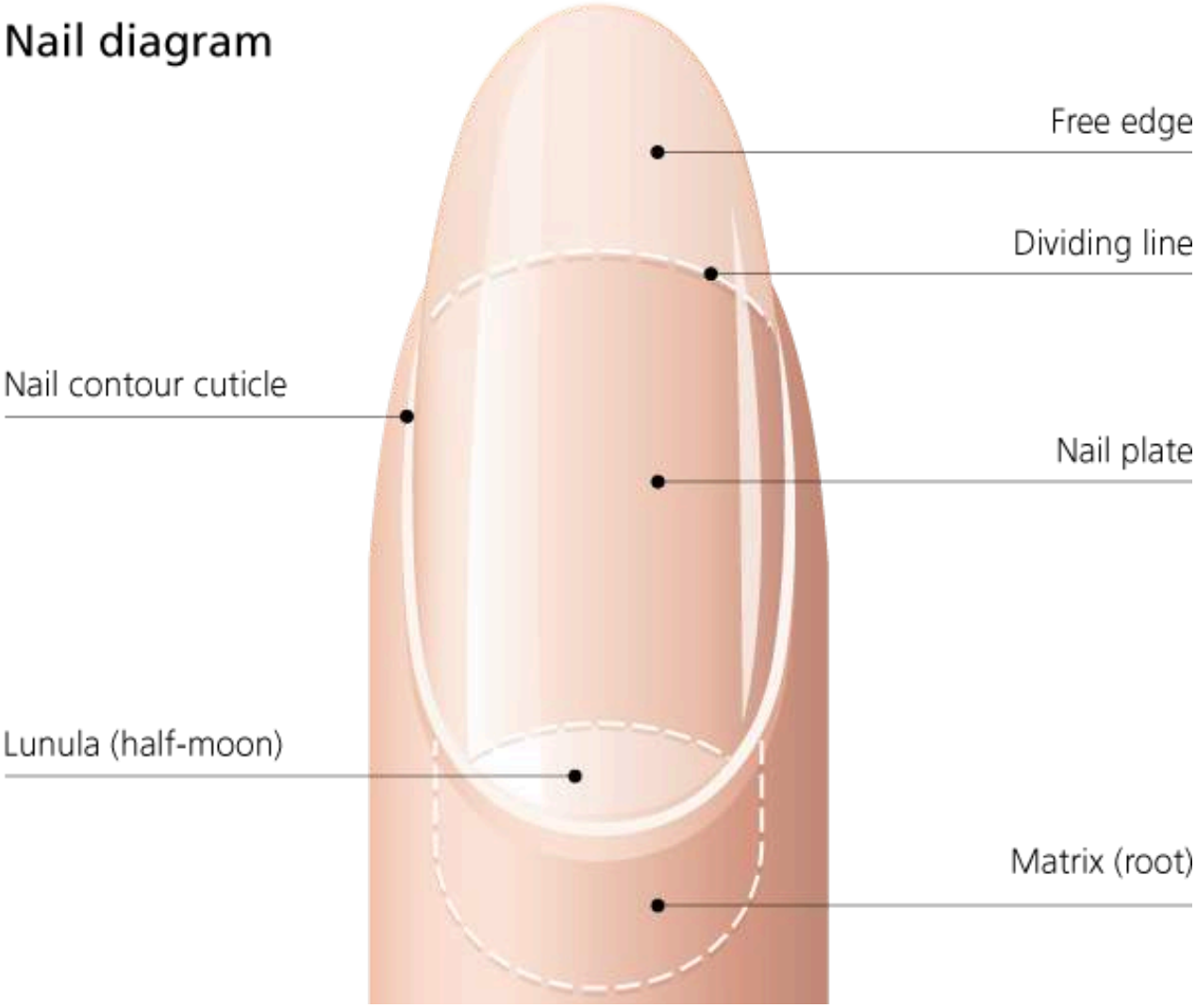
The dermis itself is further separated into two layers: the papillary above and the reticular layer on the bottom. The dermis provides cushioning and protection and gives us our sense of touch. While epidermal thickness remains fairly constant throughout life, dermal thickness will vary with age.

Underneath the dermis and epidermis is the deepest layer of skin, the hypodermis. The hypodermis is also known as the subcutaneous fat layer, or subcutaneous tissue. This layer of fat insulates us and helps regulate our temperature.

TIP: A gentle pinch to the skin on the backs of the hands demonstrates age and skin condition. A young and hydrated skin recovers immediately. Older and/or dehydrated skin takes longer to recover. Experiment on different ages of skin to discover the difference.

THE NAIL UNIT

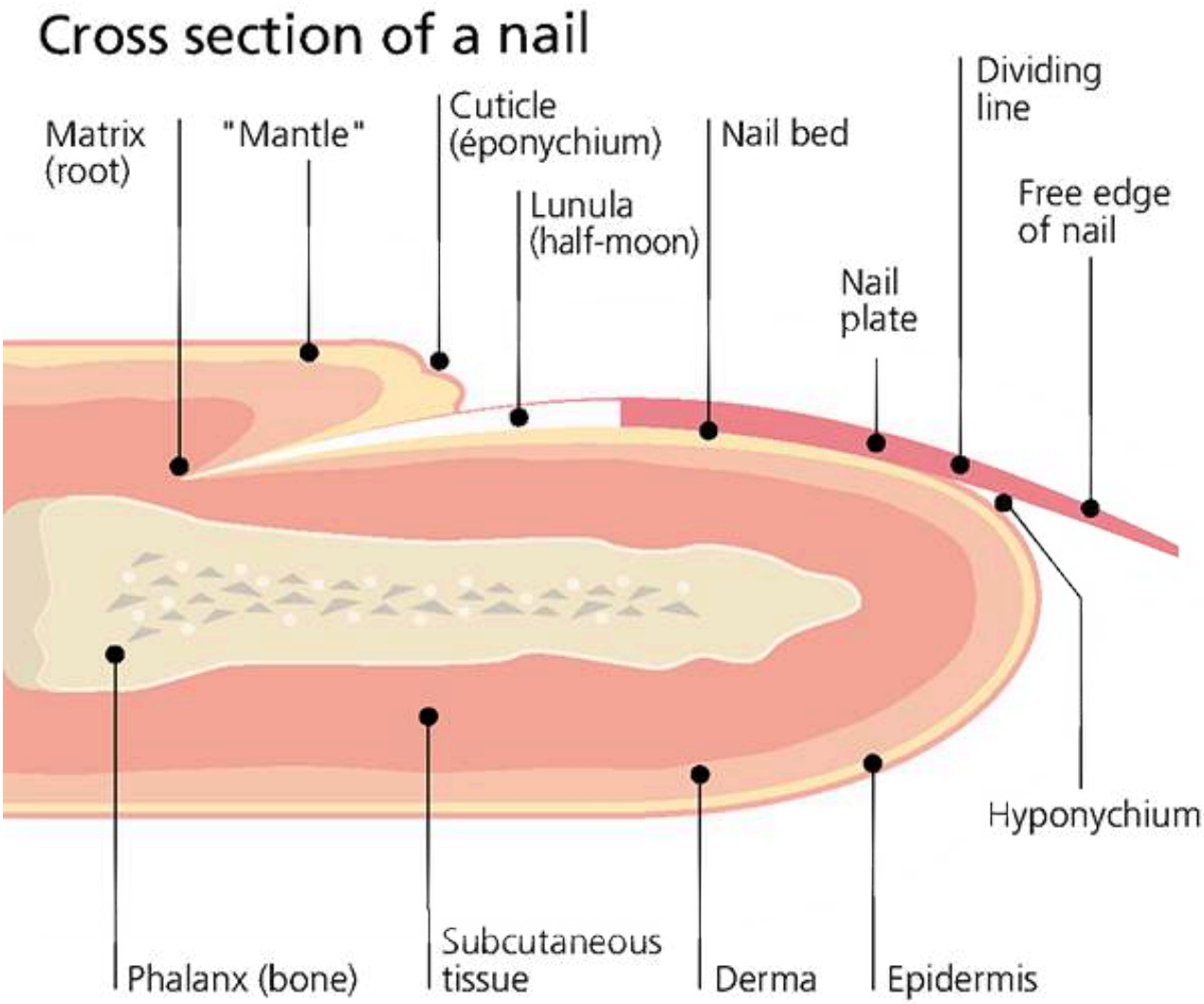
A basic understanding of how the skin is structured and how it grows should help with understanding how finger and toenails are formed as a nail unit.



Like the hair follicle, the area where the nail starts life is a fold of the epidermal layer where skin cells are instructed by their nucleus to make certain adaptations. In the skin, they become keratinized to form the flattened cells of the stratum corneum. In a hair, they are keratinized and adapted to create a hair shaft. In a nail, they are also keratinized and form flat layers that make up a hard nail plate. Like the upper layer of the epidermis (stratum corneum) and hair, the nail is non-living.

THE FUNCTION OF THE NAIL

All species of primate have nails. They are linked to the evolution of using hands (and feet) to manipulate objects. Humans, however, are the only animals able to use the thumb and forefinger in a pincer movement. The higher primates, such as gorillas and chimpanzees, have hands that are very similar to ours with fingerprints and perfect nails, but they cannot manipulate their thumbs as we can. There is a theory that this arrangement of our thumbs gave our species the opportunity to evolve faster, as we were able to use a wider variety of tools.

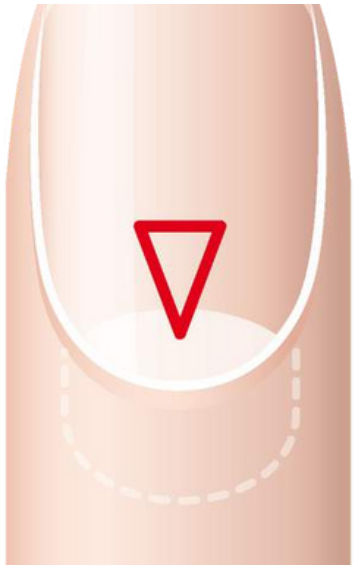


Nails are on the ends of our fingers for several reasons and are not just there to paint or chew! They provide a rigid support for the end of the finger, allowing us to pick things up more easily, and they protect the end of the finger and the last bone from countless knocks.

Nails start to form in an unborn baby very early in the gestation period and by 17–20 weeks are fully formed. Nails will even grow for a short period after death, as the cycle of adaptation of the skin cells and keratinization will continue, once it has started, without any nourishment from the blood supply.

THE STRUCTURE OF THE NAIL

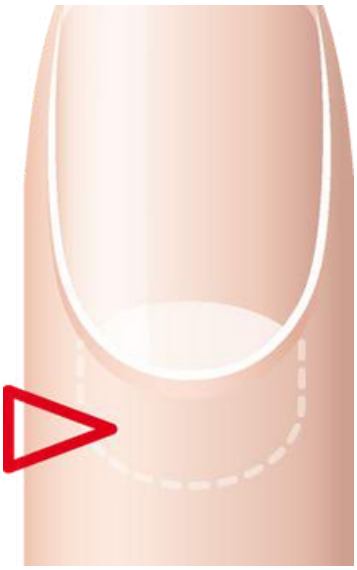
MATRIX



This is the most important area of the nail unit. It is directly under the proximal nail fold or mantle, and it is where the skin cells are adapted to form the nail plate. As the skin cells become keratinized, they bond together and lose the other cell contents. Unlike in the epidermis, where the bonds break down and the cells are shed, the bonds in a newly forming nail plate are much stronger, and the lipid content is retained. The keratinized cells form layers, or lamellar, and several of these bonds together to form the nail plate.

The shape and size of the matrix will determine the thickness and width of the nail. The matrix extends from the base of the nail down towards the first joint. The longer the matrix, the thicker the nail. Thin nails will tend to have a short matrix. The width of the nail will be determined by the width of the matrix. Naturally thin (or thick) nails are hereditary; however, a lot can happen to them once they are grown to change this characteristic.

The developing nail in the matrix is very soft until full keratinization has taken place and damage to this area can result in a permanently deformed nail. Examples can be seen in a person who has shut their finger in a door, even as a child. If the area of the matrix is damaged, the base of the nail and the nail plate may have a permanent ridge. Another example would be if someone has had a serious infection in the area. If damage to the area is temporary and heals properly in the matrix, any deformity to the nail should grow out in approximately 6 months after the damage has healed.



PROXIMAL NAIL FOLD OR MANTLE

The epidermis of the skin on the finger, above the matrix, folds back on itself and underneath. As in the hair follicle, the deeper area of the fold forms part of the germinal matrix and helps protect the area.

This area of skin can often be quite large and unsightly, for example, when it is stuck to the cuticle, the nail grows and pulls the skin with it. When the skin is overstretched it splits, usually at the sides, and appears ragged. These splits can be quite sore and, if pulled, can become infected and inflamed. The split piece of skin can be very carefully removed with cuticle nippers.

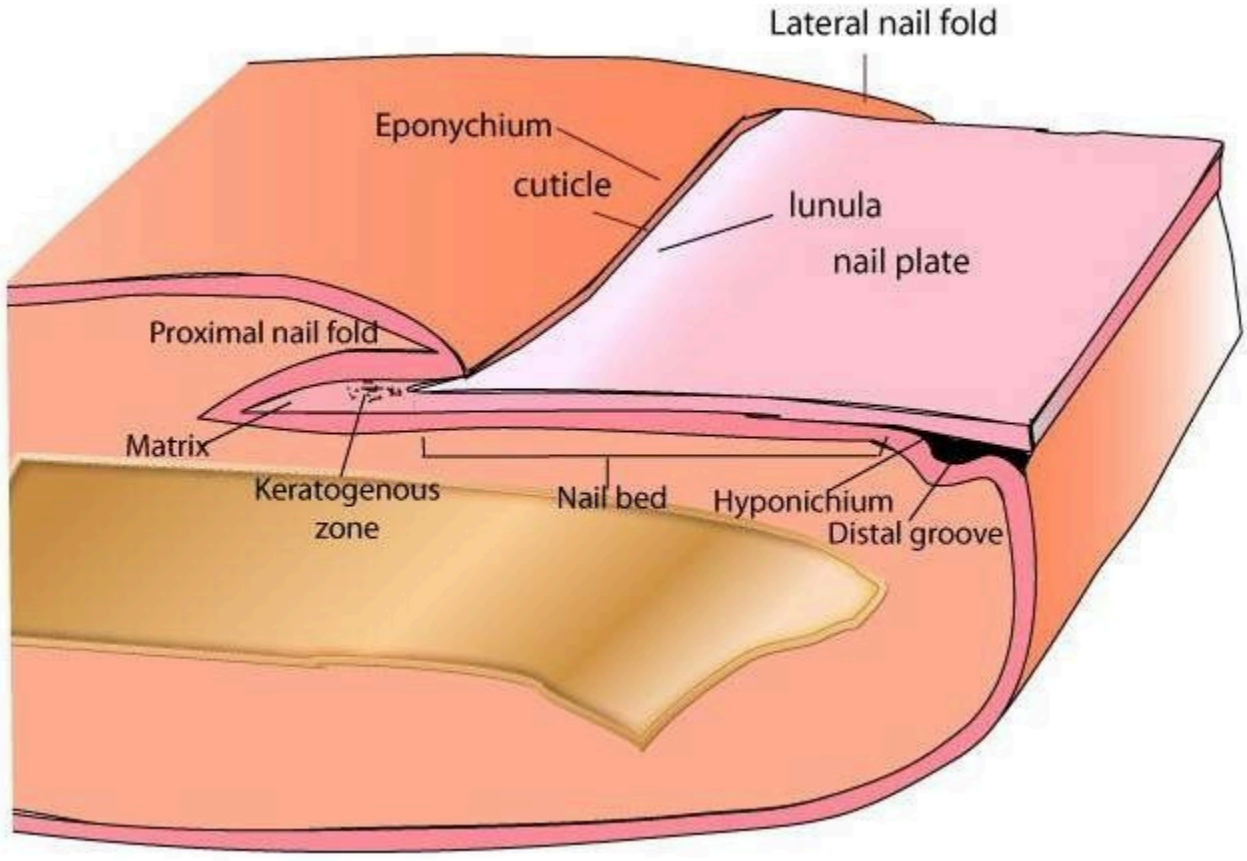
Proper care of the nails ensures that the nail fold does not stick to the nail plate as it is regularly lifted away. This area should not be pushed as this can cause damage to the underlying soft nail and matrix. The area also forms a seal around the proximal edge of the nail that prevents bacteria from entering.

When the nails are soaked in water or softened with oils, the nail fold can be lifted with ease. It is not recommended that the lifted skin is cut on a regular basis. The body is expert at protecting itself and, if an area is removed, the body will often compensate and grow thicker skin.

If the skin has been lifted for the first time and is unsightly, careful removal may be carried out with a hygienic pair of nippers, used correctly. The area should then be treated with oil or cream to keep the skin soft and prevent it from sticking to the cuticle.

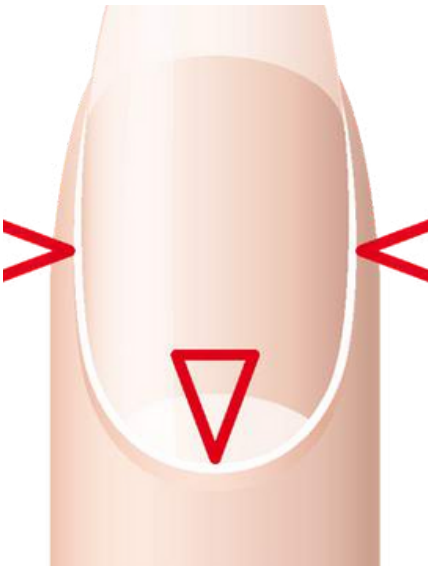
LATERAL NAIL FOLD OR SIDE WALL

The skin of the finger folds down along the side of the nail and provides the nail plate with protection and a groove to guide the growth of the nail. A seal is formed here to prevent the invasion of unwanted substances or microorganisms.



EPONYCHIUM

The eponychium is an area at the base of the nail plate where the proximal nail fold meets the nail plate. It acts as a seal for and guards against invasive bacteria. During a manicure, this area should be treated gently because, if the seal is broken, not only is it painful, but infection can occur.



THE CUTICLE

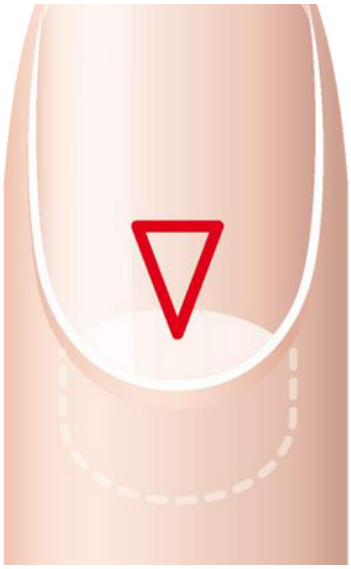
The nail fold is often called the cuticle, but this is inaccurate. The underside of the proximal nail fold constantly sheds a layer of clear skin that sits on the nail plate and grows with it. This is the real cuticle and is not always visible until softened. This is the skin that should be removed during a manicure and always before the application of artificial nails to avoid any lifting problems, as products do not bond with skin, only with the nail plate. This skin is sometimes called the pterygium. When using a cuticle knife, it is usually possible to feel the difference between skin and hard nail even if the skin is not visible.

As the epidermis of the nail fold produces this layer continuously, there is always some to be found on the nail plate, however little.

THE ONYCHODERMAL BAND

This is the area of the hyponychium where a slight change of color in the skin can be seen. When applying a French manicure or artificial nails using a white-tip, powder or gel, it is referred to as the 'smile line' & its ideal shape should mirror the shape at the base of the nail to create a symmetrical 'top and bottom'.





THE NAIL PLATES

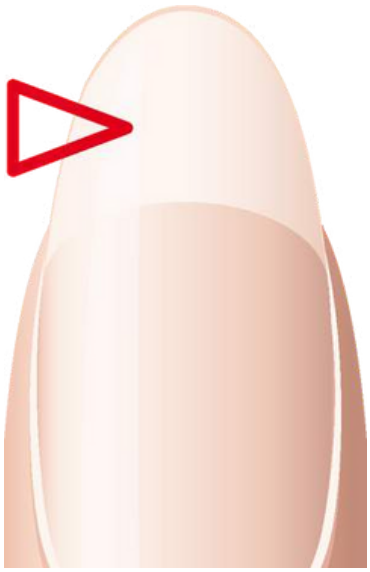
As previously explained, keratinized skin cells form the nail plate. These flattened cells stick together and form layers.

There are approximately 25 layers of keratinized skin cells. There is less concentration of lipids (fats) in the nail plate compared to the stratum corneum (1 per cent versus 20 per cent) and there are many air spaces; this allows ten times as much water to be absorbed by the nail than by the skin.

This can be seen when the nails are soaked in water, e.g., in the bath they become very transparent and flexible.

The bonds holding the cells together are tougher in the nail plate than in the stratum corneum, as the skin cells are designed to be shed, whereas the nail plate needs to be kept together. Evaporation of water soaked up by the nails can be quite damaging as it breaks down the bonds that hold the cells together causing weak & peeling nails. In fact, water is one of the most damaging substances for nails.

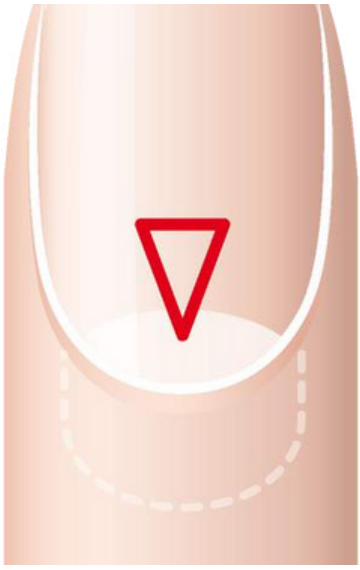
The uppermost layer of nail is formed in the deepest part of the matrix, while the lower layers are formed nearer the cuticle. This results in a very hard surface & much softer lower layer of the nail plate.



The layers of keratinized cells form themselves into three main layers of nail plate. The upper and lower layers are the thinnest with the middle layer making up approximately 75 percent of the nail plate. The upper layer is dense and hard, but thin. This is the layer that often peels, due to the damage caused to the bonds between it and the middle layer, exposing the slightly softer but thicker middle layer.

The break in these bonds allows more water to seep between the layers and causes further peeling. The lower layer of the nail plate is very thin and contains some soft keratin. This layer bonds strongly to the nail bed. When nails become too dry and peel, not only are they thinner, but also the hard-upper layer has been lost, leaving the pliable and weaker lower layers. Nails must be protected from this condition and that is why wearing gloves for washing up, etc. is always recommended. Nail varnish can also help protect the nails, as can massaging oils or cream into the cuticle area.

As the nail plate leaves the end of the finger, it forms a projection called the free edge. This appears whiter than the main body of the nail as it is not attached to the nail bed. The nail plate has a proximal and distal area, and the free edge could be described as the distal edge.

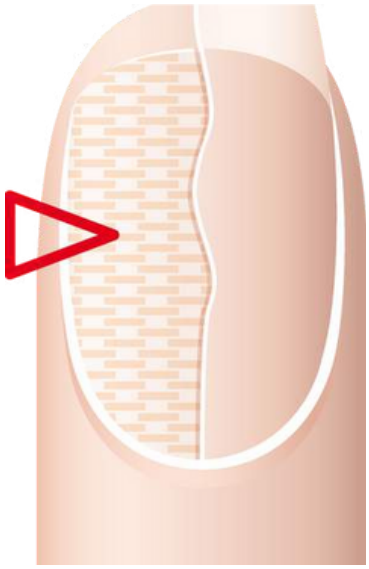


LUNULA

The lunula is also known as the half moon, an area of the nail by or under the proximal nail fold, and the front end of the matrix. It appears whiter because the cells are not yet completely keratinized and not totally transparent. Not every person has an exposed lunula and it is a misconception that the lunula (or half-moon) should be visible. The nail is still slightly soft in this area and easily damaged so, if anything, it is better that the lunula is protected by the nail fold. People who have a large exposed lunula usually have very ridged nails which is often more noticeable on the thumbs.

This is due to continual trauma to the soft nail from everyday living. During a manicure or any work done in the cuticle area, care must be taken not to press too hard on the lunula, as it will cause a ridge in the nail that will need to grow up and off the end before it disappears.

THE NAIL BED



This lies directly under the nail plate. It is skin just like on the rest of the body, but it has a very rich supply of blood and lymph vessels to keep the nail healthy. It also has a series of ridges and grooves that fit into ridges and grooves on the underside of the nail plate. These are what hold the nail onto the nail bed. If the ridges are disturbed or if the nail plate becomes too thin and flexible, this 'hold' is broken and causes the nail plate to separate from the nail bed. This is a dangerous situation as it allows bacteria in under the nail that could cause severe problems. Nail technicians must take extreme care not to over-buff the nail, as this will cause the nail to become too thin.

If this thinning occurs anywhere on the nail, it will eventually grow up to the end of the nail bed where it is most likely to result in separation. The nail plate appears pink in this area, owing to the colour of the underlying skin .

THE HYPONYCHIUM

This is the area of skin at the very end of the nail bed under the beginning of the free edge. It forms a very tight seal that prevents bacteria entering. There are many nerve endings in this area that act as a warning to this seal being broken. Sometimes, this area grows under the free edge, especially on those people with almond shaped nails, and forms an area that can be painful if pushed. It is thought to be a form of support to the free edge and care must be taken not to disturb it. It is sometimes called the solehorn. Like all areas of skin, the epidermis sheds dead skin cells continuously. These cells can often be found under the free edge, especially of the toenails, where they get trapped.

THE PROCESS OF NAIL GROWTH

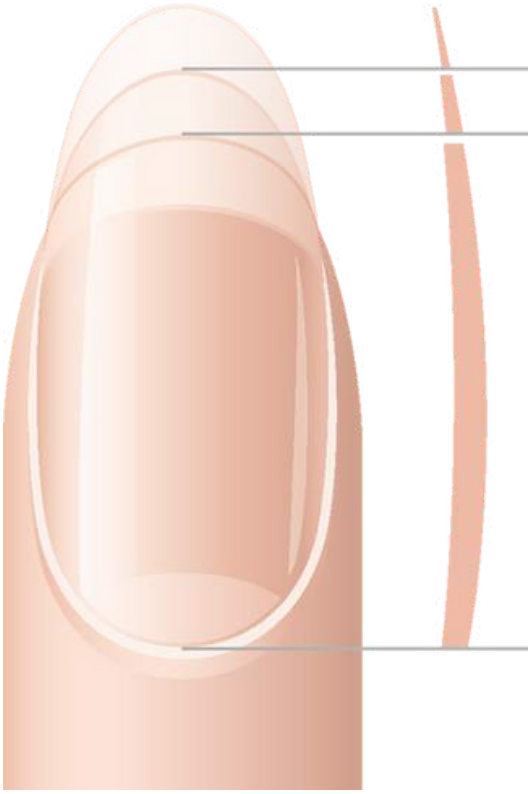
Rates Of Growth

Like hair, nails grow at different rates in individuals and at different times of the year but, unlike hair, grow continually. Fingernails grow faster than toenails. As an average guide, nails grow at the rate of between 3mm per month and it takes approximately 5-6 months for a fingernail to grow from the matrix to the free edge and up to a year for a toenail. The growth rate is faster in the summer and during pregnancy and usually slows down with age. It can be speeded up or slowed down by illness. This slow growth rate complicates the treatment of nail conditions as damage caused to the nail plate takes a long time to grow out.

The speed or strength of nail growth is not linked specifically to diet, vitamin or mineral intake but can be improved, along with the condition of skin and hair if a well-balanced diet is followed.

It is quite common to be able to see the effects of systemic trauma on the nails. For example, a general anesthetic, bereavement, illness, etc. will often show up as a line or ridge on the nail plate where the growth has been affected.

Technicians and their clients will often notice an increased growth rate immediately after artificial nails have been applied. This is due to the stimulation produced by buffing during application. The nail matrix and nail bed have a concentrated supply of blood and lymph vessels that supply the area with nutrients and remove waste products. Stimulation of the circulation in this area will improve this function and
assist growth.



Buffing the natural nail during a manicure is a valuable treatment, but care must be taken not to thin the nail or create too much heat through friction, as this can cause splitting.

The effect of stimulation to the circulation can be seen in the general growth of nails: nails on the dominant hand grow faster, as does the forefinger. Nail biters have faster growing nails owing to the continual nibbling.

As a technician, the growth rate of an individual's nails will affect maintenance treatments . Artificial nails must be maintained to compensate for this growth. The majority of clients will need to return every 2-3 weeks, but some clients need to return only every 4-5 weeks, as their growth rate is slower.

NAIL COMPOSITION AND STRENGTH

KERATIN AND AMINO ACIDS

The skin cells that are formed in the matrix have, in their nucleus, the 'instructions' needed to keratinize but, unlike the keratinized skin cells of the stratum corneum that form a barrier and then are lost, these cells form together to create the hard nail plate layers.

Keratin is a type of protein that is made in the body and the body has many different proteins that are essential to its functioning. Proteins are made up of certain sequences of amino acids. Amino acids are chemicals created by the body that, when linked together in various specific sequences, make the necessary proteins. The linked amino acids form long 'strands' and these strands are then linked together at intervals with another amino acid, bonding the strands together and creating a strong structure. The keratin of the nail has many more of these bonds than that of the skin and hair.

Hard and soft nails the progression of cells from the matrix to the nail plate is very similar to those making the journey in the epidermis of the skin. The cells are created by cell division deep in the matrix and, as they are pushed forward, lose the cellular fluid, and become flatter. The lunula is thought to be an area where this process has not quite finished, hence its whiter appearance. As the cells are pushed forward by the reproducing cells behind, they become completely keratinized, flat and hard. Therefore, the nail plate nearest to the nail fold is softer than the distal edge and can be easily damaged.

- A strong nail is one that can withstand breakage. This does not necessarily mean hard as 'hard' could suggest brittleness and the nail could easily snap. Many products on the market are nail 'strengtheners', and that can mean nail 'hardeners. If a weak nail is hardened too much, it will become brittle. If a hard or brittle nail becomes too soft and flexible, it will tear. The spaces between keratinized cells are full of moisture from the nail bed beneath and from external sources. The right amount of moisture will keep the nail flexible and help absorb shocks. Too much, and the nail bends, too little and the nail becomes dry and brittle.

- The nail plate is very absorbent and too much water can cause splitting and peeling. Excessive water can cause the nail plate to soften and swell. Repeated softening and swelling can cause surface peeling. The only truly effective moisturizer for skin and nails is
- water (and natural lipids), but in the right amount. Using creams and oils is beneficial as they can seal natural moisture in and keep too much out. Solvents, such as acetone and nail varnish removers, can remove natural oils and water and can be the cause of dryness if overused. The perfect nail is a combination of strength and flexibility. A nail specialist
- should be able to diagnose the exact condition of a client's nails and be able to recommend the ideal treatment and products. It may be that a weak nail needs a hardening treatment for a period of time followed by a moisturizing treatment. A brittle nail may need moisturizing then hardening. An understanding of nail growth and structure brings with it the ability to correctly diagnose conditions.

PROTEIN, CALCIUM AND NAILS

As mentioned before, nails are keratinized skin cells. Keratin is a protein composed of amino acids formed together in long chains and linked by an amino acid bond. The vast number of these strong bonds is specific to nails and is what makes them so much harder than skin and hair. The protein, keratin, is mostly composed of carbon, oxygen, nitrogen, Sulphur, and hydrogen. The nail plate also has traces of many other chemicals, e.g., iron, zinc, sodium, calcium, titanium, even aluminum, copper, gold, and silver.

There are many myths about calcium and nails. The body's intake and absorption of calcium is essential for teeth and bones, but as calcium is only 0.07 per cent of the nail, it does not play a large part. The body needs vitamin D in order to absorb calcium and that is obtained from the sun and diet. If this vitamin is lacking, conditions such as rickets can occur.

White spots on the nail are often blamed on a lack of calcium, but this is usually incorrect (see Chapter). They are usually caused by trauma to the nail plate causing minor separation of the layers. In rare instances, the spots may be caused by lack of the trace element, zinc, in the body, but a reasonable diet and good health does not cause this condition.

THE ARTIFICIAL NAIL AND THE NATURAL NAIL

The strength of the nail can be influenced, even during the wearing of artificial nails or varnish. The nail plate is at its softest in the area of the cuticle and there should be a narrow margin of nail that is not covered.

A nourishing oil massaged into this area daily will affect the new nail growing, so weak or brittle nails can be improved while artificial nails are worn. The massaging will stimulate the area and the oil will help to reduce the moisture loss from the new nail. If the artificial nails are correctly maintained, the natural nails should be stronger when they are removed.

Can artificial nails damage natural nails? They certainly can if they are incorrectly applied, or the wearer does not understand how to look after them properly. It is usually an inexperienced or unprofessional technician or an uneducated client who causes damage to natural nails. It is really important that technicians explain what the wearer needs to do (or not do) in between treatments.

Summa

THIS MODULE HAS EXPLAINED THE BASIC ANATOMY AND PHYSIOLOGY OF SKIN, MUSCLES, BONES, BLOOD CIRCULATION, THE LYMPHATIC SYSTEM, THE NERVOUS SYSTEM AND NAILS, NAIL STRUCTURE AND GROWTH AND THE POTENTIAL PROBLEMS A TECHNICIAN MAY ENCOUNTER IN TREATING A CLIENT IF NAIL TRAUMA OR PAST ILLNESS HAS OCCURRED.

Assessment

ASSESSMENT OF KNOWLEDGE AND UNDERSTANDING

- Explain eight functions of the skin.

1.
2.
3.
4.
5.
6.
7.
8.

- Name the layers found in the epidermis.

- What are the main structures found in the skin?

- What part does the matrix play in the process of nail growth?

- Why is it important to understand the process of nail growth and factors that affect it?

- Why should special care be taken when working in the area of the lunula?

The Work Area

PREPARATION

The only way to provide professional nail treatments is in a suitable, comfortable, and safe environment with the right tools, correctly used. This chapter will show how to create that environment, make it safe for both technician and client and how to keep it that way while abiding by the relevant legislation.

Starting with the general environment, we need to think about what sort of area is needed for a nail technician to work in, what is required within the salon and what problems need addressing that are specific to artificial nails.

EQUIPMENT

Whether the technician is working in a nail salon, a beauty salon or a hair salon, a minimum amount of space is needed. In comparison to the other services, however, the space needed is very small. This industry has a great many mobile technicians, but virtually all of the requirements that make a salon a safe, hygienic, and comfortable place also apply to working as a mobile technician. The only difference is that tools, equipment, and products need to be portable for a mobile technician. As clients are always central to the work, all the safety rules must still apply.

The Desk

When thinking about the minimum space required for a nail technician, a desk is the first consideration. There are many nail desks available from wholesalers that have been specifically designed for the job. If space is at a premium, the minimum worktop would need to be approximately 75 cm wide and approximately 35 cm deep. Ideally, the desk should have a couple of drawers, and be very stable in construction. The width of the desk should be not so wide that the technician needs to stretch to reach the client's hands if the client is sitting back in the chair, nor should it be so narrow that it causes the technician to bend their neck down too far. Before buying a ready-made desk, make sure the measurements are right for the space in the salon; sit in the chairs that are going to be used for both the technician and the client. Think about storage of all the equipment needed and, if necessary, the space required for any additional storage needs. Most ready- made desks usually have a suitable worktop that can easily be kept clean but remember to take that into consideration.

Many salons have their desks made specially to match the image of the salon. It is possible to make a functional desk fit in with any décor but remember that the suitability and safety of the desk and chairs must take priority over image. Think of the essential requirements first and design the desk around them, rather than thinking of the design first and trying to make it work.

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THE TECHNICIAN'S CHAIR

There should be sufficient space around the desk for a comfortable seat for both technician and client. Care should be taken when choosing the technician's chair, as there are several factors to consider:

- A busy technician can be sitting in the same place for, sometimes, up to 12 hours a day with very few breaks. This is far from an ideal situation, but most salons have at least one late night. As with any work equipment, safety must come first. A chair must have
- the correct support for the user. The seat should be padded and of a depth that supports the legs. The tilt of the seat also affects how we sit. The backrest should give support to the back and the combination of the back and seat should encourage the user to sit upright with a slight hollow in the lower back. Technicians are forced to work in a very unnatural position, leaning forward and with the head looking down. This puts great strain on the back and neck. Every technician should be aware that this position causes stress in the neck and shoulders and could lead to severe problems in later years. Many technicians work by leaning one elbow on the desk and having their body twisted. This is obviously very dangerous. The upper body needs to be square to the desk with the
- back straight and only a slight tilt forward. The shoulders should be kept relaxed, and the neck should not be held bent too much. There are 'posture' chairs available, on wheels and incorporating a rocking motion, that are designed to help those working at a desk. These chairs have a tilted seat and a padded support for the knees to rest on. They are ideal for the person who sits upright all the time, such as a typist, or a person who needs to lean forward slightly, as they will keep the curvature of the back in the correct position. However, owing to the nature of the technician's work, a lot of pressure is put on the knees in this position, which can be quite painful by the end of a day and may cause problems later. There are several exercises that a technician can do at various times throughout the day, but at all times sitting in the safest position and staying relaxed is essential advice.
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THE CLIENT'S CHAIR

The chair for the client is almost as important as the one for the technician. The client must feel comfortable but must also be in the right position for the technician. A client could spend up to 2 hours in the same chair, so comfort is important. A fabric-covered chair with a soft seat is preferable (plastic can get uncomfortable). The height of the seat should be such that the client can rest their arms on the desk easily while keeping them and their shoulders in a relaxed position. They should also be able to get close enough to the desk so that their arm is still supported if they lean back into the chair.

When seating a client, and during the whole treatment, make sure they are sitting straight in front of the desk. This is important for the treatment because if a client is sitting sideways, their hand will not be in the centre and not held straight to the technician. This could result in artificial nails being applied unevenly on the finger.

It is worth acquiring the very best furniture that you can afford at the time. It is often a false economy to buy things cheaply thinking that they can be replaced soon. What usually happens is that the cheap items wear out and start looking shabby very quickly, but there is always some other priority that requires the money. If space in the salon is not at a premium, it is often worth having a much larger desk than necessary (as long as it is not used as extra room to make untidy!) as small displays can be put on the extra top space. There are many inventive technicians who have designed wonderful desks with display areas, built-in waste disposal and multiple desks.

THE DESK LAMPS

Desk lamps play a very important part in the work of the technician and their desk set-up. It is essential to have excellent light when providing any nail treatment, so a lamp of the right design is important. Good light will help prevent eye strain while carrying out close work; direct light, which casts no shadows, is needed to examine artificial nails for imperfections; applying varnish and nail art needs bright light to ensure accuracy and neatness.

Lamps are visually very obvious on a desk, so they must look pleasing and fit in with the décor of the salon. More importantly, there a number of factors that need to be considered when choosing a lamp.

HEAT

One of the most important factors is heat. Commonly used tungsten bulbs give off a great deal of heat. 'Daylight' bulbs, useful for keeping colours looking true, also get very hot. This is far from ideal for the technician. The lamp needs to be quite close for the best effect, but the working temperature for the technician can get very uncomfortable. The heat will also affect many artificial nail products and make working with them difficult, for example volatile products, such as nail varnish remover and liquid monomers will evaporate faster, creating a potentially high concentration of vapour in the air space around the technician and client. Halogen or low energy bulbs do not get too hot and are a good choice.

SHAPE

The shape of the lamp needs to be such that the light does not glare into the eyes of the technician or the client; it must be close enough to be effective but not in the way; it also needs to be stable on the desk.

ELECTRICITY SUPPLY

Thought must be given to the electricity supply for the lamp. Trailing wires in a workplace are a safety hazard and should be avoided. A socket close enough to avoid trailing wires is the most suitable, but there are many alternatives. Some manicure tables have a plug socket attached to them for electrical equipment.



This, of course, needs to be connected to an electricity supply and, again, wires across the floor must be avoided. If there is no alternative to a wire on the floor by a desk or any area where people could walk, then it must be covered with a rubber conduit that draws attention to it and has sloping sides to prevent tripping while protecting the cable from damage. There should be no wires on the floor under the desk as the wheels of the chair could run over them, damage them or pull the equipment off the table. Wherever possible, wires and cables should be attached to the desk, floor or wall using special clips designed for the job that are readily available from any DIY shop.

Remember, 'nails' are part of the image industries, so make sure you always present the right image to your clients.



Nail Products

USING NAIL PRODUCTS SAFELY

PROBLEMS WITH IRRITANTS AND CORROSIVE MATERIALS

The majority of nail products come under the category of chemicals and many of them are classed as .

Care must be taken when using these types of products. There are some irritants that are also classified as corrosive, and these will cause a bad reaction with everyone.

A day-to-day example of this is household bleach that stings and itches when in contact with skin.

A common example of this type of chemical in the nail industry is an acid- based primer. This is a product commonly used in artificial nail systems and, as the name suggests, is an acid that will sting and itch on contact with skin. Washing in running water will remove the chemical, but it is likely that the skin will be temporarily damaged.

Many other commonly used products are irritants – for example, nail adhesive is an irritant, and every bottle and tube should carry a warning. Obviously, the adhesive will bond to skin very easily, but a drop of it spilled onto skin can also cause a chemical burn. (Water will stop the burning and acetone will debond the skin.) If adhesive is spilt onto clothing and penetrates through to the skin, very severe burns can be caused. The chemicals in the adhesive react with man-made fibers in the clothing and burns requiring cosmetic surgery have been known as a result of this accident.

It is a legal requirement for there to be warnings on many labels, but the absence of a warning does not necessarily mean a product is safe. All products should be treated with respect and all potentially hazardous products should have a document called the Material Safety Data Sheet (MSDS) available from the supplier.

ALLERGIES AND SENSITIVITY

All chemicals are potentially harmful but the dividing line between a safe and harmful chemical is often the quantity of it. This dividing line varies from person to person. When a harmful chemical touch the body in any way, the body reacts to it. This reaction can take many different forms, but the most common is an allergic reaction.

People develop an allergy or sensitivity to a substance by coming into contact with too much of it. It is this level of 'too much' that is so variable.

One individual may become sensitive to a particular ingredient in a hand cream after two uses; another may take years before a reaction occurs if one occurs at all.

As many nail products are classed as irritants, it is very likely that most individuals will develop a sensitivity to them at some time.

As no one can tell how long this will take or how much of a specific product needs to come into contact with a person, it is important to take measures to avoid the possibility of a sensitivity building up. It is also just as important to be able to recognize the first signs of this in both the technician and their clients.

ABSORPTION, INGESTION, AND INHALATION

There are three ways that potentially harmful chemicals can enter the body and if each of these 'routes of entry' is prevented as far as possible, all hazards are avoided.

The 'routes' are:

1 Inhalation: that is, breathing in vapors or dusts. This one is not so easy to control, but by following strict working practices and hygiene rules, the problem can be solved.
2 Ingestion: that is, through the mouth. Avoidance of this is even easier! Wash hands frequently, especially before eating; do not eat or drink at a desk; and follow reasonable salon hygiene rules.
3 Absorption: that is, chemicals can enter through the skin. This is probably the most common cause of problems for technicians and their clients and can be easily avoided.

We will look at all three in more detail.

Inhalation

If you think about the salon environment and what type of salon it is, you will realize there are certain requirements to ensure the safety and comfort of staff and clients.

Vapours

Many nail products involve volatile chemicals and even the tidiest technician cannot totally prevent some of the vapors escaping into the air. Adequate ventilation is therefore essential. In a very busy nail salon, a sophisticated ventilation system is ideal, but this can be costly and is not always necessary for smaller establishments with a few nail desks. If a larger salon decides that suitable ventilation is needed, expert advice should be sought as there are complicated calculations involved in determining the type of ventilation equipment required to change the air in the salon several times an hour.

Later we will discuss this in more detail, but vapors are molecules of actual chemicals in the air and, although most nail products have strong odours, if there is no obvious smell it does not mean the vapour is not there.

Not all hazardous chemicals have odours that can be detected. A fan in a salon is no substitute for a ventilator, all it does is move the air around. The salon needs the air to be changed regularly, and this can only be achieved by proper ventilation. Extractor fans can assist in removing vapors and are relatively inexpensive, but there must be enough of them of the right size, and they must be in the right position to be effective.

The vapors that need to be eliminated are always heavier than air so the molecules will collect nearer the floor. High-level extractors, if of a sufficient size for the room, will in theory lift the vapors up and expel them. However, in doing that, the air is brought up past the breathing spaces of those in the salon so some of the vapors will be inhaled. Some vapors will also be left at the lower levels. Extractors that are set lower down will remove the vapors without having to lift them up.

Some nail products are used as a spray. This is an obvious potential hazard as the chemical vapour is actually being put into the air. Pump sprays are less harmful than atomizers or aerosols as they produce larger droplets rather than a fine mist. Keep the use of sprays to a minimum, but if they are used, good ventilation is essential.

Wearing a disposable dust mask will not protect anyone from vapors. Chemical molecules that are present in the air are much smaller than dust particles and the mask is not a barrier to them. There are vapour masks available, but these are much larger pieces of equipment and are costly to buy. They are also very off-putting to clients!

Safe, hygienic, and correct working procedures will avoid almost all vapors escaping into the air and, in a small to medium salon, this, together with adequate ventilation from an open window or door, should be sufficient to ensure safety.

VAPOURS AND EYES

Contact Lenses

Never wear contact lenses when working with nail products. It is possible that vapors can be absorbed by soft lenses and seriously affect the eye. Safety glasses worn with lenses will not protect your eyes from vapors when wearing contact lenses.

Safety Glasses

Wearing plain safety glasses is highly recommended. It is a practice with some technicians to nip off old overlay, a practice that is very strongly discouraged as it severely damages the nail plate; however, chips from this can fly and enter the eye. But eye accidents can also happen to the most careful technician, by clipping a plastic tip or nail, or opening a bottle of adhesive that has an air bubble in the
nozzle, for example. A busy technician spends many hours very close to a number of hazards and eyes are very precious!

KEEPING VAPORS TO A MINIMUM
There are a few simple rules that can be followed to keep vapors to a minimum:

- Keep all bottles and jars closed
- Keep any dishes covered
- Have a metal waste bin with a lid at every nail desk
- Put all nail wipes/cotton wool straight into the bin after use
- Change the paper towel under client's hands after each stage and put into the bin
- Wipe up spills immediately with absorbent paper and put paper in an outside waste bin
- When using a solvent to remove artificial nails, keep the bowl covered with a towel and remove directly after use
- Keep the use of sprays to a minimum
- Discard all unwanted solvents and nail monomers immediately by soaking in absorbent paper and placing in a covered waste bin; larger quantities should be placed in a safe place in the open and allowed to evaporate – do not pour down sinks or lavatories
- Store brushes in covered containers, not open on the desk
- Maintain adequate ventilation at all times, and make sure the salon is not too hot.

DUST

Dust is another major problem in the salon. Although the amount of dust can be minimized by correct working procedures, it is impossible to avoid the production of quantities of dust.

Dust falls into two categories: the dust you can see and the dust you cannot see. All dust is potentially harmful, but the dust you can see is slightly less harmful than the dust you cannot see. Larger dust particles will settle on surfaces and not float around in the air to be breathed in. The body has some very clever mechanisms to prevent unwanted 'foreign matter' entering it. Our respiratory system is designed
to take air in through the nose and out through the mouth. The nose has thousands of hairs inside it and is lined with a mucous membrane, which act together to trap particles that must not be breathed into the lungs.

This safety mechanism is very efficient in catching the dust particles that can be seen. It is not as efficient at catching the particles that cannot be seen, as they can be so small that they can be inhaled right into the lungs. There are more mucous membranes in the lungs that will catch a great deal of the inhaled dust, but it is an irritant and excess dust can cause respiratory problems.

Avoiding Excess Dust

Like any potential risk situation, it is far better to try to avoid it than correct or treat any problems that arise. There are a number of ways that excess dust can be avoided.

The ideal arrangement is to have a dust extractor fitted into the desk. These units, like extractor fans, create a light suction that draws the dust being generated from filing through a grille in the desktop and into a collection bag or unit, rather like a vacuum bag

The collected dust can then be regularly disposed of; an efficient unit can remove almost all the dust before it disperses in the air. The grille need only be exposed during the stages that generate dust; otherwise, it can be covered with a manicure mat and towels for the comfort of the client and hygiene of the salon.

If this type of extractor is not possible, the following suggestions should help to cut down on dust:

- Lay several sheets of disposable towels over a terry towel before each client arrives. After each stage of treatment that generates any dust, fold the top layer and discard. This ensures that dust is not left lying under your hands and being continually disturbed.
- Wipe the desk surface after each client with a damp cloth to collect any dust. This is also the ideal time to use a hard-surface disinfectant to dampen the cloth.
- Wipe all surfaces in the salon with a damp cloth every day. Dusting with a dry cloth will just 'rearrange' the dust.
- Keep air moving with adequate ventilation via windows and doors, which will help remove fine airborne dust.
- Brushing reusable files and buffers to remove dust will lengthen their life. Brush them under running water before disinfecting them.
- Buffers and files should not be used for more than one client without disinfecting. Put used files in a covered box until the cleaning process as they will 'shed' dust wherever they are put down.

Dust Masks

For those technicians who feel susceptible to dust, a *disposable mask* can be worn. They are comfortable to wear and should be changed every few days. It is unlikely that a client would need to wear a mask, as they are exposed to the dust for a much shorter length of time. A technician, however, is working in the same environment all day. A technician who wears a mask should explain this to all clients in case they feel at risk.

Ingestion

Obviously, technicians do not make a habit of eating or drinking any of their nail products! It is, however, exactly what does happen in a great number of salons by hundreds of technicians. Every time there is a coffee cup on the desk, every time a technician grabs a quick bite of their lunchtime sandwich, or the sandwich is left open in the salon, small amounts of dust and vapors are getting into the food and are being ingested.

It is unlikely that this will affect a client as they will drink a coffee or eat a sandwich in the salon so infrequently. A technician, however, could be doing this every day and several times a day. The levels will soon build up.



Absorption

Every time a chemical, even water, touches the skin or nails, some of it will be absorbed into the skin. The body is quite happy to have thousands of different chemicals enter the upper levels of the skin. Specific cells within the blood maintain total vigilance and investigate anything 'foreign'; most of these 'foreigners' are recognized as being friends and are left alone. However, there will also be many 'foreigners' that are not recognized as friends, and they will be removed and destroyed. These cells will recognize any non-friendly chemicals if they appear again and may just remove and destroy them without any fuss. However, if these foes continue to appear, the blood will develop a substance that will fight them, and this is when a reaction is noticed.

- The most obvious reaction is irritated skin in the area of absorption. If the irritant is not immediately removed, this can develop into a very painful skin condition that will take a very long time to clear up.
- Local irritation is not always the first sign of an allergic reaction. Puffy or itchy eyes could be a reaction to a product on the nails. Headaches, tiredness, mood swings, nosebleeds, dizziness, coughs, or a sore throat can also be signs of a reaction to chemicals via any of the routes of entry.
- If the irritating chemical is removed, the symptoms should also disappear. They will, however, reappear if the chemical is reintroduced, as once the body is sensitized it will always be sensitized to that substance. From the point of view of a technician, if this sort of sensitivity is created to a commonly used product it may be difficult to find an alternative. This could mean that the technician can no longer work, which is a very drastic result of what amounts to laziness or lack of understanding. For a client, it can be very distressing, and they may be lost as a client or, worse, take legal action against the salon or technician.

As these potential problems can all be avoided with a little extra care and a real understanding of the work, it is not worth taking any risks.

Hygiene

STERILIZATION, DISINFECTION AND SANITIZATION

Hygiene in the salon can be divided into three categories:

1 Sterilization : this process kills all living organisms and needs to be used on metal tools as they may have come into contact with body fluids.

2 Disinfection: this will kill some living organisms and inhibit the growth of others and must be used on hard surfaces and tools and equipment that do not come into contact with body fluids.

3 Sanitization: this will inhibit the growth of certain living organisms and must be used to clean hands and prepare nails for treatment. We will look at each of these in more detail.

STERILIZATION

There are only a few items used in the process of applying artificial nails that need to be treated with sterilization methods, but they do, however, need careful treatment. It is a legal requirement for salons to have suitable sterilization methods in place and local Environment Health Departments can have differing requirements. Before choosing a system for the salon it is worth checking the local requirements.

The reason for such stringent requirements is that the risk of the spread of disease must be minimized. Body fluids, such as blood and lymph, could carry viral infections such as hepatitis or HIV.

Tools to be sterilized the commonly used tools that will need to be sterilized are cuticle nippers, nail clippers and cuticle knives – that is, anything with a sharp edge or blade. These are easily sterilized.

Tools that are not so easily sterilized and can sometimes carry the same risk are files and buffers. Occasionally, a technician may break the skin with a file or buffer around the nail plate or sometimes clients have very delicate skin at the side of the nail or a hangnail so that rough handling breaks the skin. If this happens the only safe procedure is to discard any file and buffer that has been used. Wood, paper, and sponge cannot be satisfactorily sterilized.

Sterilization Methods

There are many sterilization methods available on the market. A very large salon may benefit from some of the larger and more costly equipment, such as an autoclave, that uses extreme heat to destroy bacteria. There are some systems that seal the tools into a bag that then goes into a unit to sterilize them. The tools are removed from the bag only when needed. As tools are sterile and germ-free until they come into contact with air, this method keeps them as hygienic as possible until required.

Another method that is probably more suitable for smaller salons is chemical sterilization, where the tools are immersed into a solution for a minimum period of time. Checking with the local environmental health department is recommended, as some brands are not recognized in certain areas. Care should be taken when using the chemicals as they are very powerful irritants and should never come into contact with skin. The directions should also be carefully followed as they usually need diluting with water and only specific dilutions are effective over certain time periods.

In preparation for sterilization, tools should be scrubbed with soapy water or a solvent to remove any grease or debris and then carefully dried with disposable towels. Ideally, all metal tools should be sterilized after every client; however, in the 'real' salon environment, this is rarely practiced. If there is any possibility at all of a break in the skin or contact with a skin or nail condition, the process must be rigorously followed. If the skin and nails are healthy, however, then metal tools can be wiped with a solvent to remove grease and debris and immersed in a disinfectant solution for the recommended time.

DISINFECTION

Work Surfaces

There are many areas that require regular disinfection. This process will destroy many bacteria, viruses and fungal spores and is essential for general salon hygiene. All hard surfaces should be cleaned on a regular basis with a disinfectant solution. For example, desks should be wiped over after every client, preferably with a weak disinfectant; they should have a thorough clean at the end of every day. Floors, light switches, sinks and basins should all be cleaned with disinfectant on a regular basis.

Towels

Terry towels used during treatments and those used to dry hands should be washed with the addition of a suitable disinfectant solution. Commercial disinfectants are often available at beauty wholesalers or cleaning-product wholesalers that are suitable for all these jobs. Some beauty and nail product companies also supply products designed for this use.

Tools

All tools need some form of disinfectant and there are branded products available for this, together with suitable equipment to carry out the process easily and efficiently.



All reusable tools must be disinfected after every use and, like the sterilization solutions, the manufacturer's instructions should be followed carefully. The only acceptable exceptions to this rule are the brushes used to apply acrylic overlays. Disinfecting these brushes would destroy them; they are used with solvents so are unlikely to be a health risk, and they do not touch any soft tissue (see separate instructions for cleaning). Files And Buffers

Files and buffers should either be disposable, personal to specific clients only, or be of a quality that can be submerged in water.

A recommendation for every nail desk would be to have a disinfectant solution in a suitable container where all metal tools are stored waiting to be used. When they are needed, they are removed and dried with a paper towel. After they have been used and if do not yet need sterilizing, they should be wiped with a solvent and returned to the disinfectant, care being taken not to remove them before the recommended time period (usually around 15 minutes).

Used files and buffers should be stored in a covered container until they can be cleaned of dust and then placed in the disinfecting solution. After the minimum time period, they can be removed, rinsed to remove the solution, and left on paper towels to dry.

Sanitization

This is a process that is essential for the cleansing of hands and the preparation of nails. Skin cannot be sterilized or disinfected as the chemicals that can do this are irritants and sometimes corrosive. Sanitization is the lowest level of decontamination, but it is necessary to avoid the spread of diseases and, in the case of nail preparation, is essential to maintain healthy nails.

Technicians

Technicians' hands should be washed before and after every treatment for the safety of themselves and their clients. It not only limits the spread of bacteria and viruses; it also removes traces of artificial nail products and dust.

Washing the hands in soap and water is not always enough. Ideally, an antibacterial soap should be used that contains moisturizers to prevent the skin becoming dry. Hands should be dried with paper towels, as terry towels can become an efficient breeding ground for bacteria and there is some proof that hot air dryers can also cause problems with bacteria.

Clients

Clients should also have clean hands, but nails are ten times more absorbent than skin. Once a client has washed their hands with soap and water it is possible that the nails have absorbed quantities of water and there could be soap traces left on the nail plate. If washing with water is preferred by the salon and client, ask the client to avoid the area of the nails.

There is an alternative that has many advantages over soap and water. There are many hand sanitizers available on the market that have the ability to cleanse skin more efficiently without the use of water or drying the skin. The advantages are that the technician and client can cleanse their hands at the desk so both can be confident that this procedure has been carried out; a good-quality product will be more efficient that an antibacterial soap and water: there is no water absorbed into the nails that may carry bacteria and will then be trapped there with the application of an overlay.



The sanitizer should be applied liberally to the hands then rubbed together and wiped dry with paper towels to remove any debris. The technician should make a point of washing their hands regularly with moisturizing soap and water to avoid a build-up of the sanitizing product.

Tools

TOOLS OF THE TRADE

THEIR CORRECT USE AND CLEANING

The following section lists and explains the correct use of the various tools used during nail treatments and the methods for keeping them hygienic.



Files And Buffers

There are many, many files, and buffers available. In some cases, their use is specific, and, in other cases, personal choice is relevant. In general, a file is used to shape natural and artificial nails, remove length from a natural or artificial nail and remove and shape product on an artificial overlay. A buffer, on the other hand is used to refine, smooth and polish natural and artificial nails. Files are usually long and flat with an abrasive on both sides and buffers are usually chunkier, cushioned and can be either long and thin or in a block form.

Before understanding the various uses of files and buffers, it is important to understand their abrasive qualities. An abrasive is able to grind down by rubbing and it is measured by the amount of grit, that makes the abrasive, on an area of 1 sq. inch. Therefore, low numbers describe an abrasive that has fewer, larger pieces of grit per sq. inch. This makes it harsher. The higher numbers have more, smaller pieces of grit, so the abrasive is finer.



The most common grit sizes used in the nail industry are:

- ***80 Grit: Very Coarse.*** Only used for hard, old fashioned powder/liquid overlays or those using MMA as the liquid. Unnecessarily harsh for any modern artificial product.
- ***100 Grit: Coarse.*** Can be used for removing old and bulky overlays.
- ***80 Grit: Medium.*** Can be used for shaping or removing overlays and length of artificial nails.
- ***240 Grit: Fine.*** This is the lowest grit that should be used on the natural nail, either the free edge or nail plate. Any lower number grit size will cause damage that is easily avoidable.
- ***360 Grit: Very Fine.***Used as a natural nail file for delicate nails but excellent as a general file for manicure treatments
- ***400-900 Grit.*** This is usually the grit used in block buffers that are designed to refine the shape and smooth the surface of artificial nails prior to shining. Can be used gently on a ridged big toenail before buffing.
- ***900-12000 Grit.*** Usually used on a three-way buffer where the roughest side is used first to smooth, then the next to refine and remove any scratches followed by the smooth side to bring surface to a high shine. Used on natural and artificial nails.

When carrying out manicures, it is unnecessary to have files harsher than a 240 grit. Pedicures may need a file of 180 grit, as the big toenail can be quite tough.

A good file to use for all artificial nails is a combination of 180/240. this means that when the natural nail is touched (free edge or nail plate during blending the tip or during maintenance) the finer side can be used. The slightly rougher side can be used for all artificial products, such as the tip and overlay.

When choosing a file there are several things to consider. Can it be washed? Can it be immersed in water? How long will it last? What is the price?



As with most tools, the longer lasting files are usually more expensive. It is worth having a basic understanding of the components of a file in order to help you decide which ones to use.

There are three parts to a file: the core, the backing, and the abrasive, all of which can be made from a number of different materials.

1 The Core

(a) Wood - the old traditional method of making a file. It is inexpensive but cannot even be washed. It is also very brittle and prone to breaking.

(b) Plastic - usually a polystyrene that is slightly flexible. This type of core reduces the vibration felt during filing. A good plastic core has a balance of rigidity and flexibility so pressure can be exerted without it snapping or bending.

(c) Foam - cushions the file and increases its efficiency. The foam could be an open celled foam that is soft but porous so cannot be put into water or a closed cell foam that is waterproof.

(d) Many files have a combination of a plastic core for strength covered by foam for efficiency.

2 The Backing
This is the material that the abrasive is put onto.

(a) Paper - has a short life and cannot be made wet.

(b) Waterproof paper - has an oil-based resin coating that lengthens its life and allows it to be immersed for short periods, but it will soon break down.

(c) Mylar – a trade name for a specific polyester material. It is washable, can be immersed and is durable.

(d) Cloth – usually cotton, this has a cost implication but is long lasting.

(e) Foam – quite expensive but durable and immersible. The abrasive is sprayed directly on to the foam.

3 The Abrasive
This comprises the particles that are glued to the backing.

a) Garnet – a common gemstone that is inexpensive and long lasting. The old, traditional files, still available today, are made from wood, paper and garnet but are very harsh and should not be used on a natural nail.

(b) Silicon carbide – the black grit file in common use today. It is a synthetic crystal composition. It is very hard and very jagged. It also has the characteristic of losing little bits that leave behind a fresh jagged edge. This is annoying for the user but does prolong its life and efficiency.

(c) Silicon carbide with zinc stearate coating – the coating acts as a lubricant to make filing smoother and quicker. It also prevents dust from building up between the particles and blunting the file.



(d) Aluminum oxide – this abrasive can be coloured. It is less jagged so therefore less harsh. The ability of a file to be immersed in water is not only dependent on the materials used in its construction, but also on the glue used to assemble it. Files are usually labelled as washable or submersible. Washable files cannot be submerged in water so cannot be disinfected; they can only be sanitized with an antiseptic spray. If there is no labelling, they cannot be washed.

Ideally, a file should be used on one customer only and then either thrown away (or kept for their exclusive use) or disinfected.

The cleaning method for files that can be immersed in water is:

- Using a stiff brush, clean away all dust from the file under running water. This will avoid the spread of dust.
- Rinse the file and place it in disinfectant for the manufacturer's recommended time.
- Remove the file, rinse, blot dry, and place between paper towels to dry thoroughly.
- When dry, keep in a closed container ready for use.
- A tip when using a new file is to remove the sharp edges with another file. It is very easy to cut the soft tissue around the nail with a brand-new file.

When using a file on a natural nail it is important to file in one direction only. When using a file on top of the nail during artificial nail treatments, the whole length of the file should be used without too much pressure. Although everyone has their own way of holding a file when more practiced, a good way to start, that will ensure efficient filing without causing too much damage to the nail plate, is the following:

- Place the end of the file between the forefinger and middle finger with most of the file pointing towards the thumb.
- Place the thumb near the other end of the file. By holding the file in this way, the whole length can be used during use, the wrist can be kept flexible so the curve of the nail can be followed, and it is difficult to exert too much pressure on the surface of the nail.

Cuticle Knife

For an experienced technician, a correctly used cuticle knife is the most efficient method of removing softened cuticle. There are many shapes and sizes available and personal preference plays a large part in choosing the right one. It is a metal tool and, as such, can be easily cleaned and sterilized. It is also capable of causing damage with incorrect use.

General guidelines:

- Cuticle should be softened before removal otherwise the nail plate can be damaged
- Whatever the shape of the tool, it should be used quite flat against the nail plate to avoid damaging the nail
- Cuticle cannot always be seen and can have grown quite far up the nail plate. With experience, cuticle can be distinguished from nail by the feel of the surface when using the cuticle knife
- Care must be taken not to mistake nail for cuticle. A sharp knife is quite capable of scraping off a layer of nail
- Force should never be used. If the cuticle does not come away easily it must be softened more or left until the next treatment when home care by the client has helped
- A cuticle knife is not to be used for pushing back the proximal nail fold. This can be gently lifted off the nail plate but not forced.

- After use, the knife should be wiped with a solvent or antiseptic solution using a disposable wipe to remove any debris and product, then immersed in a disinfecting solution for the appropriate length of time. If the tool is double ended, remember to turn it around to disinfect both ends.
- If the knife has been used near any broken skin, nail or skin disorders, the procedure for sterilization must be followed.

Cuticle Nippers

It is important, when buying nippers, that a good quality pair is chosen. It is worth paying a little extra to get better quality. The blades of nippers need to be very sharp as otherwise they can tear the skin. It is worth finding a supplier that has a sharpening service as a good pair of nippers will last a very long time and can be sharpened periodically as they become blunt. Nippers that have become blunt or where the ends of the blades have become bent must never be used.

Cuticle nippers are not to be used to cut away the lifted skin of the nail fold. They are for removing cuticle that has been lifted by a cuticle knife and is still attached to the nail plate. They are also used for removing hangnails.

The correct use is by closing the blades over the skin to be removed, squeezing, and releasing the blades. The tool should never pull the skin as this will tear it. A good, sharp pair of nippers will efficiently remove the unwanted skin without causing damage.

After use, the blades should be wiped with a solvent or antiseptic solution on a disposable wipe, then immersed in a disinfectant solution for the appropriate length of time. If they have been used near broken skin, nail or skin disorders, the procedure for sterilization must be followed.

Nail Clippers

Clippers, as opposed to scissors, are tools that have blades that meet together in a pincer movement. The blades are usually curved but the cutting edge is flat (see picture). They are used for removing the excess length of a nail, either a finger or toenail.

As with all blades, they must be very sharp, so the nail is efficiently and cleanly cut through. Blunt blades will cause trauma to the nail and cause splitting and splintering. This will lead to peeling.

When cutting a nail, several cuts must be made following the curve of the nail. The nail must never be cut in one movement. As the cutting edge is flat, the blade would flatten the nail and pressure would be put on the sides. This could not only cause some damage; it is also uncomfortable for the client.

Clipping nails leaves a rough edge. Always file the nail after cutting to smooth and seal the edge and therefore prevent peeling.



When cutting toenails, always use the larger, heavy-duty clippers as toenails can be very hard. Never make one cut on a nail for the reasons given above and also to prevent the nail flying up into your eyes.

Clippers can also be used to remove the length of a plastic tip once it has been applied to the nail. As with natural nail cutting, make several small cuts following the curve and never one big cut.

After use, follow the cleaning procedure for all metal tools.

Hoof Stick

These are usually made from plastic with a rubber end. They are not designed to remove cuticle but are used to make the skin of the nail fold neat following treatment. The rubber end is used to gently ease the skin into a neat oval at the base of the nail as it can be left untidy after the cuticle treatment.

The other end is often pointed and is for cleaning under the free edge. It can be used for this purpose, but disposable orange sticks are more hygienic. After use, wipe with solvent or antiseptic solution and immerse in a sterilizing solution.

Orange Sticks

These are inexpensive wooden sticks that can be used in a variety of ways. Some manicurists use them in place of a cuticle knife but, not being a blade, they are not very efficient for this use. They usually have an angled shape at one end and a point at the other. They also come in different lengths. The longer length is probably more useful to a technician, but the shorter ones can easily be used.

They have a number of uses and should be discarded after each use:

- Use the pointed end to clean under the free edge towards the end of any treatment. They can then be discarded to avoid any contamination
- The angled end can be used instead of a hoof stick to neaten the cuticle
- They can be used to clean up the skin if it is touched with polish. Use dry if the polish is still wet and dipped in remover if dry
- When practicing overlay applications, stick a plastic tip on the end with either Blu-Tack or adhesive, then hold the stick while applying the overlay to the tip
- Use in the same way when creating or practicing nail art designs
- When applying polish secures, dip the pointed end into water and pick up the polish secure. It can then be accurately placed on the nail. Alternatively, mold a small piece of Blu-Tack on the end to form a point. This will easily pick-up polish secures
- In an emergency, a stick can be used to apply adhesive to a tip. When the nozzle comes off with the lid or becomes too blocked to use and there is no other bottle to hand, dip the stick into the bottle and apply the adhesive onto the tip. Discard the stick safely.

Skin Abrasives (Foot Files, Pumice)

During a pedicure treatment, the hard skin is removed using an abrasive. Its method of use will depend on the type being used. Following the treatment, it needs to be dealt with in much the same way as files and buffers. It should be washed under running water using a stiff brush to dislodge any debris, then with soapy water in case there are any creams or oils remaining and then immersed in a sterilizing solution.

Scissors

There are many different types of scissors. They are not necessarily the best tool for cutting natural nails. The action of scissors can traumatize the nail plate and cause peeling unless they are very, very sharp, and large enough to cut through thick nails easily. However, the various types of scissors have many other uses.

- Cutting fabric: scissors with long thin blades are ideal for cutting the fabric used in some overlay systems. The fabric is very thin and delicate and needs very sharp blades. The long thin blades are also good if the fabric needs trimming after it has been applied to the nail.
- Pre-tailoring tips: very often the contact area of a tip needs removing or shortening before application and occasionally the sides of a tip need removing. A curved blade is useful for this.
- Nail art: there are many, many uses for small sharp scissors when creating images using various materials.

As the above uses of scissors do not bring them into contact with skin, they do not need sterilizing, but must be kept clean and free from any products. If they are used for cutting nails, the usual procedure for metal tools must be followed.

Tip Cutters

When applying artificial tips, it is very useful to have tools designed for specific jobs. Clippers can easily be used for cutting tips but a 'one cut' tip cutter is especially useful. They are designed like the clipper's vets use for claws and have a guillotine action. They efficiently cut the tip without putting any stress or pressure on the nail bed (see Chapter 8 on ways of cutting tips).

Wiping them with a solvent is sufficient cleaning. Occasionally the spring mechanism will need some oil to keep it working smoothly.

Brushes

There are several different types of brushes for the wide variety of nail treatments. This section will deal with them generally in specific groups, but there are many available on the market.

- Liquid and powder brushes. These are almost always made from natural hairs of varying quality. Personal preference and budget are the main factors when choosing a brush for this purpose. They do need careful treatment if they are to work efficiently and last a long time.

General guidelines for care include:

- Only use the liquid monomer on them. Do not clean them with anything else as some of the chemical you use will remain in the brush and contaminate your monomer.

- When using a new brush for the first time, the 'dressing' in the hairs must be thoroughly removed. Pour a little monomer into a clean dappen dish. Dislodge the dressing by rubbing the brush between your fingers then dip the brush into the monomer. Lift the brush out and wipe on a disposable towel. Do this several times until the brush is completely clean. Discard the remaining monomer and wipe out the dish. Shape the brush while wet into a point.

- Store brushes flat in a covered container. Do not store upright in a pot as monomer will run down the brush into the ferrule (metal collar) where it will stay until the brush is dipped in fresh monomer. The old monomer will then contaminate the dish and cause discoloration in the overlay.

- Never put the brush down during or after use without cleaning it on a disposable towel and shaping it to a point. If this is not done cured acrylic will stay in the brush and the brush will be clogged and unusable.

- Never shape the brush with your fingers as the monomer should not touch your skin.

- If the brush does get clogged with acrylic, soak it in a little monomer. The acrylic may soften enough to remove. Discard the monomer.

- The brush should never touch any skin and the monomer is strong enough to prevent any bacteria from growing on the hairs. No additional cleaning is required.

- Gel brush. These are usually, but not always, made from synthetic hairs. These must be cleaned after every use. Use a specific brush cleaner as recommended by the Gel manufacturer or use acetone on a disposable wipe. Wipe the brush thoroughly with the wet wipe and store in a covered container.

- Nail art brushes. There are many shapes and sizes of brushes used in nail art. All of them can be cleaned in water if water-based paints are being used or remover if oil based or varnish is being used. They should be stored in a covered container with their bristles protected from damage.

Dappen Dishes

There are several types of containers available for the liquid and powder system as small amounts of each need to be decanted for use with each treatment. They should all have lids fitted to prevent contamination and evaporation. Only the amount you expect to use for each treatment should be placed in the dishes as product must not be returned to the bottle of monomer or container of powder.



The monomer is contaminated with powder every time a brush is dipped into it, so larger quantities of monomer just get more contaminated as the day goes on. Keep the lids closed when not in use. When the treatment is completed, discard unused monomer into a disposable towel and put that into the covered waste bin. Throw any remaining powder into the bin. Then wipe out each dish with a clean disposable towel. Wash occasionally with soapy water, but make sure all the soap is rinsed away and the dishes are left to dry thoroughly overnight.

PRICING STRUCTURES IN THE SALON

One of the most difficult challenges when first starting out, either as a mobile technician, working freelance in a salon or opening a salon, is deciding a pricing structure. A good way to start is to research the local area to see what other salons are charging for specific services. Also look through the local paper, especially if you are planning to work as a mobile technician.

When you have a good idea on the level of prices in the area, you need to decide whether you want to be cheaper or more expensive than your competitors. There are benefits to both ways: lower prices may attract some of their clients who want to try a less expensive service, it may also attract new clients who call several salons to compare prices; higher prices may encourage potential clients to try your services in the belief that more expensive should mean better. Most technicians opt for the safer, cheaper route but, if you truly believe the service, you are offering is the best, then charge a little bit more and make local standards higher rather than lower.

After you have done your research and decided where you want to price yourself, you must do your sums to make sure you will be covering all your costs and make a profit. This is difficult when opening a salon, as definite costs are not known until it has been open for a few months. However, if you want to succeed in your new venture or career, planning is very important. It is not sufficient to base your prices entirely on someone else's. What makes a good enough profit for them may not work at all for you.

Most product suppliers will be able to give you a rough idea of the cost of products used in specific treatments, particularly if you are using a complete branded range. If you buy your supplies from a wholesaler, this information is not always available so you will have to work it out yourself by estimating how many treatments can be given using each item.

For example: A tub of hand cream @ £$10 will be sufficient for 20 manicures (or similar), therefore each manicure will cost 50p/c in hand cream.

Complete this exercise for each product you are going to use. Then make a list of all the products you use for each treatment, including all disposable items. This will give you a cost per treatment.

When you are still learning and need plenty of practice, it is a good idea to work out these costs to you and then offer to give treatments to all your friends and family. Ask them to pay for the products used, which will be a very small amount, and you will give your time for free. In this way everyone wins they receive a treatment that is enjoyable and, hopefully, has good results, you get some practice at estimating quantities of products used and giving treatments without it costing you in products.

There are many other costs or overheads you need to consider, and these will depend on how you are planning to work.

If you work as a mobile technician, then the cost of your car (petrol, tax, special insurance, servicing, wear, and tear), professional insurance, wear and tear on your equipment, promotional material, etc. must be covered by the income you make. These costs would be similar if you work freelance from a salon without the travelling costs, but with the additional costs of rent (or equivalent) paid to the salon., then the cost of your car (petrol, tax, special insurance, servicing, wear, and tear), professional insurance, wear and tear on your equipment, promotional material, etc. must be covered by the income you make. These costs would be similar if you work freelance from a salon without the travelling costs, but with the additional costs of rent (or equivalent) paid to the salon.

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To make sure you have everything covered, add up all your costs or overheads for a year, then divide this figure by 12 to bring the overall costs down to an amount for each month. Divide this figure by the number of days you intend to work each month. This will give you a figure that you need to earn each day before you make any profit. If this is added to the approximate cost of products you can expect to use in a day, you will have a good idea of the total overheads you will incur by working.

If you are opening a salon, seeking professional advice to create a proper business plan is really essential. The principles are the same as above, but many more things need to be considered. After you have carefully worked out your cost and pricing structure in this way, you will have a good idea of the cost of products plus the additional costs that need to be met and how they relate to your income from charges. It does seem an awful lot of work, but it will be worth it, as it will ensure that you will earn a living from the skills you have worked to acquire.

Summary

THIS MODULE HAS DEMONSTRATED HOW A SAFE AND COMFORTABLE ENVIRONMENT MAY BE CREATED AND MAINTAINED BY THE TECHNICIAN TO COMPLY WITH ALL LOCAL AND NATIONAL LEGISLATIVE PROVISIONS ON WORKPLACE HEALTH AND SAFETY IN SELF- OR SALON EMPLOYMENT. IT HAS PROVIDED THE NECESSARY INFORMATION ON THE USE OF TOOLS AND EQUIPMENT AND GUIDED A TECHNICIAN TOWARDS APPROPRIATE SERVICE PRICING STRUCTURES.

Assessment

ASSESSMENT OF KNOWLEDGE AND UNDERSTANDING

- Why is it important to have suitable desks and chairs for treatments?
- What are the main 'routes of entry' of a chemical into the body?
- How can potentially harmful chemicals be prevented from entering the body?
- What are the three levels of decontamination?
- Why is effective decontamination essential before, during and after each treatment?
- Give one example of the type of products that could be used for each of the levels of decontamination.
- How should solvents be disposed of?
- What is an allergic reaction?
- How are metal tools effectively cleaned?
- What are good working practices?
- What is the purpose of an Accident Book?
- What is the Health and Safety Policy that relates to you?

ACRYLIC NAILS



CLIENT INTAKE

FIRST NAME

LAST NAME

DATE OF BIRTH

GENDER

MALE ○ FEMALE ○ NONE ○

AGE

HEIGHT

CONTACT DETAILS

EMAIL ADDRESS

PHONE NUMBER

HOME ADDRESS

CITY, STATE

ZIP CODE

HOW MAY WE CONTACT YOU? PHONE ○ EMAIL ○ POST ○

EMERGENCY CONTACT NAME & PHONE

HOW DID YOU HEAR ABOUT US?

(If someone referred you, please name them so that we may thank them)

Friend Referral_____

Social Media

(Please indicate which version you used to find out about our services) Facebook Instagram Website Other (please specify below)

ACRYLIC NAILS



NAIL INFO

Date of your last professional manicure or pedicure:

How often do you get professional manicures and pedicures?

What hand, foot and nail products do you most frequently use?

How long does your nail or toe polish usually last?

How would you like to improve your hands, feet and nails?

What type of hobbies and activities do you do that directly affect your nails?

Please list any known allergies including food, medicines, scents, plants, etc.:

Are you diabetic? ○ Yes ○ No

Are you pregnant? ○ Yes ○ No

Have you ever had or do you now have a nail infection on any of your fingernails or toenails? If so, please explain:

For the questions below, please tick all the answers that apply:

Do your nails:

- ○ Split
- ○ Peel
- ○ Crack
- ○ Break

Are your cuticles:

- ○ Dry
- ○ Torn
- ○ Ragged
- ○ Inflamed/Red

Do you bite your nails? ○ Yes. ○ No

On your hands, do you have:

- ○ Open Wounds
- ○ Cuts
- ○ Sores
- ○ Bruises
- ○ Tenderness

Have you ever been diagnosed with any of the following:

- ○ AIDS
- ○ HIV
- ○ Hepatitis A or B

ACRYLIC NAILS

CONSENT

By signing below, you attest that you have provided accurate and current information on this form and answered all medical and health-related questions truthfully and completely. Your signature also certifies that you understand that _____the right to deny service to any client due to a health condition he or she has that may pose a potential risk to practitioners or other clients, including those that pose a risk of potential contamination to service areas. Furthermore, signing below verifies that you understand that you are responsible for informing_____and/or its nail, manicure and pedicure technicians of ANY and ALL changes to your health condition as regards any question on this form or any potential public health risk that may arise from any change in your health condition.

Client Name: _____Date_____

Nail Tech Signature _____Date _____

Consent to Treatment of Minor: By my signature below, I hereby authorize (YOUR NAME), to administer nail services to my child or dependent as they deem necessary.

Signature of Parent or Guardian _____Date_____



Chemistry

ESSENTIAL CHEMISTRY OF ARTIFICIAL NAILS

Every person who considers themselves to be a professional should strive to be a master of their craft. A nail technician should be skillful at applying nails to all types of nails; they should also be knowledgeable about the products and tools they use. This chapter provides the nail technician with a basic understanding of the chemicals, chemical processes and generic products that underpin all aspects of artificial nails.

In the nail industry, the information available about the products in use tends to be provided by manufacturers of brands and this information is usually tied up with marketing exercises. A technician needs to have a basic knowledge of the chemistry involved and then add specific product knowledge to this, almost as 'post-graduate' learning. You may use the same products every time but the client, their nails, the circumstances, and the environment will differ every time. By understanding how the chemistry of the products works and what can influence the chemical reactions and performance, the professional technician will be equipped to use all products to their best potential and solve any problems that may arise.

THE CHEMISTRY OF NAIL PRODUCTS

The chemistry of nail products for all brands is similar. In the same way as beauty therapists who learn how moisturizers work on the skin and how various electrical currents affect tissues, as hairdressers learn how perming solutions curl or straighten hair and hair colors work on the hair, nail technicians need to know how nail products work together and on the nail. Once this is understood, the specific product knowledge provided by manufacturers and distributors will enhance your skills and understanding and make you a better and more professional technician – especially if you have the essential attitude that a technician never stops learning.

When the word 'chemicals' is mentioned, many people immediately think of danger! This is not so. Everything in the world is made of chemicals, including us! The only exceptions are heat, light and electricity, which are energies that affect chemicals.

Atoms And Atomic Structures

The smallest state in which a chemical can recognizably exist is an atom. This is a microscopic piece of matter that is organized in a way that is specific to the simplest chemicals in existence, that is elements. Examples of elements are oxygen, carbon, hydrogen, calcium; there are over 100 different elements, each with its own kind of atom.

The atomic structure is specific to the different elements, but each atom can have a negative or positive charge.

As we all know from playing with magnets, a negative charge will attract a positive charge and vice versa. When a negative charge is joined to a positive charge a chemical bond is created. It is the joining together of these elements in various combinations and configurations that creates all the millions of chemicals that make our world.

Molecules

When an atom joins other atoms, it forms a molecule. An example of a molecule is H_2O . The letter H is the symbol for the element hydrogen, the letter O is the symbol for the element oxygen; H_2O means 2
atoms of hydrogen joined to 1 atom of oxygen – which makes 1 molecule of water. This specific molecule is the smallest form in which the chemical known as water can exist.

How many molecules there are in a space or how they are joined together determines the form that the water is taking:

- Lots of molecules tightly packed together will be water but in the form of ice
- Fewer molecules loosely packed together will be flowing water
- Very few molecules with only some packed together will be steam (or vapour gas)

Water has the chemical symbol of H_2O but, if only one more element is added, for example carbon, and the number of hydrogens, oxygen and carbon elements varied, the chemicals that are formed are vastly different from simple water: alcohols (such as the one found in alcoholic drinks: ethanol C_2H_5OH), fatty acids (such as acetic acid in vinegar: CH_3COOH) and even solvents (such as acetone, widely used in the nail industry).

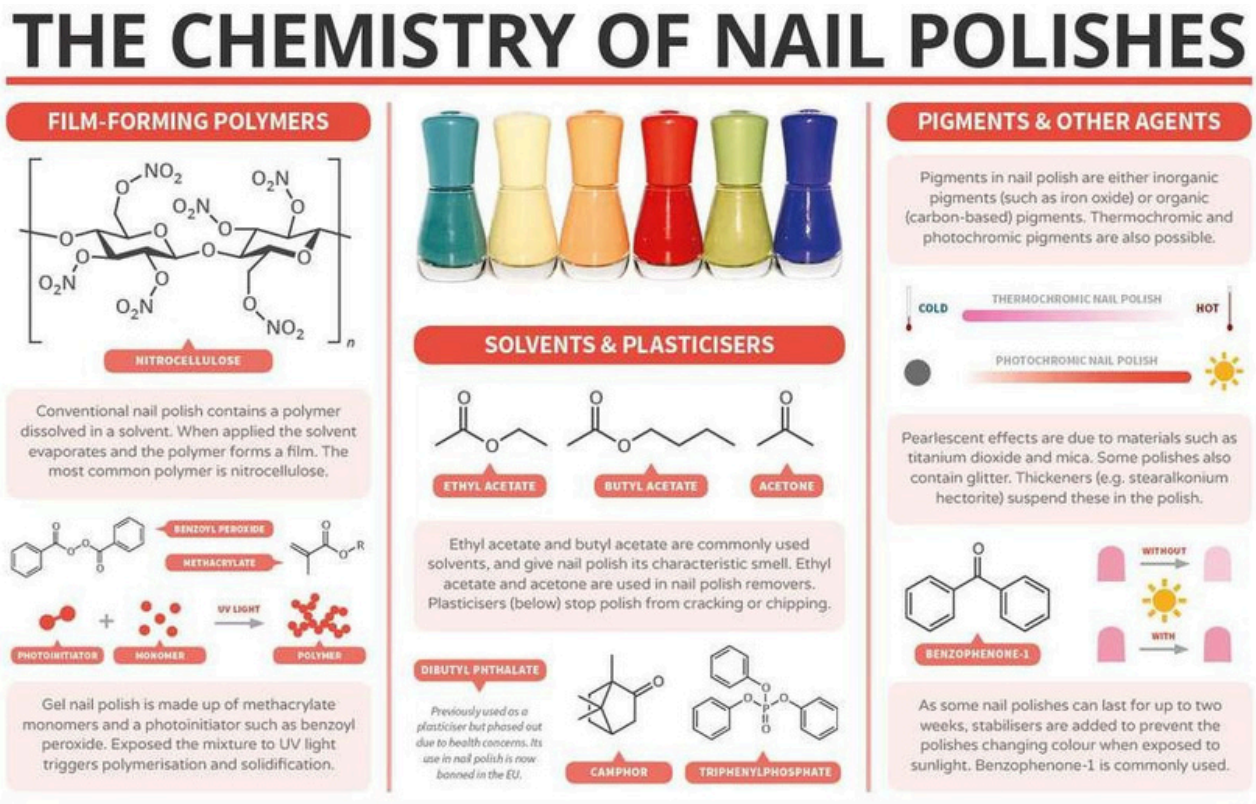
We are very familiar with each of these chemicals in their liquid form but should already be aware of possible dangers. Water is quite safe to drink, but too much of it in the wrong circumstances is dangerous; we can drown in it. The ethanol in our favourite alcoholic drink is good in small quantities, but a little too much has very unpleasant effects and considerably too many causes alcoholic poisoning and death. There is no one who would wish to consume too much vinegar and no one who would want acetone in their stomach, but we are quite happy to use it remove nail varnish. Chemicals used correctly and in suitable quantities are neither dangerous or harmful.

Vapours, Fumes and Odors

Molecules of chemicals can escape into the air and become vapors. Water does not smell but is present in the air all the time. Some chemicals can escape into the air much more easily than others. For example, water under normal conditions does not escape too readily, but if left long enough will evaporate. Other types of liquid chemicals, such as solvents, can escape very easily are known as ‘volatile’ and this property is useful for fast drying. Molecules of the actual chemical are in the air when this happens, but they cannot necessarily be detected by smell. These molecules are called vapors and the liquid is said to be vaporizing. Volatile liquids evaporate very easily so should be kept in containers that prevent this.

The smell of these liquids is often called fumes. This is very inaccurate. We refer to car exhaust fumes and this is accurate. Fumes are burned particles in smoke. What is often found in the context of nails is vapour – that is, the volatile chemicals escaping into the air.

Smell or odor is different again. We can detect some chemicals via our noses, others we cannot detect, but that does not mean they are not there. A strong smell of nail products suggests that the chemicals have escaped into the air as vapors and are now being breathed in.



Bonding

A basic understanding of how molecules bond together to create something different will be useful in understanding the chemistry of nail systems. It is also important to understand that some molecules will bond together naturally owing to their positive and negative attractions; others need help. The help required could come in the form of heat, light or another chemical to speed up the process. This process is a crucial part in the understanding of nail systems, as the methods used, and the speed of reaction affects the results and the application.

ACRYLICS, POLYMERIZATION AND MONOMERS



Almost every product used in the various nail systems belongs to a vast family of chemicals called ‘acrylics. An acrylic is a man-made type of plastic and those that are used in the nail industry use the same chemical process to form a solid from a liquid or from a semi-liquid: this process is called ‘polymerization’.
Polymerization is a process that joins single but complex molecules called monomers together to form a solid even more complex structure called a polymer. The term ‘monomer’ is made up of ‘mono’: single + ‘mer’: unit; ‘polymer’, similarly, is ‘poly’: many + ‘mer’: unit. If we think back to the water molecules discussed earlier, single molecules can flow around as a liquid; when their temperature is drastically lowered, they join together to form a solid that is ice. It is the lowering of the temperature that has made this happen. (This reaction is not strictly the same as polymerization but thinking of it in this way makes it easier to understand.)
Monomers are present in some form in all nail system products. As explained, the single units or molecules are monomers; there is also a slightly different arrangement where a few units are formed together. These are called ‘oligomers. As a general rule, monomers are the products that are liquid in form and oligomers are in a semi-liquid form, such as a gel or resin.
Thinking back to how proteins are formed, you may remember that amino acids join together in long chains and these chains are linked together by amino acid bonds. These too can be described as polymers as they are single units (the amino acids) joined together to form long chains. Nails are made up of keratin so therefore nails are also polymers.
The cells that are formed in the matrix on the nail unit have in the nucleus (or ‘brain’) of the cell the instructions to create the keratin. The nucleus initiates the process by collecting the relevant amino acids and causing them to link together in a specific format that will make the protein, keratin. This is a process of polymerization but notice that an instruction from the nucleus was needed to make it happen. To relate this to nail products is now a simple exercise. Monomers (or oligomers) are present in a nail product. When the polymerization process is initiated, the single units join together to create long chains with bonds linking them together and a solid is formed. This solid is what becomes the artificial nail. The precise way in which this happens is different for each of the systems.

CHEMISTRY OF THE ACRYLIC SYSTEM

This system is the most popular in the UK and the US, holding probably about 50 per cent of the nail market. It is also popular in Europe, but other systems hold the largest market share in some countries, such as Germany, where a UV gel system is favored. The acrylic system was the first to be used commercially, and came, as we saw in Chapter 1, directly from the dental industry. Even the colours that are used came from dentists, as they used pink for dental plates and various shades of white for dentures. (Pink and white is often used to create a natural-looking nail with a white free edge.)

The acrylic system is a two-component system using a liquid monomer and a powder. As already explained, the monomer (liquid) needs to polymerize and become a solid, and it needs an instruction to do this. If a liquid monomer is left exposed to light at room temperature, it would start to polymerize of its own accord, but this reaction would occur very slowly, and the resulting polymer would be very soft and jelly-like.

THE INITIATOR AND THE CATALYST

The instruction, or initiator, must come from somewhere. The solid that is to be formed must also be a strong solid rather than a soft jelly. This is where the powder comes in. The powder in an acrylic is, in fact, tiny polymer beads that have been manufactured to exact specifications. It is the powder that usually carries the initiator to start the polymerization process.

Two conditions are needed for the process to be successful for the nail industry. An initiator is needed to start the process off, and a catalyst is needed to determine the speed of the process. Two different chemicals, when they come together, create these two conditions. They start the process by giving the monomers a 'blast' of energy. This comes from the chemical reaction that occurs when the two come together – a release of energy that 'kicks' the monomers into linking together.

The two chemicals are both essential. The amount of each is also an important factor, and a balance that was created for a different application (such as making dentures) could produce problems. The blast of energy that is produced needs to be controlled, as too much would speed up the process too quickly, not enough would result in a very slow polymerization.

The Catalyst Processes

The most commonly used catalyst system (the two chemicals that start the process) are benzoyl peroxide in the powder and an " in the liquid. When these two react together they create the 'instruction' for the monomers to join together. A similar reaction is used in permanent or semi permanent hair dyes. Hydrogen peroxide and amines are used to create the necessary reaction to allow the pigments in the hair dye to enter the hair shaft. Every acrylic system needs an initiator and catalyst to create the acrylic polymer used for artificial nails.



The Polymer Beads

The polymer beads have several roles, including the delivery of the 'instruction' to polymerize. The polymer beads remain as beads during the process and after polymerization is complete. They stay in among the long polymer chains that are being formed and give support and strength to the final structure. The monomer alone would produce a soft and flexible structure but, with the polymer beads, the structure remains flexible but also has the strength of the supporting spheres.

The Liquid and The Powder

The amount of the liquid and powder that is mixed together, that is the 'ratio', is important to the finished solid. Too much powder can make a very hard solid that may be brittle. Too much liquid can result in a soft and weak solid. The correct ratio plays an important role in the performance of the system and needs practice, together with some guidance from the manufacturer.

Another role of the powder is to carry colored pigment.

Technicians and their clients like to have the choice of a natural nail or a permanent 'French manicure' (with a very white free edge that is often created by nail varnish).

This can be achieved on artificial nails by using a pink powder over the nail bed and a white powder on the tip. There are also some powders that provide a peach tone for sallow and dark skins. It is possible to use powders that have strong colour pigments and are designed to take the place of coloured varnish. (If these are used, the whole overlay should be removed every few weeks to make sure that there is no problem with the natural nail, as this will not be seen through the opaque overlay.)



Methacrylate's – EMA And MMA

The chemicals used in this system commonly belong to the methacrylate family. The two most common are ethyl methacrylate (or EMA) and methyl methacrylate (or MMA). Both of these were used at one time as monomers, as they were in the dental industry. However, it was discovered that MMA caused a great many allergic The most commonly used catalyst system (the two chemicals that start the process) are benzoyl peroxide in the powder and an " in the liquid. When these two react together they create the 'instruction' for the monomers to join together. A similar reaction is used in permanent or semi-permanent hair dyes. Hydrogen peroxide and amines are used to create the necessary reaction to allow the pigments in the hair dye to enter the hair shaft. Every acrylic system needs an initiator and catalyst to create the acrylic polymer used for artificial nails.



Timings Are Infinitely Variable

- The first stage is when the monomer meets the powder and the additives to the powder, or beads, are released, which can be called ‘swelling’. This is when the reaction really gets going and it happens quite quickly. It can be seen as the product starts to melt.

- The next stage is when the polymerization starts, and the mixture stops melting. It begins to have more of a gel consistency. At this gel stage, the product can be moved around the nail. The length of this stage varies for different brands.

- The next stage is when the product leaves the ‘gel’ stage and goes into the beginning of the final ‘cure’ or setting stage. The product cannot be moved around easily now without leaving dips or bumps. Once this stage has been reached, the final cure will not be far away. This whole process can take anything from 3 minutes to over 10 minutes and finishes when the product is hard enough to file (or produces a clicking noise when tapped with a brush handle). However, do not be fooled! The overlay may be hard enough to file but the polymerization process will continue within it for many hours. Harsh abrasives or hard knocks to the overlay can interfere with this process and create weak areas in the artificial nail.



Please open the window
when using liquid monomer.

TEMPERATURE AND POLYMERISATION

There are external factors that can influence the process, the most obvious of which is temperature. Higher temperatures will speed up the process.

Fast polymerization can create a heat sensation on the nail. The process itself produces a small amount of heat as it is an 'exothermic' reaction (one that gives off heat), but this is too small to be felt by a healthy nail plate under normal circumstances. Fast polymerization can also create a brittle overlay with weak areas. Normal room temperature is ideal, and this is one reason why technicians are not advised to work under desk lamps that get hot.

A low temperature will slow down polymerization. The result of this can be seen when the liquid monomer is cold, or the client's hands are cold. When the overlay is applied, crystals or frosting can be seen in the area near the cuticle. This occurs because the process is slow to start, and the volatile monomer evaporates leaving some of the powder on the nail. Using the monomer at room temperature and keeping your client's hands warm can prevent this.

When the chemical engineering is unbalanced: The acrylic nail system, as can be seen, is a delicately balanced piece of chemical engineering. Several things can affect this balance. The addition of extra chemicals, for example, can have disastrous results – the most common chemical is brush cleaner, which can contaminate the mix.

The traditional acrylic system (with benzoyl peroxide as a catalyst system) is prone to discoloration, or yellowing, caused by ultraviolet light from either the sun or sunbeds. Some brands of the system have an additive (called a UV absorber) that prevents this type of discoloration by working in a way that is similar to sunscreens for the skin. Some have a blue or violet colour added to the liquid. This is present as an optical brightener, to make the white look whiter and the pink look pinker, but it will also cover any slight yellowing.

Some brands of the system require the application of a UV block, in the form of a varnish, over the finished nail. The block needs to be reapplied regularly. Acrylic systems that do not use benzoyl peroxide do not suffer from this problem of discoloration. However, all brands are prone to discoloration owing to contamination.

The chemical balance in this system is crucial to its performance. You are strongly advised not to mix brands – that is, a liquid monomer of one type with a powder from another. The catalyst system may not be compatible and other additives may not work together. Always use products that are designed to be used together.

OTHER CHEMICAL REACTIONS IN NAIL SYSTEMS



TIP ADHESIVES

The chemical reaction that takes place within tip adhesives is closely associated with the fiberglass system as it involves cyanoacrylates. Tip adhesives are almost always an ethyl cyanoacrylate that is sensitive to moisture and the cure of which is inhibited by oxygen. The viscosities can vary from a water-like liquid to a thick gel. As a general rule, the thicker the adhesive, the slower the cure and variations will
apply to personal preference and to the job in hand.

- Tip adhesives, as the name implies, are used to stick a plastic tip to the natural nail. As the adhesive is sandwiched between the tip and the nail, the oxygen is expelled (therefore no inhibition to the cure) and there is sufficient moisture in the nail to encourage polymerization. Thin adhesives cure very quickly, in a couple of seconds, the thicker ones take a little longer.

- Personal preference relates to how quickly the technician wants the tip to stick firmly. Beginners tend to prefer to have a bit longer to position the tip before it is too late, experienced technicians like to work as fast as possible. However, speed is not always the main consideration. A thin adhesive can produce only a thin layer of adhesive between the tip and the nail, which is fine if the tip fits the nail exactly and the nail plate does not have any irregularities. If this is not the case, air pockets are created that not only look bad but can also create problems later. A thicker adhesive can form a thicker layer and fill up any irregularities. The gel-like adhesives are an invaluable help when dealing with a severe nail-biter or a nail shape that tilts upwards, as the surfaces can be safely filled with adhesive).

- Cyanoacrylate adhesives can, over time, break down in water, so, in the artificial nail you should not put too much confidence in the strength of the bond between the tip and the nail. The strength needs to be between the overlay and the nail.

PRIMERS

Function Of a Primer

There are some brands that do not require any help for the overlay to bond to the natural nail; they may just need a very clean, oil-free surface that has had the shine removed.



Some systems have a built-in method of bonding a man-made plastic to a natural surface of keratin. The majority need some help to create this bond and the product is generally known as a 'primer'.

Primers are seen in many areas: metal, wood and ceramic tiles all need a primer before they can be painted; natural nails should have a base coat before varnishing; even teeth need a primer before a veneer can be applied. A primer is necessary in these cases as whatever is being applied to the surface must bond with it, otherwise it will peel or fall off. A primer prepares the surface to accept a substance that does not naturally bond with it. Shiny surfaces do not bond together, and a roughened surface will accept another substance more readily. Nails, when shiny, almost have a seal on the surface that prevents too much penetration by substances. When the shine is removed, the surface bonds more readily with adhesive or overlays and allows a small amount to penetrate and create a stronger bond.



Methacrylic acid

Some nail systems require extra help in the form of a separate primer. The most common primer in use is a chemical called methacrylic acid. As can be seen from the name, this chemical belongs to the acrylic family and therefore will have an affinity to the overlay. The acid part of it, although mild, will gently etch the surface of the nail and encourage it to accept the overlay. It forms both a chemical and a mechanical bond by holding the overlay onto the nail plate.

Methacrylic acid is a strong irritant and is corrosive. Care must be taken when using it not to allow it to touch any soft tissue. Bottles must be kept with the lid on, and spillages dealt with carefully.



Acid-free primers

There are other primers available, which are generally called 'acid-free'. They will work in such a way as to hold on to both the natural nail and the overlay. They 'interface', or soak into, the nail plate and, as a type of monomer, will polymerize with the overlay to create a complete structure.

The best primer to use is the one that is recommended by the manufacturer of your system, as they will have developed the primer to give the best results with its own system. As with all nail systems, information on how to use products efficiently and safely must come from the manufacturer. A technician should spend some time learning, in depth, all there is to know about the products and a reputable company will provide this information. There may also be some application techniques that are best to use with specific brands and that make an application quicker or more effective. Do not consider that such training is a waste of time or money – it is the complete opposite, every product that is on the market will work properly in the right hands; in the wrong hands, where there is insufficient knowledge, most products will not work.

ARTIFICIAL NAIL REMOVAL

TIP ADHESIVES

A final explanation of the chemistry of artificial nails is their removal. The most commonly used method of removal is to soak the nails in acetone or some other solvent. The solvent does not dissolve the overlay but breaks down the bonds between polymer chains. The stronger the bonds, the more difficult it is to break them down.

Using a solvent in the various systems, the cyanoacrylate resin in the fiberglass system has the weakest bonds as there are no cross-links in the structure. UV gel is usually the most difficult to remove, as the bonds are exceptionally strong. There are many gels that cannot be removed with solvents and the only way is to buff them off.

When the nails are soaked in the solvent, the bonds break down and the structure becomes soft. While in the solvent, the overlay can be scraped off quite easily. If the nails are removed from the solvent before this is done, the softened acrylic immediately becomes hard again.

In order to imagine what happens to the acrylic in the solvent, imagine putting paper in water (those with children may have had to fish out a roll of toilet paper from the lavatory in the past!). The paper becomes very soft and liable to break up, it is still, however, paper and does not dissolve in the water. When the paper is removed from the water and dries out, it may feel a little harder and the separate sheets may have molded together, but it is still paper. This is very similar to the effect that acetone has on acrylic.

The Use of Acetone

There have been some worries about using acetone to remove acrylic nails. All solvents are classed as hazardous chemicals and all chemicals, even water, are hazardous if care is not taken in their use and storage. Over-use of any hazardous chemical is a danger, but sensible use should not be a problem. Continually soaking skin in acetone, or any other solvent, could cause health problems, but there should be no need to continually remove artificial nails. Usually, the only reasons to remove artificial nails are if a problem with the natural nail or skin is suspected or if clients decided that they no longer want or need them. Correctly maintained artificial nails do not need to be removed. Occasional removal by soaking in acetone or similar solvent is not a problem, as long as the correct procedures are followed, and the used solvents are disposed of carefully.

Summary

THIS MODULE HAS EXPLORED THE CHEMICAL REACTIONS THAT UNDERPIN THE THREE MAIN ‘SYSTEMS’ – ACRYLIC, UV GEL AND FIBERGLASS – USED IN ARTIFICIAL NAIL TECHNOLOGY AND WHAT THE CHOICE OF SYSTEM ENTAILS FOR BOTH THE TECHNICIAN AND THE CLIENT.

Assessment

ASSESSMENT OF KNOWLEDGE AND UNDERSTANDING

- What are the three main artificial nail systems available?
- Explain: (a) vapors, (b) fumes, (c) odours.
- Ventilation is essential for the safe removal of (a), (b) or (c) in Question 2?
- What is the name of the chemical process that changes an artificial nail overlay into a solid?
- How can room temperature affect artificial nail products?
- What is the purpose of an initiator in any artificial nail system?
- What are the initiators in each of the three main systems?
- Name some problems that could occur as a result of contamination of artificial nail products.
- What is polymerization?
- What is the sticky layer on a cured UV gel and why should it be removed?

Nail Tips

APPLYING TIPS TO THE NAILS

There are two methods of lengthening nails: one is by applying a plastic tip to provide the length and then an overlay over the top; the other is by 'sculpting' the overlay onto the nail to provide the length. This chapter deals with the application of plastic tips and is relevant to all the different nail systems, as it forms the basis of this method of applying artificial nails.

PREPARING THE NATURAL NAIL

Before any artificial product is applied to nails, they must be carefully prepared. If steps in this stage are missed or done inefficiently a problem with the artificial nail will result, for example lifting of the overlay. This procedure must be carried out before any artificial product is applied and precedes tip application.



Sanitise hands



Wipe nail from the edge to the cuticle

Step 1: Sanitize the nail plate

The nail plate must be perfectly clean before any work is carried out. There are many specific products available for this purpose and every system brand usually has one. In effect, the nail plate is cleaned of surface debris and oils using a solvent. It is possible to use a varnish remover as long as it does not have conditioners, as these can remain on the nail plate.

A cotton wool disc or a disposable nail wipe is used, and the nail should be wiped from the edge to the cuticle. In this way oils from the skin will not be drawn onto the nail plate.

Step 2: Removing the cuticle

The true cuticle is a thin, clear layer of skin that is attached to the nail plate. It grows continually and there is always some to be removed. It is possible, if a client has not had a manicure or any nail treatment for some time, that the cuticle could be covering the lower part of the nail. As it is so thin and transparent it is difficult to see. Removal of this is essential as any overlay products will not bond to this skin, they will bond only to a clean nail plate. A little area of missed cuticle will cause lifting of the overlay that, in turn, can result in other problems. The nail fold at the base of the nail must never be pushed or forced, especially when it is not softened. Applying products to soften the nail fold at this stage is not recommended, as they will be difficult to remove and may be absorbed by the nail plate. If the nail fold is unsightly, the technician should recommend that the client has a few manicures first to minimize the skin.

Before applying artificial nails, the most efficient method of removing the cuticle is with a clean cuticle knife. Some can have a very sharp blade, but every metal tool needs to be used carefully as they can cause severe damage to the nail plate.



Remove cuticle

This stage must never be missed and the whole nail must be checked for cuticle. With practice, it is often easier to feel the cuticle rather than see it. With so many different cuticle tools available, it is advisable to get advice from the distributor on their correct use.
As a general guide, hold the cuticle knife reasonably flat on the nail plate and, starting around the centre of the nail, gently scrape down towards the nail fold.

Any cuticle on the nail plate will be easily removed if the knife is held at the correct angle and the nail will not be affected. If the knife is held upright, it is possible to dig into the nail. Once the whole nail has been checked for cuticle, special attention needs to be paid to the sides of the nail. The skin can be pulled back by a finger and thumb and the cuticle knife can check for cuticle down the side walls. The nail fold at the base of the nail should be gently lifted, never forced. An efficient cuticle knife in the correct hands should accomplish this without any problems. The knife should then be used to clean away any debris from around the edges and nail fold.

Some technicians like to use a cuticle softener at this stage. However, remember how porous the nail plate is and unless the product is removed thoroughly, including under the lifted skin of the nail fold, there could be a problem with lifting later.

An orange wooden stick is not suitable for removing the cuticle. It is good for gently lifting and shaping the nail fold during a manicure but is not able to remove cuticle as efficiently as a good cuticle knife.

Step 3: Removing the Shine

A nail plate is naturally smooth and fairly shiny. This helps it to resist moisture absorption. Two shiny surfaces do not bond together well with an adhesive as there is not enough 'grip'. (This could be likened to a shiny leather sole on a new shoe and a smooth pavement. There is no grip, but if the sole is scored to make it rough, it will grip much better.) The adhesive or overlay has more surface to hold onto if the shine of the nail has been removed.



Remove shine



Shape free edge to fit stop point on tip

The nail plate, like the skin all over the body, has bacteria living on the surface.

Some of these bacteria are harmless and sometimes useful. Other bacteria may not be so friendly so, when applying artificial nails, it is safer to try to remove all the bacteria. Using a gentle abrasive to remove the shine on the nail will also help to remove some of these unwanted 'visitors.

The natural nail should never have an abrasive used on it that has less than a grit of 240 as it would cause too much damage. The end of a file of 240 grit or less is ideal to remove the shine. The end shape can get very close to the nail fold without causing damage to the soft tissue, and the sides of the file are perfect for getting down inside the side wall and ensuring there is no area of nail missed. The file should be used in the direction of nail growth, that is from the cuticle area towards the free edge. Keeping to this one direction only will minimize any trauma to the nail plate and help to avoid any more of the surface being removed than is necessary. It is literally only the shine that needs to be removed and not a layer of nail or any amount of nail that will make the nail plate thinner.

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When the entire surface of the nail has been gently filed the free edge, if there is any present, can be tidied up and shaped to fit in to the tip. At this stage the nail plate should look dull all over.

Step 4: Dehydrating the Nail Plate

It is essential that the nail plate does not have any trace of oil or moisture on the surface immediately before application of the overlay. Oil or moisture could be carrying bacteria or fungal spores that could cause problems, and any overlay or adhesive will not bond to the nail if there is any oil or moisture present. Obviously, the nail bed is excreting natural oils and moisture that keep the nail healthy and flexible and this will continue. This moisture will not affect the overlay once it is bonded to the nail, but the bond must occur while the nail plate is moisture-free.

As the nail plate has a surface that is slightly more porous than usual, owing to the removal of the shine, any dehydrator used on it will penetrate the upper layer very slightly and remove excess moisture that is present. Dehydrators used on the nail plate not only remove excess moisture, but they also act as sanitizers. Most bacteria and fungi require moisture to live, and by removing this essential moisture any organisms that are present will not be able to survive. The mild products used for this purpose will not necessarily kill the organisms, as the products must be mild enough to be used on the skin, but they will stop or inhibit their growth.

As before, the product designed for this job (or acetone) should be applied following the manufacturer's instructions. Alternatively, the dehydrator can be wiped over the nail on a cotton wool disc or nail wipe towards the finger. This will remove the dust that has been generated by filing.

The nail is now perfectly clean and prepared and ready for the application of artificial products. It is at this stage that the client must be prevented from using the prepared hand and the best way to avoid this happening is to ask the client to keep their hand flat on the towel. It is so easy for the client to touch their face or head then all the preparation work has been lost as oil, moisture or make-up could have been transferred to the nail plate.



Dehydrate nail plate

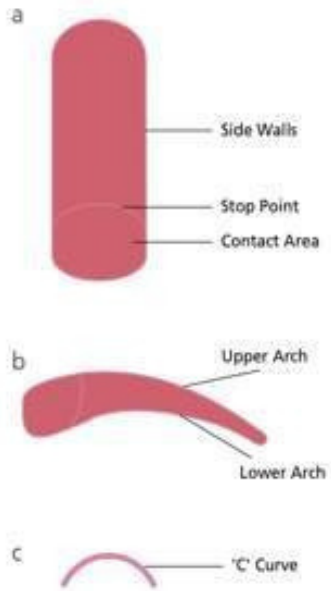


Nail with area of tip highlighted to demonstrate reinforcement of vulnerable area

If the nail system being used does not involve a UV lamp for curing, it is best for each hand to be prepared and all artificial nails applied before the next hand is started. In this way, the client has one hand free and there is no chance of contaminating the prepared nails.

Adhesives

Tips are applied to the nail with an adhesive (glue is an incorrect term as this describes a product made from natural materials). The adhesives used in the nail industry are cyanoacrylates, specifically ethyl cyanoacrylates. It is widely used in artificial nails, as it is used for applying tips and is also the basis of the resin in the fiber system.



Features of tip (a) the front (b) the side (c) the end

Adhesive is manufactured in several viscosities (thicknesses) and speeds of cure. It also has several grades. The highest grade is used in surgical procedures. That used for nails should be high grade, while its viscosity and speed are another area for personal preference.

As a general rule, thin adhesives cure very quickly and thicker versions more slowly. For the purposes of tip application, a thin adhesive will bond quickly but is prone to air bubbles and will not fill up any irregularities in the nail surface; a thick adhesive will take longer to bond and will cushion the nail and fill irregularities (this type is ideal for a bad nail biter).

Adhesives are broken down with solvents, the most efficient being acetone. If any skin in bonded together during its use, cotton wool on an orange stick soaked in acetone will quickly solve the problem.

Applying A Plastic Tip

Plastic tips come in many shapes and sizes, colours and lengths. Some of them are amazing to behold and all of them, to the beginner, look impossible!

Applying the tip is a skill in its own right and one that is often hurried during training in an effort to get on with overlay application. The application of the tip must be perfect and, on completing this stage, the nails must look like they actually grew on the finger and are not a piece of plastic stuck to the end. If the tips are not a perfect fit, they cannot be corrected by the overlay.

The shape of the overlay has its own rules and requirements and must not be concerned with correcting a badly applied tip.

The tip plays only a small part in the strength of the finished nail. The most important area of strength is provided by the overlay. The tip alone is only as strong as the bond between it and the natural nail, and this is not a good bond. If the real strength is not provided by the overlay, the tip will snap off. A well-applied tip does provide some strength in one area and that is the side wall near to the free edge. This area of nail, either real or artificial is very vulnerable, and is the most usual place for a nail to break. A tip will add some strength here.

ABS Plastic or Acetate Tips

A good-quality tip is made from 'virgin' ABS plastic. ABS is a plastic within the acrylic family; it is relatively strong. Most tips today are made from ABS plastic, but occasionally a tip may be made from another type of plastic called acetate. These tips have a translucent quality and are usually more transparent than traditional tips. They tend to be cheaper and were originally made for the false nails that were sold for retail use to be stuck over the whole nail. These are not suitable for artificial nail systems as they are difficult to blend into the natural nail and have a higher oil content that may affect the overlay.

Making The Tip

Tips are manufactured by pouring liquid ABS plastic into a mold that is shaped rather like a tree with a central 'stalk' and the tips coming out of the side like branches. The little rough bits on the end of tips show where they were removed from the main 'stalk'. The 'stalks' that are left after the tips have been removed are sometimes melted down by manufacturers and reused to make more tips (rather like remold tyres). This obviously helps manufacturers to keep costs down but, like some remolded tires, the tips can have weak spots. 'Virgin' plastic is a plastic that has been freshly made and not mixed with the melted 'stalks'.

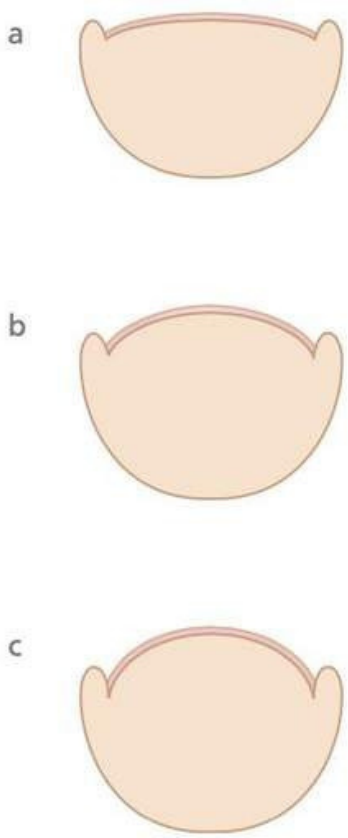
Important Features

Every tip, whatever its shape or size, has a number of features that are relevant to the technician:

1 Contact area or well. This is a thinner area and the part that is in contact with the natural nail.

2 Stop point. This is the demarcation point of the contact area and the actual tip. The natural nail free edge should fit snugly into this without any gaps to trap dirt and it will protect the edge of the nail and help it from absorbing too much water. When the tip is properly blended, this line will produce a natural-looking smile line.

3 Side walls. Tips either have parallel or tapered side walls to suit the natural shape. A well-constructed tip will have a reinforced side to the contact area in order to provide maximum strength in this vulnerable area.

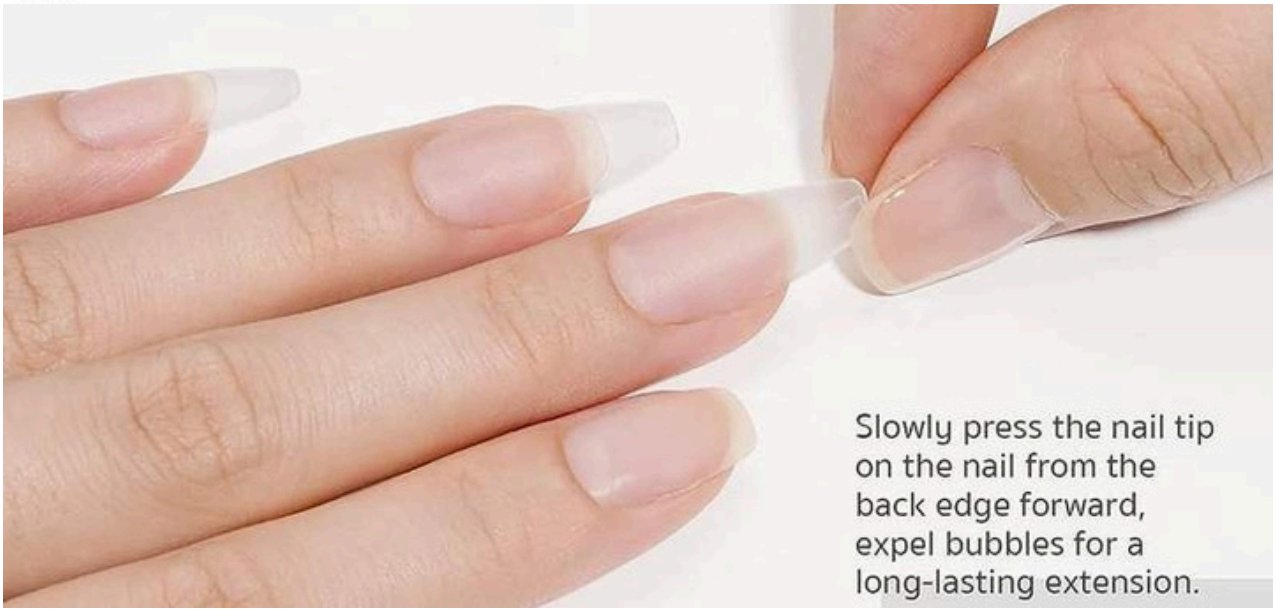


'C' curve of a nail looking from the nail down the length of the finger (a) flat 'C' curve (b) natural 'C' curve (c) deep 'C' curve

4 Upper arches. Like natural nails, tips have differently curved upper arches from flat to very curved. Choose the one that fits the natural nail shape or, if the natural upper arch is flat, it will need some correcting and a tip with a curved upper arch will help. If the nail has a high arch, a curved tip will exaggerate this even more so a flatter tip will help compensate.

5 Lower arches. Like nails that have grown naturally, a tip needs to have a lower arch. This is not so obvious if the shape of the finished nail is going to be oval, but the lower arch is still there and is what makes the tip look as if it has grown from the finger and not been stuck on top.

6 'C' curve. As with the upper arch, this can vary between types of tips, and the shape of the natural nail should dictate which is most suitable. Unlike the upper arch, it is not advisable to choose a shape that is different from the natural 'C' curve. The tip needs to sit on the nail comfortably without distorting the shape of the tip. If the natural nail is quite flat and a tip is applied that has a deeper curve, the tip will need to be flattened to adhere across the width of the nail.



Once applied, the tip will try to return to its shape, and this will put undue stress on the nail bed. When this happens, clients will feel a great deal of discomfort, as the nail bed will throb as if it is bruised. It is even possible that, if the nail plate is very thin, nail separation could occur. If the natural nail has a deep curve and a tip is applied that is flatter, the only way to stick it to the nail is to hold the sides of the tip onto the nail and make it follow the natural curve. Again, after application the tip will try to return to its original shape that may not necessarily cause discomfort but may result in lifting down the side walls.

CHOOSING THE CORRECT TIP

SOME GUIDELINES

- The first thing to look for when choosing the correct tip is the 'C' curve of the natural nail. Match the shape of the natural nail.

- The next area to consider is the natural upper arch. Again, match the natural shape, or choose a tip to correct an over- or under- exaggerated arch.

The above guidelines will help save some time in trying several tips. However, the best way to choose a tip is to try it on the nail. If it follows the curves, it is the right one. It is worth a technician having at least two different types of tips available, and more if finances allow.

Once the correct tip has been chosen, the right size or width must come next. Most tips come in ten different sizes with 1 being the biggest and 10 the smallest. Sizes 4 - 6 are the most commonly used.

When choosing the correct size, the width of the contact area must be ignored as it is the width at the stop point that is important. This must be exactly the same width as the nail at the smile line (or onychodermal band) without any gaps when the skin is pulled back from the sides. It is a very
common mistake to fit a tip that is too narrow. It cannot always be seen on a new set but, when the nail grows, there will be a step at the side with some natural nail exposed. Some clients have puffy or thick skin at the sides of their nails and unless this is firmly pulled back, the full width of the nail will not be seen.

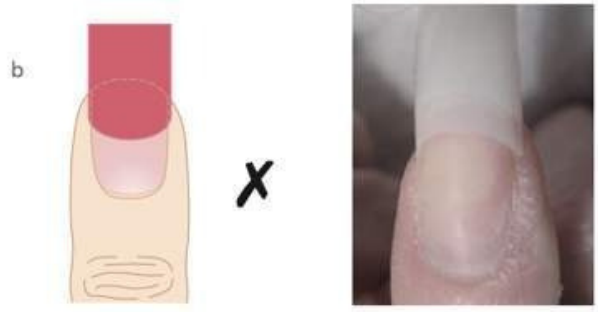
Size and width



Placing the tip (a) tip too small for nail

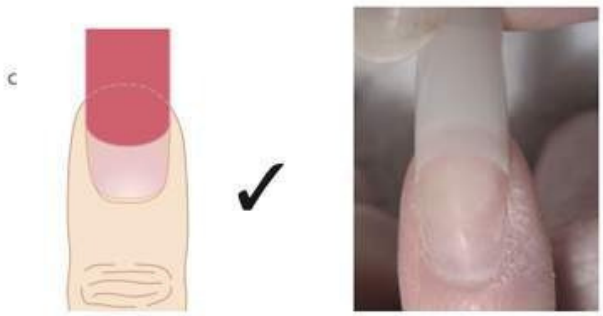
Tip too narrow for nail plate

If one size is too wide and the next is too narrow, choose the wider one and file away a very small amount from either side until it fits perfectly. If there is any doubt as to the correct size, one side of the tip can be 'tucked down' into one side wall and the other side looked at. Very often this will show that a tip that looked right is actually too narrow.



(b) tip too wide for nail

Tip too wide for nail plate



(c) tip of correct size

Tip width perfect fit

FULL CONTACT AREA VS REDUCED CONTACT AREA

Most tips have a full contact area. These can be applied directly to the nail plate with adhesive or they can be tailored beforehand. There are eight main reasons why it is worth removing most of the contact area before application:

1 When applying a tip with a full contact area it is easy to get bubbles under the tip. If this happens, the tip must be removed. The bubbles are unsightly and are areas where bacteria or fungus could grow.

2 The bond between the nail and the tip relies on the adhesive used. This will be a cyanoacrylate, and this can eventually break down in water. If the bond covers most of the nail (1) there is a larger area to be broken down.

3 The strongest bond in the artificial nail structure is between the nail and the overlay. If most of the nail plate is left exposed, as in the first diagram, the bond will be more effective.

4 A full contact area needs blending until it is invisible and there is no shadow that can be seen through the overlay. This involves more work and there is a greater risk that the natural nail will be buffed. Blending a small area is very quick.

5 When any tip is applied to a nail with a flat upper arch, the contact area must be completely in contact with the nail. A full contact area will cause the tip to be tilted upwards at a very unnatural angle (2).

6 By having a minimal contact area, the angle of the tip can be placed so that the finished nail looks most natural (3).

7 By placing the tip at the correct angle with a reduced contact area, the line to be blended will be at
the top of the upper arch curve and therefore easier to blend without touching the nail plate (4).

8 Sometimes the contact area is almost as long or longer than the client's nail plate and there is very little room left to blend the area without damaging the soft tissue. This is particularly the case with nail biters.



(1) Tip with full contact area on nail



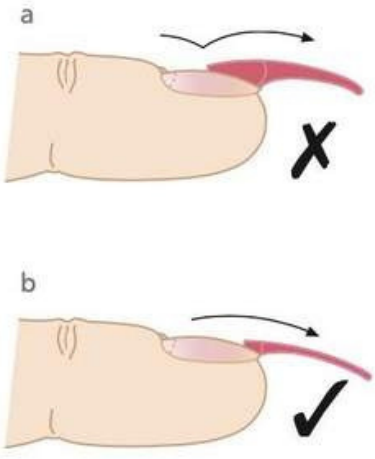
(2) Wrong angle of tip with full contact area



(3) Corrected angle of tip with reduced contact area



(4) Tip with reduced contact area on nail



Tip and upper arch (a) tip with complete contact area producing wrong upper arch curve (b) tip with reduced contact area producing correct upper arch



Removal of contact area using a file



Removal of contact area using scissors

REMOVING THE CONTACT AREA

There is no rule that states that the contact area must be removed or left in place. However, it is a very useful skill and a thorough understanding of the question allows individual technicians to make up their own mind what is right for their client.

The most important result is a natural-looking, strong artificial nail that has been applied without damage to the natural nail and under safe and hygienic conditions.

THERE ARE TWO METHODS OF REMOVING THE CONTACT AREA

Using A File

By holding the tip and the file at the appropriate angle (see picture), the contact area can be removed very quickly leaving a curved edge. By leaving this shape as opposed to a straight edge, the side walls of the free edge of the natural nail are provided with extra protection and support.

Using Scissors or Clippers

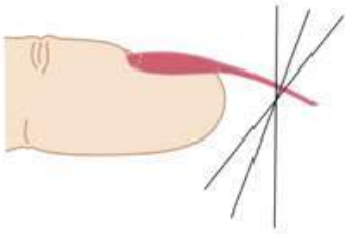
Scissors with a curved blade are ideal for snipping around the contact area, following the shape of the stop point. Nail clippers can also be used to cut out a 'V' shape.

APPLYING THE TIP TO THE NAIL

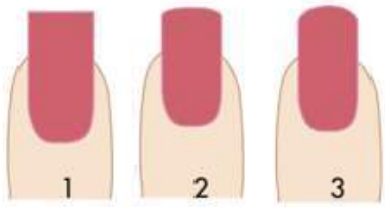


Angle of application of tip on nail – 45°

Once the tip had been chosen and any necessary tailoring carried out, it must be applied to the nail with adhesive. The choice of adhesive is for the technician unless the client is a severe nail biter or has a damaged nail plate. If this is the case, a thick adhesive or gel should be used that will fill and cushion the irregularities of the nail plate or, in the case of a nail biter, fill the area where the nail has been bitten down below the hyponychium. If this area is left as an air space, there could be problems with bacteria or excess moisture.



A small amount of adhesive should be carefully placed in the contact area of the tip. Placing adhesive here is preferable to it being placed directly on the nail. When placed on the nail, it can easily run down into the side walls or over the edge of the finger. When placed on the tip, it starts affecting the plastic of the tip immediately, softening it ready for accurate placement.



Angles of one-cut tip cutter
1 = square
2 = rounded square
3 = oval

The tip should be brought to the free edge of the nail at an angle of around 45°. This will allow the nail to be placed correctly in relation to the nail plate and then levered down onto the nail, expelling any air bubbles as full contact is made. As soon as the excess adhesive is seen being squeezed out onto the nail plate, the tip should be held in place for a few seconds until the bond is made.

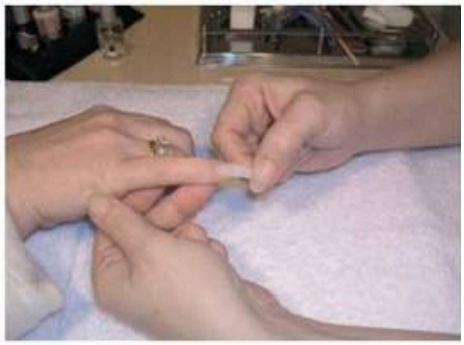


Cutting tips with clippers

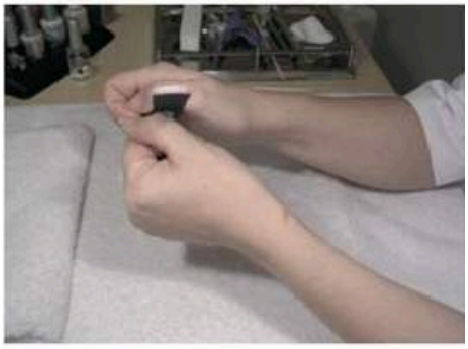
At this stage, the finger should be pushed up from underneath by the hand that is holding it rather than the tip pushed down. If the tip is pushed down it is very easy to lift it too high and therefore break the contact at the free edge and pull in air.

The lack of oxygen present between the tip and the nail encourages the adhesive, to cure quickly, much quicker that when exposed to the air. However, the thicker the adhesive the longer this curing takes.

This should be repeated for each finger on one hand. When all five tips are applied, they can be cut to slightly longer than the desired finished length. The length should be decided by the client, but with advice from the technician if the requirements are unreasonable, such as too long for the nail bed or lifestyle. At this point, it is worth asking the client what shape is required - oval, square, rounded square or tapered. If the client has no preference, the shape of the base of the nail should be followed to create a good-looking nail.



(1) Choose correct size



(2) Remove contact area



(3) After replacing adhesive in contact area, apply tip to nail



(4) Cut tip to appropriate length

CUTTING TECHNIQUES

There are several tools on the market designed to make cutting tips easier. They are adaptations of a tool used for clipping animal claws but instead of a round hole that the claw fits through, they have a curved hole for the tip.

These clippers are quick and efficient and allow the tip to be shortened with one movement. When using cutters, the metal plate that has the curved hole must be nearer the finger.

This will protect the finger from being cut as the blade is on the other side. If the cutter is angled under the client's hand, a slightly curved shape will be cut on the tip. The more upright the cutter is held, the straighter the edge.

Care should be taken not to hold the cutter away from the client as this will result in an edge that curves in the wrong direction and, if the cutter is moved during cutting, could result in pulling the tip off.

Scissors or nail clippers can be used for cutting tips. Plastic tips are easily 'stressed' or bent which results in white areas.

When using clippers or scissors, the tip should never be cut across in one action as this will cause the stress lines. Each side should be cut separately (see picture).

The angle of the clipper blade will produce an outline of the finished shape – that is, oval, square or tapered. The piece of tip should be discarded as it cannot be used for anything else.

BLENDING THE TIP

Once all the tips have been cut to the required length and the unwanted ends discarded, the tips must be blended to the natural nails. The result should be perfectly natural in appearance and look as if the nail grew there. More importantly, there must be no damage to the nail plate.

There are two methods of blending the tip: manually – that is with a file – or chemically with acetone or a branded tip blender.



(1) File sides of tip



(2) Shape free edge



(3) Blend contact area

Manual Blending

During training, procedures are easily learned if eight easy steps are followed. These steps will help to produce a perfectly blended tip:

1 Holding the file parallel to the finger, 'tuck' it down in the side walls and, with a few strokes, blend the sides of the contact area of the tip so that it is the same width as the nail plate. By keeping the file parallel, the sides of the free edge will remain straight (1).

2 Shape the free edge to the approximate shape and length required. Look at the tip on the finger as a whole and not just the nail plate to check that it is a suitable length and shape and that it is straight to the finger (2).

3 Holding the file flat to the tip, gently start buffing the surface, starting at the tip, and working backwards towards the contact area. The shine of the tip must be completely removed (3).

4 Using at least two-thirds of the length of the file, gently buff the contact area. Care must be taken not to buff in the same place for too long. Keep moving the file all over the area but avoiding the nail plate. It is not necessary to press hard with the file as gentle pressure is much more effective. The contact area will become much thinner until it is transparent and cannot be seen. A little nail adhesive often squeezes out onto the nail during the tip application and becomes shiny. This can be a very useful guide to help know when the tip has been blended and the nail is being avoided. The tip must be completely invisible and there must be no evidence of a 'shadow' where the contact area is.

5 Refine the shape of the free edge until it is perfect and even and remove any debris that may have collected underneath during filing.

6 Look at the nail from the side to check that the upper arch is correct and even, and that the lower arch is correct.

7 Gently refine the 'smile line' area to produce a neat and natural-looking effect.

8 The tip should now look like a perfect natural nail and is the ideal 'canvas' on which to apply the overlay.

CHEMICAL BLENDING

This method works by melting the plastic of the tip as an alternative to blending with a file. Some people, trainees in particular, like to use this method as they feel that damage to the nail plate can be avoided. To a certain extent this is true, but other problems may occur if it is not fully understood. It is not necessarily quicker than manual blending as, once mastered, manual blending is very fast. Acetone may be used or there are a number of branded products on the market.

1 Once the tips are applied, paint a small amount of the tip blender with either a disposable cotton bud, or a brush used solely for this purpose, over the contact area. Wait a few minutes while the plastic melts. This time can be used to apply the blender to other tips to help speed up the process. Do not apply too much, as any liquid can be absorbed into the nail plate and could cause unnecessary dehydration. Too much liquid will also run into the side walls and cause dehydration.

2 While waiting for the blender to work, the free edge can be shaped to the required length.

3 When the tip starts to look very shiny, use a fine file to file away the melted plastic. The blender can be reapplied, if necessary, but too much solvent on the nail plate should be avoided.

4 Follow steps 5 to 8 for manual blending now to ensure a perfect nail.

5 Make sure that there is no melted plastic covering the nail plate, as this could prevent a good bond with the overlay and could result in lifting in the centre of the nail leading to an air pocket.

6 Brush the file as the melted plastic can stick to the abrasive and make it less effective. Discard the file if the plastic cannot be removed.

Although skillful manual blending is usually faster, chemical blending is an excellent standby for the client who has very sensitive nail beds and cannot take any buffing on the surface. It is also useful for a nail biter who has such a tiny nail plate that it is difficult to use a file without damaging the soft tissue.

REMOVING THE DUST

Once all the tips are perfect, the dust that has been produced must be removed from the nails. A bristle brush may be used, but thorough hygiene procedures must be followed to keep this very clean. Remove dust inside the nail folds with care, making sure that oil from the skin is not brought onto the surface of the nail. The product being used for preparing the nail plate is often very useful for this job as the moisture will remove the dust and the product will ensure a clean, oil-free nail.

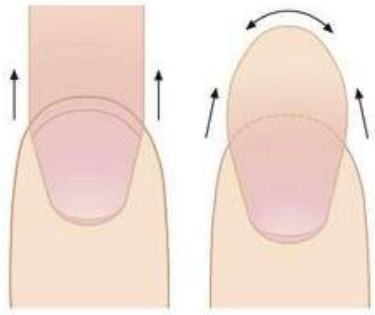


Once the tips are blended and cleaned, they should look like perfect natural nails. If this is not the case and there are shadows on the contact area or the free edge is curving up and not down, they are too wide or too narrow, they cannot be corrected by applying the overlay. No amount of clever overlay application will correct a badly applied tip. It will only make it worse.

PROBLEM NAIL SHAPES & HOW TO CORRECT THEM

Clients come in all different shapes and sizes, and so do their nails. It is a very lucky technician who is presented with lots of nails that have beautiful long nail beds with parallel side walls and neat free edges. Most clients present their technician with all manner of horrors, and it is the job (and often challenge) of the technician to make the artificial nail look perfect. It is not enough to apply nails that follow the natural shape. Many natural shapes are not perfect and are not always very attractive. The technician must correct natural imperfections. Many natural imperfections or problem shapes can start to be corrected with the tip application. This, followed by a planned overlay shape, will result in the desired perfection.

Practice is the only real way to perfect the art and skill of correcting problem shapes, but the following suggestions are a starting point to help that practice along.



(a) Fan-shaped nail: fit tip to width at free edge (b) Fan-shaped nail with blended tip: tapered sides and oval shape

Fan-Shaped Nail

Looking at the nail from the top, the sidewalls of a good shape should be parallel to each other. A fan-shaped nail is very common; this is where the edge of the nail is wider than the base, that is, the sidewalls 'fan' out.

This nail plate is usually quite short and artificial nails can look very wide and clumsy and not at all elegant if the shape is not corrected by the skillful technician.

The correct tip size should be chosen carefully and the width of the nail plate at the free edge is the area which will decide the correct tip size. A tip with a full contact area usually appears much too wide as the contact area will often be wider than the centre of the nail plate. This does not matter as the contact area can be removed.

The stop point of the tip must be the exact width of the free edge (a). Once the correct size is chosen, the contact area can be removed. It is likely that most of the area will need to be removed to avoid it being wider than the nail plate. Sometimes it is also necessary to angle the remaining contact area inwards so that it fits the nail.

The tip being tailored should keep being fitted to the nail to make sure the shape is right. This shape of nail is also usually quite flat with little or no upper arch or 'C' curve. A tip that has a flatter shape should be chosen so as to avoid any stress being put on the nail bed by a curved nail. If the flatter tip is still too curved to comfortably fit the nail without pressing it flat, a wider tip should be chosen, and the sides filed to the correct width. When this has been achieved and the tip has been applied at the correct angle for a gentle upper arch (remembering that the tip will need to be angled down slightly to help create an upper arch), it can be cut to length. It is inadvisable for the free edge to be any longer than half the length of the nail bed.

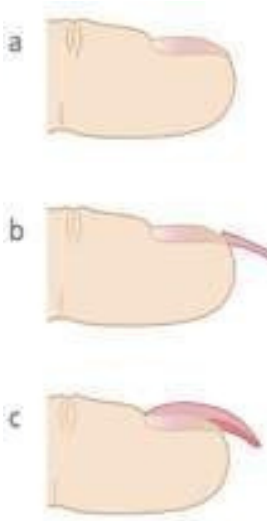
Anything longer than this will not look attractive and will not be as strong as a shorter nail.

When shaping the free edge, the side walls need to be tapered in to compensate for the wide free edge. An oval is often better for this shape of nail as the base of the nail is usually oval, but a square can be achieved if required that does not look too wide. This is achieved by making the parallel sidewalls taper slightly towards the tip of the free edge. If done correctly, the sides will still look parallel but more elegant than if left, as this can accentuate the 'fan' shape of the natural nail. The square edge can then be achieved, and the overlay applied.

Hooked Or Claw Nail

A hooked or claw nail has an exaggerated upper arch, and the free edge tends to curve over the end of the finger. Clients with this shape of nail are often unable to grow their nails as the downward curve is unattractive.

The solution for this problem is to remove any free edge on the natural nail, choose a tip that fits (this is often one with quite a deep 'C' curve) and remove a great deal of the contact area. When the tip is applied to the nail, the side view should be checked and the upper arch corrected. Care must be taken that the underside of the tip does not have a gap between it and the nail plate, as debris could collect and cause problems.



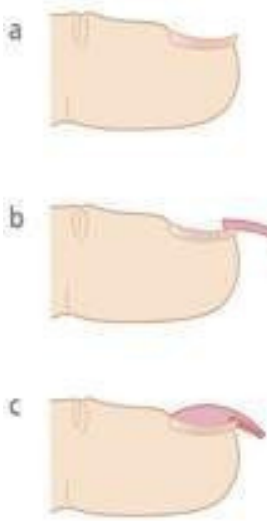
Claw nail (a) claw nail with no free edge (b) tip applied to edge of nail at correct angle (c) tip blended and overlay applied to correct poor upper arch

The corrective solution is very similar to that of the claw nail. The free edge b should be as short as possible, and the contact area of the tip removed. As the strength of the finished artificial nail is in the overlay and not the tip, the contact area can be tiny, if necessary, in order to achieve the correct upper arch. As before, when applying the tip, look at the side view and make sure the tip is curving down, even though the nail bed is curving the other way.

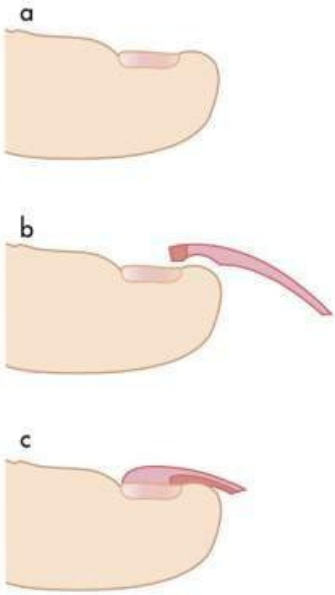
The length should be quite short as, the longer the free edge, the more the curve will appear. Adjustments in the structure of the overlay will further compensate for this shape.

Ski-Jump or Spoon Shaped Nail ski-jump

A relatively common shape, the is a nail that curves up towards the tip. If a tip was put onto this shape without any correction, the nails would appear to be pointing upwards. The length should be quite short, and the overlay will need to be adjusted to compensate for the unusual shape produced by tip application.



Ski-jump nail (a) ski-jump nail with no free edge (b) tip applied to give better upper and lower arch (c) tip blended and overlay applied to correct poor upper arch



Bitten nail (a) Badly bitten (b) Side walls of tip removed to form 'bridge' over end of finger; contact area also drastically reduced (c) Tip cut short and blended with overlay to compensate for poor shape



Tip pretailored for a nail biter

Bitten Nails

Bitten nails are probably the biggest challenge for the technician. If a good-looking set of artificial nails can be achieved from a set of severely bitten 'stubs' the technician can do anything! Obviously, there are many degrees of nail biting, from the occasional nibbler to the person who bites their nails down past the hyponychium and on to the nail bed. The worst scenario is the experienced biter who not only bites down onto the nail bed, but also chews and picks at the soft tissue around the nail. The technician can do their best with the nails but can do little, other than offer advice, for the surrounding skin.

Obviously, recommending a course of manicures before applying artificial nails is preferable, as the cuticle and nail fold can be improved and some nail growth will help the strength of artificial nails; however, it is unlikely that the client will agree to this or succeed if they do agree. Biters do not usually bite deliberately and often try to stop the habit. They will try quite hard and achieve a little growth but then, while watching a good film, reading a good book or after a stressful day, will unconsciously nibble and spoil all the hard work. When this happens, there is often little point in leaving the other nails, so they all go, and the biter is back to the beginning.

Having a set of artificial nails can often be the answer for several reasons. A skillful technician can make the nails and hands look so good that the client does not want to spoil them. Having paid for the service, the client is more likely to make sure the money is not wasted. The unconscious move to the mouth is immediately noticed as the teeth come across hard plastic instead of soft skin. Nails applied well need determination to bite off, although the biter who is determined will do it whatever it takes!

Preparation

Although it is a challenge that will take the technician longer than usual, even the worst biter can have a set of very good-looking nails. The challenge starts with the preparation.

A biter will often have a very obvious layer of cuticle and a pronounced nail fold. The cuticle can be removed relatively easily, but the nail fold will take more time as it must not be forced. Manicures would help a great deal, but this may not be an option. If the nail fold cannot be lifted, it must be left to be dealt with after the artificial nails have been applied, either during homecare or manicures.

The remaining nail plate will be soft owing to the length of time it spends soaked in saliva. There may also be dents and crevices where bacteria can breed.

Preparation must be efficient and thorough with the nail and surrounding skin very clean, and the nail plate dehydrated as much as possible.

The skin around a bitten nail is usually puffy, again owing to the amount of time it spends soaked in saliva. The end of the finger is often slightly swollen from this puffiness, the sides of the nail plate hidden from view and the overall shape flattened. All this will change dramatically after a couple of weeks with artificial nails.

Milder cases of nail biting need to have the tips applied in the usual way, remembering all the rules about leaving most of the nail plate exposed for the overlay bond and creating good curves. If the nail plate is bitten down past the hyponychium, the skin that is exposed will usually be swollen and higher than the nail plate and the tip will need a great deal of pre-tailoring before application. A tip, even with the contact area removed, when applied to this type of nail will point upwards as the skin will not allow it to lay flat.

A flat tip needs to be chosen and, if necessary, a wider one made narrow to provide the right 'C' curve (or lack of it). To find the right size, the skin at the sides of the nail must be pulled back very firmly with the finger and thumb of the technician so the full width of the nail plate is exposed. Like the fan nail, the width at the edge of the nail and the stop point must match exactly, regardless of any other part of the tip.

When the correct size has been chosen (or made) the contact area must be removed so that only minimal At this stage the tip will still not sit on the nail properly, as the skin will push it up. The sides of the tip from the stop point down the sides of the free edge need to be carved out for the puffy skin to fit into (b). This will form a 'bridge' that will curve over the puffy skin and create a reasonable arch that curves down instead of up. This 'bridging' is necessary as, without it, not only will the nails look unattractive, but the skin that has been pushed down to fit the tip to the nail will push the nail upwards and make it very weak and liable to breakages.

When applying the tip with adhesive, it is advisable to use a much thicker adhesive than usual. With the skin in the way, the tip cannot be angled onto the nail and needs to be placed from the top. There is also usually an area around where the hyponychium should be that is lower than the nail and the skin. If using thin adhesive, it is difficult to avoid air bubbles when placing the tip in this way, which might allow a space where bacteria can thrive. A thicker adhesive will help to avoid the bubbles and fill up and cushion the area of the hyponychium.

The length must be very short, just to the end of the finger is ideal. The artificial nail will not be as strong as that on an unbitten nail and the client will be unused to having nails and will be clumsy for a few weeks.

Blending the tip on a small area can be tricky and if it is difficult to avoid the usually delicate soft tissue, it may be advisable to use a chemical tip blender. Although some people prefer an oval-shaped nail, a free edge that is slightly square usually better suits the wider fingertip of a nail biter.

The overlay will further improve the appearance of the nails and the homecare advice must be specific, as must the need for maintenance visits.

PROBLEM SHAPES SUMMARY

Following on from the problem shapes encountered earlier on tip application, there are some shapes that can be improved using overlays.

Ski-Jump Nails

If the tip is put on at the correct angle for a ski-jump nail, the lower arch will be good, but the upper arch will be very strange. This can be very easily corrected by careful structuring of the overlay to create a good upper arch and a strong nail (see diagram).

Bitten Nails

Still the most difficult problem to overcome, like the ski-jump, the bitten nail can be further improved by the overlay. The overlay only has a tiny nail plate to hold on to and the length must be just to the end of the finger, but the overlay can be applied so that the upper arch can look quite natural. The nail really needs to be covered with colored varnish to hide the lack of a smile line but, if this is done, the finished nail will look very good.

Twisted Nails

If natural nails were allowed to continue growing, they would curve down and twist in a clockwise or anticlockwise direction. These twists may not start until the nail has reached a decent length, but they may start on the nail bed. This can be seen if the shape of the barrel is viewed from either the tip looking towards the hand or from the hand looking towards the tip. It is difficult to see if the nail plate is very short, but the longer the nail is the more obvious the twisting becomes. Once a tip is applied and blended, a twist may become obvious. The lower arches will be uneven with one side dipping down more than the other. This can be easily rectified during the blending of the tip by matching both sides of the lower arch. The twist of the barrel can be rectified by placing slightly more product on one side than the other and making the 'C' curve of the nail even. The additional amount of product is minimal, and it is very easy to overcompensate. The easiest way to see this is by turning the client's hand around and looking down the nail from the hand down to the tip.



Wrong placement of French white tip and unsuitable natural nail shape



Correct placement of French white tip on suitable natural nail shape



French white tip prepared for overlay



Clear tips applied to nails



Clear tips blended and prepared for overlay

ALTERNATIVE TIPS

FRENCH WHITE TIPS

A French white tip is an opaque white, it is designed to create a quick and easy permanent 'French manicure' look. Although this tip can be used with any system, there are restrictions as to who can wear this tip. The tip must be applied to the end of the nail and not blended. The shape forms a perfect 'smile line' and the overlay will create the necessary strength.

This tip is not suitable for:

1 A client who has a different 'C' curve from the tip (there are now several shapes of white tips available, so having a selection is worthwhile)

2 A short nail bed, as the extra white tip, when correctly placed, will make the nail look unattractive with too much white and not enough pink

3 A client without any free edge; the tip's 'smile line' will need to be placed onto the nail bed instead of where it would naturally be and would result in an
unattractive nail

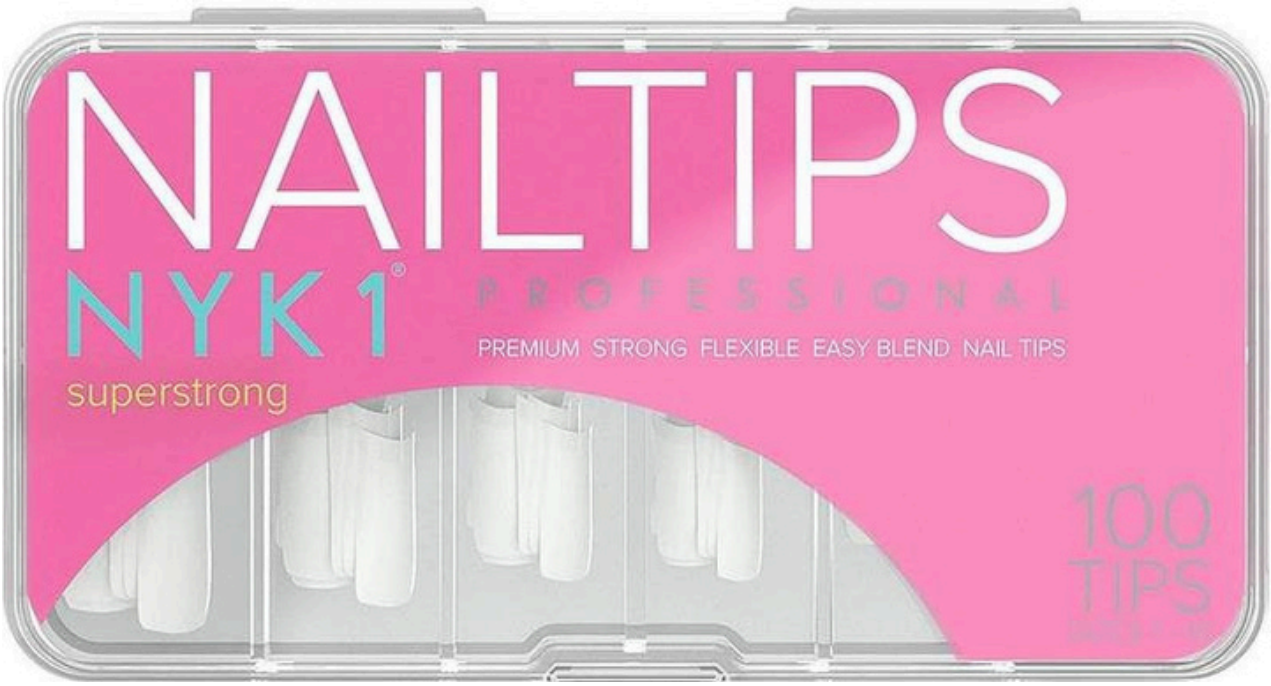
4 A natural nail that does not have an upper or lower arch that matches the tip. There is a correct placement for this type of tip that can create a perfect French manicure appearance. There is also a wrong placement that can make the finished nail look very unattractive.

A client wearing this type of tip must have the growth of natural nail covered during maintenance treatments.

CLEAR TIPS

These are tips that are totally transparent and are usually used for various types of nail art. They are dealt with in exactly the same way as traditional tips. When they are blended in, they will look dull and scratched, but as soon as an overlay is applied the dullness and scratches will disappear.

These tips should only be applied to nails that are very neat and without any free edge at all, as every irregularity will be seen through them.





Designed Tips

There are many pre-designed tips coming onto the market for quick and easy nail art. Some of them are in the form of tips with a small contact area and some have a larger contact area. Obviously, these cannot be blended, as this would ruin the design.

The nail should be prepared in the usual way and the tips applied to the nail. There is usually no need to do anything else to the tip at this stage and the overlay can be applied directly over the tip.

Summary

THIS MODULE HAS EXPLORED THE STAGES IN THE PROCESS OF LENGTHENING A CLIENT'S NAILS BY PLASTIC TIP OR OVERLAY TECHNIQUES – CHOICE, APPLICATION, AND SAFE REMOVAL – AND HOW TO COPE WITH THE MANY TYPES OF 'PROBLEM' NAILS THAT A CLIENT MAY PRESENT TO THE TECHNICIAN.

Assessment

ASSESSMENT OF KNOWLEDGE AND UNDERSTANDING

- What are the features of a plastic tip?
- How are a tip type chosen to fit a client's nail?
- Why is the correct width of tip so important?
- How can any damage to the natural nail during blending be avoided?
- How can tips be customized to fit various nail shapes?
- Ideally, what is the maximum length of an artificial nail while still keeping the nail balanced?
- What would you do if there is a bubble under the tip?
- How would you apply a tip to?

(a) nail biter

(b) ski jump nail

(c) hooked nail

- When would you avoid using French white tips?
- Why is it so important that the tip fits perfectly?

Applying Overlay

CREATE THE PERFECT ARTIFICIAL NAIL!

The perfect foundation has been created with the application of tips. Now is the time to create the perfect artificial nail that looks good and is very durable and strong. The tip has provided the required length, now the overlay on that tip will provide the required strength.

WRAP TECHNIQUES

By overlaying a tip, a longer artificial nail is going to be created. The overlay can be applied to a natural nail that has some length but needs to be protected because it is weak. Some clients like to wear a natural nail overlay just to keep their nail varnish in perfect condition as it does not chip. This treatment is often known as a nail wrap. This term probably came from a technique that was used many years ago by manicurists before the products and techniques we know now were available. If a client had split a nail or had weak nails, a piece of tissue was placed on the nail with a clear varnish.

Several more coats of varnish were applied to smooth the surface. The tissue was sometimes wrapped slightly under the free edge, especially if there was a split. This is where the term 'wrap' came from, and this procedure is probably the forerunner of the fiber system. Fiber users will now sometimes wrap the fiber mesh under the free edge to seal and strengthen it.

OVERLAY SYSTEMS

This aspect of artificial nail work can sometimes be the most confusing for the beginner. There are several different 'systems' and many different companies, all insisting that their system and brand is the best. Some companies sell all systems, others sell only one of them.

Many clients and technicians believe that the end results of the systems look very different. This is often the case, but it does not need to be. A beautifully applied set of nails should be a perfect shape and look natural whatever the system. One system need not look thicker or more natural than another.

Colors and finishes can make a difference, but the skillful technician can even overcome this with some little tricks of the trade!

The Systems in Use

Almost all products in artificial nails belong to the acrylic family of chemicals. Acrylics are a vast family of various types of plastic. The word 'system', when it is related to artificial nails, describes the specific method and type of acrylic that produces the overlay.



Each system has a specific collection of various components, and it is this collection and the application method that differentiates the systems. The tip application remains the same for each, although various brands may recommend specific preparation products. It is worthwhile taking these recommendations as, although cheaper options are often available, specific branded products have been developed to work with the system products to help achieve a better result. Introducing different or additional products or chemicals into the system can lead to problems.



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LIQUID & POWDER ACRYLIC SYSTEM

This system is probably more commonly known as ‘acrylic’, although the term is strictly inaccurate as all the systems are based on acrylics. The system was arguably the first to be used for artificial nails using materials from the dental industry and the term ‘acrylic’ has stayed since then. It uses a liquid monomer and powder polymer that cure to form a solid polymer. Its versatility in the hands of a skilled technician is immense and it is generally considered to be the trickiest to learn. It is sensitive to many external conditions, application techniques, and the time available to get it right before it hardens is limited. It is, however, a very popular system and is the favourite in the UK and US.

It has many advantages in that any shape can be sculpted onto a tip or a free form ; it can easily be used to correct difficult nail shapes; powders are available in different colours to allow the technician to create permanent French manicures or enhance natural skin tones. The overlay can be built to create the strongest structure and the strength within the overlay is excellent.

Its main drawback is the fact that the monomer is quite volatile and has a strong odor. Many technicians do not like the smell, or strong odours may be inappropriate in a beauty salon. Working cleanly, correctly, and hygienically can minimize this problem. There are some products on the market that are classed as ‘low odor’. This usually means that the evaporation rate is lowered. The newer versions of this type of product can work very well and, if odours are a problem and a technician prefer a liquid and powder system, they are certainly worth considering.

A version of this system that has some additional benefits is the UV light-cured liquid and powder system. These are applied in a very similar way to the traditional acrylics; the main difference is that they do not polymerize until UV light is applied as the catalyst. This can be very beneficial for beginners as they have plenty of time to apply the overlay in the correct shape. For experienced technicians, both hands can be worked on, which avoids any additional time for curing. These monomers are in the low-odour category and therefore can be more user-friendly if odours are a problem. The overlay that is produced is as versatile and strong as traditional acrylic but, with some brands, has a characteristic that must be dealt with carefully: many UV-cured materials do not achieve a total cure and a sticky residue is left on the surface where oxygen has inhibited the cure. This residue is unpolymerized monomer, which is a skin irritant. It must be carefully removed with an appropriate solvent before buffing, as continual contact with the skin for either the client or the technician can result in an allergic reaction.

Most brands of this system have powders in several colours. This gives the technician the ability to create very natural looking artificial nails that suit the client’s preferences.

ACRYLIC COLORS

THE MOST USUAL COMBINATION OF COLORS AVAILABLE ARE

Clear

Used for either the entire nail or over the nail bed. Suitable for a nail bed that has a good color.

Pink

A powder that has a slight pink pigment added to it to enhance the color of the nail bed. Used in the same way as clear. There are some brands that produce different shades of pink, so the shade best suited to the client can be chosen. Some pinks can be a little 'violent' and, if there is only one choice in the brand, take this into consideration when choosing which brand to use.

Bright White

This is a heavily pigmented powder for use on the free edge only. It will create the very specific appearance of a French manicure. The application of this needs lots of practice as it is essential to achieve a perfect smile line for it to look good. This is also used during maintenance to put the smile line back to the right place.

Natural White

This has less pigment than a bright white and will create a more natural looking nail. The application of it in on the free edge still needs care but the smile line is not so sharp. Even if this is not used during the first application of artificial nails, it is very useful to cover up the natural nail growth at the free edge. This growth of nail visible through the overlay often prevents wearers from having their nails varnish
free as it does not look attractive. When choosing brands, check that the natural white is dense enough to do this job.

Natural

This is not so common in modern brands now but is a milky version of clear. It was very common in early liquid and powder systems as a good clarity in the overlay was difficult to achieve and the milkiness hid imperfections. Some clients still like the look of a milky nail, but it should never be used to hide poor workmanship such as visible lines from previous maintenance treatments.

Colored Powders

There are many brands that have introduced multi- coloured powders. These are for use either as a 'permanent' colour instead of varnish or they are used to create nail art designs. The preparation and application are the same, but various colours may be applied in different sequences rather that following the order indicated. The liquid and powder systems are applied with a brush made of natural hair, usually sable or the better-quality Kolinsky sable, by dipping the tip of the brush first into the liquid monomer and then into the powder polymer where it picks up a bead of the material. This bead is then applied to the nail and pressed into place. Polymerization either occurs within a few minutes or when placed under a UV light if it contains a photo initiator.


PINK
NUDE
WHITE
CLEAR

OVERLAY STRUCTURE

THE THREE ZONES

When applying an overlay, it will help to think of the nail with its tip in terms of three different zones:

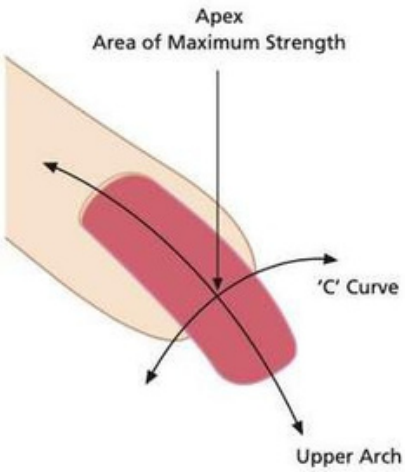


Zones of the nail

1 Zone 1 is the free edge where the overlay needs to be thin on the edge so that the finished nail does not look artificial.

2 Zone 2 is the area over the smile line and slightly onto the nail bed where maximum strength is needed.

This is the area of the nail that receives the most stress. It is often called the 'stress area' and should have the highest point that is called the 'apex'. The strongest natural structure is a curve (pressure is dispersed along the curve and is not concentrated over one point). The apex should be where two curves, the upper arch, and the 'C' curve, come together at their highest and thickest part. This will create maximum strength for the whole nail without putting any stress on the natural nail, the nail bed, or the matrix.



Curves of the nail

3 Zone 3 is the area near the base of the nail. Like Zone 1, this should be thin so that any ridges on the nail bed are avoided and, by being thin, it will be more flexible and able to move with the softer natural nail in this part of the nail plate. If these zones are always kept in mind when applying an overlay, the correct shape and strength will be easier to achieve.

APPLICATION

The steps in the application procedures listed below are general and, although they will be appropriate for many brands of products, it is advisable to check with the manufacturer or distributor their recommendations for application techniques. Always follow the manufacturer's instructions when using nail products and always avoid mixing system products from different brands. Polymerization chemistry is carefully balanced and mixing potentially hazardous chemicals could be dangerous and could cause problems.

PRODUCT CONTROL

PRACTICING PRODUCT CONTROL

Picking up the product with a brush in such a way that it can be applied to a nail is one of those things that looks very easy. It does, however, take a little bit of practice! For a beginner, picking up the perfect 'bead' can sometimes seem impossible.

- Some liquid and powder brands need a specific ratio (this is the amount of liquid to powder), others are less sensitive. There are some brands whose manufacturers recommend that a dry ratio is used in

Zone 1 (more powder means harder), a medium ratio in Zone 2 (combination of hardness and flexibility) and a wet ratio in Zone 3 (maximum flexibility over the softer part of the nail).



Dipping a brush in powder

- Usually, the bead that needs to form on the tip of the brush needs to look smooth and glassy.

Practicing product control for a little while is time well spent for a beginner. Understanding how the product behaves and practicing picking up various beads will save a great deal of time, especially if these first attempts are placed on a nail and either have to be removed or buffed into shape.



Bead too wet

- To do this, get a piece of unwanted plastic or glass, dappen dishes with monomer and powder (use coloured powder as well as clear or pink as they behave differently owing to the density of pigment), a brush and some disposable towels.

- Dip the tip of the brush into the liquid and wipe it on the sides of the dish, dip the tip of the brush into the surface of the powder (not deep), hold it there for about two seconds and lift it out. It should have a bead of wet product on the tip.



Bead too dry

- If the bead is so wet it falls off, there was probably too much liquid still in the brush, so it would need to be wiped on the side of the dish a bit more. It may be that the brush needed to be in the powder a bit longer to pick up a bigger bead.



Perfect bead

- If the bead that is picked up is rough, with obvious powder on the surface, the ratio is much too dry. Maybe there was not enough liquid in the brush, or the brush was left in the powder too long and picked up too much powder.

Practice this a few more times until a bead can be picked up that is smooth and glassy in appearance and does not fall off the brush. Different methods of dipping the brush into the liquid can be tried, such as sliding the brush down the side of the dish, noticing how far the brush goes into the liquid, squeezing both sides of the brush on the sides. As a brush is made of natural hair and many brushes are handmade, each one is going to have its own characteristics. One brush may hold much more liquid than another.

PICKING UP POWDER

There are different methods of picking up powder: little circles can be drawn in the surface of the powder, or the brush can be drawn through in a line. The brush should never be dipped in further than the tip and there should be sufficient powder in the dish to avoid the brush touching the bottom. If this happens, the bread sticks to the dish and is difficult to get out. It is also worth tapping the dish on the desk to smooth out the surface of the powder. A smooth surface makes picking up a bead much easier.

Bead Control

When a bead can be picked up confidently, it is worth moving on to 'bead control'. This will demonstrate what the ratio of the bead is, and the trainee technician can determine if this is correct.

This is done by picking up a bead and gently placing it on the plastic or glass. If the bead is on the very tip of the brush, it should come off the brush onto the surface with ease. Once the bead is on the surface, it should start to melt. How it does this demonstrates if the ratio is correct. By melting, the bead loses its shape and eventually becomes flat.

- All brands are slightly different but, as a general guideline, if the bead melts in less than 3 seconds it has a wet ratio, if it takes over 5 seconds, it is dry. A medium ratio, which is usually the one to aim for, should hold its shape momentarily and then start a slow melt.

- Doing this a few times, using the various ways to pick up a bead, will show the trainee how to pick up a bead of the right ratio.

This can now be taken a step further. Nails are different sizes and so are the zones on each nail. Now the right ratio can be achieved, it is time to practice picking up a bead that is not only the right ratio but also the right size! A step further again: the right ratio of the right size in a different colour, for example white tip powder. Colored powder usually needs more liquid owing to the color pigments present, so this should be tried out first to get the right ratio. After that, different-sized beads can be picked up to see how much liquid is needed in the brush, how long the brush should be kept in the powder, and so on.

After this has been practiced, it is worth deciding beforehand what the bead is going to be for. For example, a Zone 1 white tip for a little finger with a short free edge (very small) and then a Zone 1 white tip for a middle finger with a medium-length free edge (considerably bigger), and so on.

Determining how big the bead needs to be before it is picked up will save time later and is part of the way towards creating a good structure with a brush and not correcting a bad structure with a buffer.

Condition Of the Liquid

During this little exercise, the condition of the liquid should be noted. If it is looking cloudy or if there is powder at the bottom of the dish, it is badly contaminated. If this liquid was used on a nail with a clear or pink overlay, it would look cloudy and mottled. This contamination must be avoided during working and is easily achieved. When working, the brush should be occasionally dipped into the liquid and taken straight out without wiping it on the sides of the dish, but then wiping it on a disposable towel or tissue. This, if done a couple of times, will remove the build-up of powder that accumulates in the hairs and then goes into the liquid.

When using white-tip powder, the brush should be cleaned in this way after each nail. This is because the powder will remain in the brush and the next time the brush is dipped in and pressed on the side of the dish, the powder will be left in the liquid and the nails will become more and more cloudy. Some technicians even have a separate dish of liquid just for white-tip powder to prevent this happening.

Application On the Nails

Once a certain amount of product control is achieved, the application onto the nails can start. This procedure is the same as that for a natural nail overlay.

Creating The Perfect Shape

One of the most important aims of applying overlays is to create as close to the perfect shape as possible with the brush and not rely on correcting mistakes with a buffer afterwards. This obviously takes practice. Liquid and powder overlays continue to polymerize for quite some time after they become hard enough to buff.



Too little on tip



Too much on tip

Too much buffing can interrupt the polymer chains being formed and create weak spots. Also, buffing away what has just been applied can waste a great deal of time. It is much easier to try to apply it correctly in the first place and the buffing as a refinement stage.

APPLICATION USING WHITE-TIP POWDER

PRACTICING PRODUCT CONTROL

EQUIPMENT LIST
clean terry towel on desk
three layers of disposable towels
tissues or disposable towels
hand sanitiser
nail sanitiser
nail dehydrator
cuticle knife
cuticle nippers
tips
adhesive
tip cutters
liquid monomer in clean, covered dappen dish
powder polymers in clean, covered dappen dishes
primer (if required)
clean sable brush
files of 240 and 180 grit
oil
buffers, such as a white block
three-way buffer or block

1 The nails should have the tips perfectly blended, the dust removed and be clean and oil-free. One hand is worked on at a time from start to finish.

2 Apply primer (if instructed by manufacturers) very sparingly around the base of the nail. Make sure the primer is dry before applying overlay.

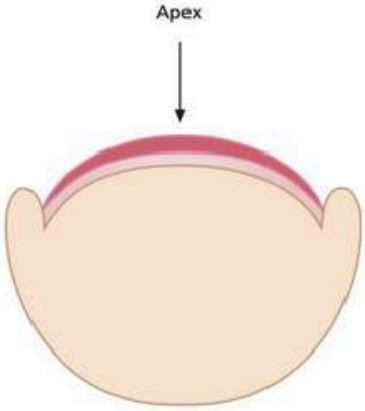
3 Clean the brush first by dipping it into the liquid, taking it straight out and wiping it on or between sheets of disposable towel.

4 Start with the little finger, pick up a bead of white-tip powder that is approximately the right size and place it in the centre of Zone 1 closer to the smile line than the edge (1).

5 Wipe the brush on the towel.

6 Holding the brush at the same angle as the upper arch of the nail and with the tip of the brush, press the bead. Take part of the bead to one side wall and create the point of the smile line (2); take part of the bead to the other side wall and create the point of the smile line; create the smile line as neatly as possible with the tip of the brush and smooth the surface of the whole zone. If the brush is angled down slightly and the overlay is gently pushed up towards the smile line, a sharper line can be created and a thinner edge of the nail (see diagram). If the smile line is uneven and needs straightening, the extreme tip of the brush (cleaned and dry) can be used to do this, making sure that the nail plate does not get monomer on it from the brush.

Check the shape by looking down the barrel of the nail to make sure the overlay is even. The centre of this smile line will form the apex of the nail. (Some technicians like to apply white tip to each nail before Zone 2. This is usually to avoid contaminating the liquid.



View of even overlay by looking down barrel of nail

However, as the overlay starts polymerizing immediately, the bond between the overlay at Zone 1 and 2 may have a weak point in it as Zone 1 has polymerized too much to blend with Zone 2. A stronger overlay is achieved if the whole nail is completed, and contamination is easily avoided.)

7 Clean the brush.

8 Pick up a bead of pink or clear of the right size and place it in the centre of Zone 2 next to the white tip (3).

9 Wipe the brush.

10 The bead will have started to melt while wiping the brush and will be ready to press into shape. Making slow and deliberate movements and keeping the brush parallel with the nail, press the bead and, like Zone 1, take part of the bead out towards the side wall, leaving most in the centre and blend over the white tip; take part out to the other side wall and blend over the white tip (4). Blend the whole zone over the tip. Check down the barrel for evenness and thin sides.

11 Pick up a bead for Zone 3 and place it in the centre of the zone (5).

12 Wipe the brush.

13 Press the bead and blend up over the whole nail.

14 With the brush flattened, press the overlay towards the nail fold, taking great care not to touch the skin with the brush and leaving a tiny margin of bare nail bed. With the flattened brush between the overlay and the nail fold, gently press the overlay to thin the zone and create a good bond with the nail plate (6).

15 Check shape from both sides to make sure the upper arch is in place and the overlay is smooth. Check overlay from down the barrel

16 Repeat process for each finger. Polymerization has occurred when the overlay can be tapped with the handle of the brush and a ‘clicking’ sound can be heard. If the click sounds dull, it is not sufficiently cured. Discard the towel that has been used to wipe the brush.

17 When all the nails on one hand are finished, go back to the little finger with a 240-grit file. Gently buff over the whole surface to smooth out any bumps and ridges. Carefully blend the edges of the overlay making sure the tiny margin of exposed nail plate is not buffed. Check overlay from all angles to ensure a perfect structure. Refine the free edge to make it as thin and even as possible (7).

18 Repeat for all nails.

19 Return to little finger and buff whole surface with a white block as this will start to refine the surface ready for the final stage.

20 Repeat for all fingers.

21 Using a three-way buffer in the correct sequence (usually black, white, grey) buff all nails to a high-gloss shine without any dull spots (dips in the overlay) (8).

22 Remove all the dust, including that which has collected under the nail and discard layer of disposable towel with all the dust.

23 Apply oil to each nail and massage into nail and cuticle (9).

24 Repeat the whole process on the other hand.

25 When both hands are completed, tidy desk by cleaning brush thoroughly and storing flat and away from dust, discard any unused monomer onto the disposable towel remaining on the desk. Make sure powder dishes are covered. Wipe the surface of the desk with a cloth dampened with a mild disinfectant (9) Apply oil

If the overlay is being applied without white tip, it should still be applied in zones, but it would not be necessary to create a smile line. Otherwise, the process is the same



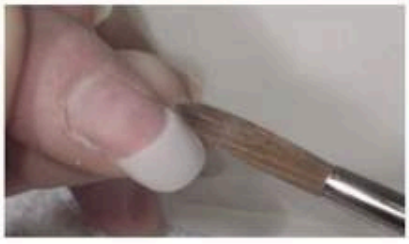
Troubleshooting

WHY & HOW TO..

If the overlay looks powdery in Zone 3, it is usually because the client's hands are very cold, or the liquid monomer is cold. This hinders the rate of polymerization leaving unpolymerized powder on the surface. This can be corrected by warming the client's hands before application or making sure that the monomer is at room temperature before using. If it is an emergency, for example, the first client of the day in a salon that has not yet warmed up, the covered dappen dish with the monomer can be placed in a bowl of tepid water (not hot) to bring it to room temperature.



(1) Place bead on Zone 1



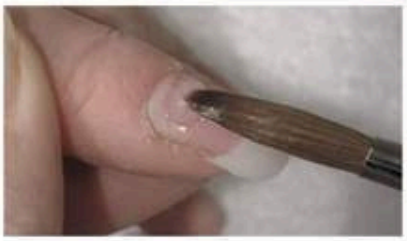
(2) Shape Zone 1 checking 'c' curve



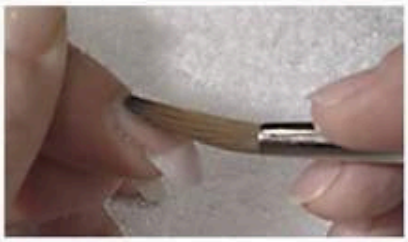
(3) Place bead on Zone 2



(4) Shape Zone 2 to blend with Zone 1



(5) Place bead on Zone 3



(6) Shape Zone 3 checking strcuture from all angles



(7) Shape and refine overlay



(8) Buff nail



(9) Apply oil

If the brush was not cleaned properly after the last use and has a lump of product in it, soften the product in some monomer (nothing else) and use a paper towel to try to remove the debris. Do not use your fingers as a sensitivity to the product may result. An orange stick can be used to dislodge the debris, but this will usually result in damaged hairs and a brush that does not work very well. Discard the monomer that was used.

CREATING THE NATURAL-LOOKING NAIL



A nail correctly applied in one system should not look widely different from one applied in another. The white tip that can be used in an acrylic system may look different from others, but there are white gels available, and the fiber system can use French white tips.

The finish can sometimes look different and a gel with a high gloss looks different from the high shine achieved by buffing an acrylic. However, if a client who wears acrylic nails prefers the high gloss, the gloss gel can be applied to an acrylic to give it that effect.

When applying nails, the most important aim is to create a natural-looking nail that suits the hand and is the strongest structure it can be. A technician is only as good as their last set of nails. No one can create perfection every time and a beginner need to be able to look at their results and recognize what can be improved. An eye for balance and symmetry is not always a natural skill and needs to be learned.

A trainee technician who has natural skill is very lucky; most do not have it and need to develop it. Many are not even aware that they lack this skill and send clients out with very strange shapes on their fingers.

TEMPORARY EXTENSIONS FOR SALON USE

It is recommended that a full, pre-formed nail cover which is attached to the natural nail plate by the fast (five-second) nail glues is only suitable for supervised salon use and not home use for the following reasons:

1 A lack of hygiene (failing to use antiseptic soaps) before home application, coupled with the possibility of creating air bubbles during application, can easily lead to bacterial infections.

2 A tendency to keep the nails on for too long, or to wait until they fall off or become loose and are pulled off, followed by immediate re-gluing, may cause problems

Such nails are ideal for fitting in the salon, however, for:

- Short-term wear (up to 2 weeks).

- Very badly bitten nails, such that the client is ashamed of the appearance of her nails but really wants to grow her own. This type of temporary extension will last her up to ten days, covering her embarrassment and breaking the nail-biting habit, whilst her own nails grow protected underneath. It may take two or three sets of false nails before sufficient length is obtained for regular manicures (plus the use of nail hardeners) or for the application of a more permanent type of false nail.

- As an interim protective extension whilst badly bitten nails (those with a bulbous fleshy protrusion beyond their tip) grow to a length which will accommodate permanent nails more easily. If permanent nails are applied immediately in cases where this bulbous flesh is present, the bulb of flesh will exert undue pressure on the false nail bond each time the client touches anything, thus reducing its effectiveness. This, coupled with the fact that the permanent nail extension is bonded only to a tiny area, means that the extension will not survive well. This is also why a temporary extension, even with care, will only last 7-10 days on these nails instead of the 14 trouble-free days which can be expected on normal nails.

TEMPORARY EXTENSIONS ARE UNSUITABLE IN THESE CIRCUMSTANCES

- For single nail extensions when nail varnish is not going to be worn, or if pale-colored varnishes are desired. The whiteness of the false nail would be obvious. For applying as a full set if no varnish or French varnish is required (i.e., a natural look), or if pale nail varnish colours are requested. The whiteness would show through and looks false.

- For clients who will not follow the removal instructions properly. When these nails are pulled off instead of being dissolved away in acetone, it is not the glue bond which breaks away, but the first nail layer.

This leaves the natural nail thin, weak, damaged- with areas of nail torn away in places, to different depths- and flaky. This effect can be remedied somewhat by buffing, with or without the prior use of nail glues (depending on the severity of the damage), followed by the use of a good protective, varnish- type nail hardener. In effect, however, this damage has to grow out, a process which can take up to six months. ('Bad' clients often pull the nails off and re-glue them for the sake of 'economy'.)

- For a very lengthwise curved, 'parrot's beak' shape of natural nail: a large gap would be left at the tip and would show from the back of the nails. This type of nail is available in different lengths and shapes, curved or straight lengthwise with different-shaped bases. Experience has shown the straight varieties to be the strongest and most durable, although the curved varieties are the most natural-looking. Length varies from country to country, with the Americans wearing their nails long and producing 'European' shorter-length nails for the English market which still have to be trimmed down for almost all clients!

Pre-colored nails are available: these shorten the application time as there is no need to varnish them.

Adhesives vary and are a matter of choice. They are all variations of the 'super-glue' genre and care must be taken with their use. Removal of the nails with acetone will not remove these glues, which must be removed by careful buffing away using suitable buffing files. Solvents are now available for some glues.

FITTING TEMPORARY NAIL EXTENSIONS

Materials (In Addition to The Usual Manicure Station)

- A selection of sizes of false nails (0-9).
- Smalt sharp scissors with which to trim the false nails
- Files: one 100 grits (very coarse for rough shaping); one 240-260 grit (coarse for final shaping and shaping the base to fit).
- A double-sided small file with foam between the emeries, which might be 240-260 grit and 600 grit (for shaping the base to fit and for beveling both the base and the completed tip). These files are often shaped, as hearts, squares, or circles.
- A three-sided buffer file, 600 grit and finer. (This is needed only if glue gets onto the nail plate tore-smooth the surface- essential when learning.)
- Quick-setting nail glue.
- Methylated spirits (70 percent alcohol).
- A cuticle sticks
- Cotton Wool (to roll around the tip of the cuticle stick, making an applicator swab for the methylated spirits).
- Tissue roll (one sheet is needed to soak up any excess glue which may be mistakenly applied).
- Ridge-filler base coat.

Technique

Prior preparation: the nails should have been pre-manicured and scrubbed with an antiseptic soap.

1 Inspection Ask the client to place both hands palm down on the manicure towel. Examine the nails minutely for contra- indications and for any areas which will need special care later (e.g., a single badly bitten nail).

2 Degreasing Dip, the cotton wool-tipped cuticle sticks into the methylated spirits and use it to wipe firmly and thoroughly over the surface of the nails. This removes any oils and moisture from the surface of the nail, allowing proper adhesion, and it also helps to kill any potential infection on the nail surface.

3 Sizing-up Now the correct sizes of nails must be selected to cover and extend the natural nail. The width of the selected nail is crucial: it must be neither too narrow, such that the natural nail shows at the side, nor too wide, such that the nail looks spoon-shaped or obviously clumsy and false. Application of too-wide nails is the most common fault; not only do they look unsightly, but the overlap onto the nail wall creates a space for moisture and dirt to collect, thus shortening the life of the nails by encouraging lifting. The second most common fault is failure to shape the base of the false nail to the natural line of the cuticle. In most cases, some shaping is needed here, followed by beveling to give both a comfortable fit (no sharp edges) and a tapered (as opposed to a thick) finish.

The two-sided sponge files are ideal for this work. Nails are also available curved or flat from side to side, so a good fit with no stress on the nail plate or the false nail can be achieved, thus making the false nails last longer.

As each nail is sized up, place it in a linear sequence to the right of the workspace, with the tip nearest the edge of the manicurist's side of the table, to make the set easy to pick up later.

4 Removing the shine Using a fine buffer file (certainly no more than 600 grit), gently take the shine off the surface of the natural nail plate. This is to allow the glue to bond better to the surface, which will be slightly scuffed instead of completely smooth. It is also to remove surface grease. At one time, this scuffing process was unnecessarily vigorous and damaging to the nail plate; improvements in the adhesion properties of the materials used are leading towards this stage being eliminated completely.

5 Degreasing Repeat step 2.

6 *Sticking* Make sure that the glue, tissues, and nails are ready to hand. It is quickest if one starts the sticking procedure from the client's right little finger and works straight across all ten nails. Make sure that the methylated spirit has completely evaporated away from the surface of the starting nail. If it has not, the fumes will cause the glue to start to set immediately and make the application of the false nail impossible.

If this happens, quickly wipe the glue away with the tissue, apply some more glue and continue. Taking one nail at a time, place a line of nail glue down the centre of the nail, starting about 2.5 mm (lin.) away from the cuticle. If the glue flows down the sides of the plate onto the finger, then too much glue has been used. Use sufficient so that the surface tension of the glue holds it in place in a long drop.

Immediately put the glue container down and pick up the relevant false nail, initially holding it at an angle to the nail plate. Place the base of the false nail onto the nail plate, level with the base of the glue drop. 'Pick up' the glue with the base of the false nail and take it to the base of the nail plate, without flooding the cuticles, by sliding the false nail down the nail plate and up against the cuticle, meanwhile lowering the rest of the false nail onto the nail plate. In this way the glue is distributed evenly underneath the false nail and air bubbles are avoided. Do not push the false nail into the cuticle or it will cause irritation, but also do not leave a gap or it will not look right. A natural, snug fit is correct.

Press down firmly on the top surface of the nail (when learning, be prepared to clean up excess glue with the tissue), wait about ten seconds, and fitting is complete. Repeat for the next nine nails in sequence.

At the end of fitting, check around the edges and under the tips of the nails to make sure that contact is total and that there are no air gaps. If these gaps are present, fill with glue, wiping away the excess. Gaps can easily be seen through the false nail.

If an air bubble has been created under the false nail, then the nail must be removed and another one applied or there is risk of lack of adhesion and, more seriously, of bacterial infection. At this stage, if some acetone is placed onto a cotton wool ball and rubbed firmly up and down the false nail plate, the false nail will easily be removed.

7 *Cutting* Selecting a first (index) finger, discuss with the client as to what length she would like the extensions. It must be explained that for optimum strength, the extension should be no longer than half as long again as the natural nail plate. Anything longer than this will decrease the length of time that the false nails will adhere to the natural nails. A client with naturally short nails is not used to handling long nails and will probably repeatedly catch and bang them. This will cause the nail layers to begin to flake away and the false nail to start to 'lift' and come off. Not only this, but repeated knocks can start to lift the natural nail from its bed, causing damage in this area as well as the possibility of bacterial or fungal infection.

After discussion, cut the extension straight across, slightly longer than you think- a bit more can always be filed away, but it is impossible to stick any back on! Then cut the sides roughly to shape. Show the client and continue cutting this nail until the right length has been agreed. Now the other nails can be cut, with one cut straight across and one cut to take each corner away- a total of three quick cuts per nail.

8 Filing to shape Selecting the 100-grit file, file all the nails to the correct shape and length. Fine shaping can be done using the 240-260 grit file, and the frills can be removed using the two- sided sponge sandwich file. Use each file on all ten nails before moving on to the next file so that time is not wasted through constantly putting down and picking up files. If there is any glue on the surface of the nails, this must be removed using the three-sided buffer.

9 Cleaning up Shake away the dust and bits from the hand towel on the station, tidy up, and wipe all the dust off the client's hands in readiness for varnishing.

10 Varnishing A ridge-filler base coat should be used, as some plastic nails show stress lines' after application and these can only be seen after the varnish is applied. They show more with pearlized varnishes than with cream varnishes but use of a ridge-filling base coat smooths them over. The usual number of coats of varnish should be applied and the nails finished with a topcoat.

If the client is advised to apply a coat of topcoat to the nails every second or third day, the varnish will last her as long as the nails do: false nails are not flexible and so will not bend and break away from the varnish as soft natural nails do (a major cause of flaking and peeling). The only thing which will cause the deterioration of the varnish is it wearing away in use. A regularly applied topcoat will stop this.



Removal

REMOVING TEMPORARY EXTENSIONS

MATERIALS

- Pottery or glass dishes, 8–10 cm (3–4 in.) in diameter and 5–7 cm (2–3 in.) deep (2).
- Sufficient acetone to fill these dishes, approx. 2–3 cm (1 in.) deep.
- ml (1 tablespoon) of oil (vegetable or mineral, e.g., baby oil) for each dish.
- A tissue sheet to protect the manicure station
- Cotton Wool
- Small scissors.
- A three-sided buffer files

TECHNIQUE

1 Remove the nail varnish.

2 Roughly cut away the excess length of the nail extension, taking care not to cut the natural nail underneath.

3 Place the fingers in the dishes containing the acetone and the oil. The oil coats the fingers and prevents the acetone from drying out the skin.

4 It helps greatly if the client will agitate her finger ends in the bowl, rubbing them against each other and against the bottom of the bowl.

5 Take one hand out of the acetone and, holding the fingers over the bowl to catch the drips, firmly wipe the melting surface of each false nail in turn with a piece of cotton wool or a Nail Neat which has been dipped into the acetone. Return the fingers to the acetone.

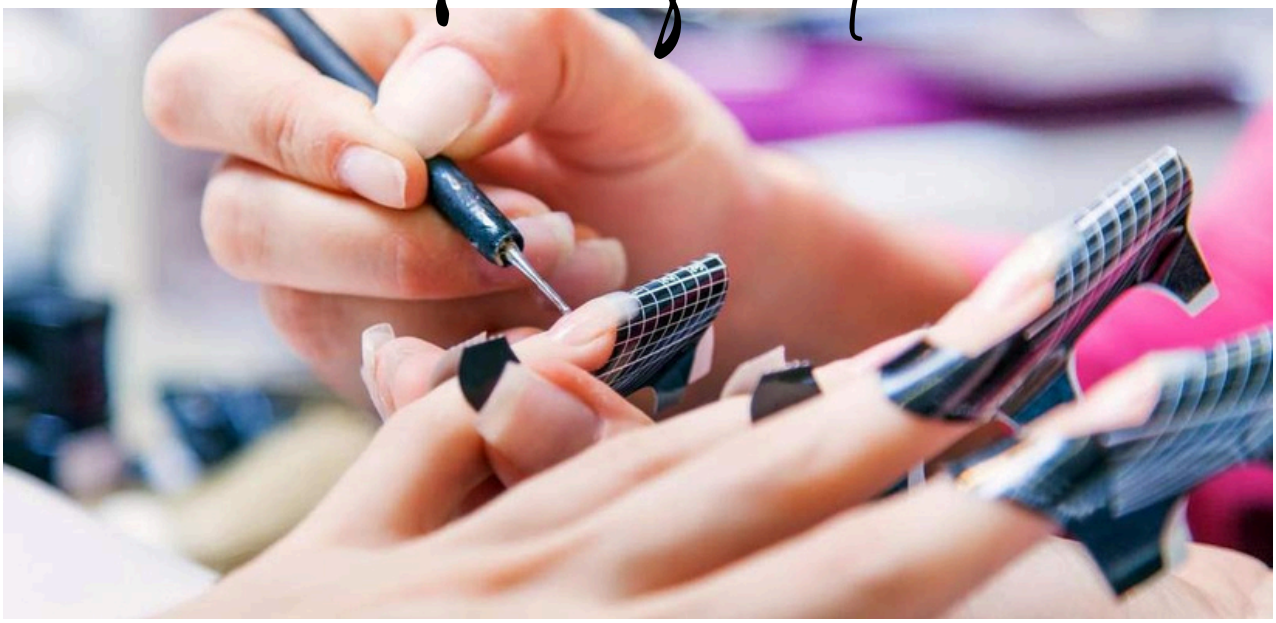
6 Keep repeating 5 with alternate hands until all the false nail has dissolved or melted away. There will still be some glue residue on the nail surface which will not dissolve in the acetone.

7 Ask the client to wash her hands, to remove the acetone and oil.

8 Proceed to manicure the nails as normal, during the course of which the remnants of the glue on the surface of the nail can be removed and the natural nail brought to a high gloss with the careful use of buffer files.

It is recommended that one use a varnish-type nail hardener after wearing these nails, to rectify any weakness or softness which may occur.

Practice Makes Perfect



Applying artificial nails is not just about making nails longer. It is also a skill that can solve many problems and make imperfect nails look perfect. By understanding the systems and becoming skillful at creating shapes, a technician can do many things with artificial nails. It is possible to replace nail plates that have been lost through accident or illness. It is possible to rebuild nails that are deformed through damage or a hereditary factor. It is even possible to build a nail where one does not exist, such as where the tip of the finger is missing. (If any work like this is attempted with a client who has a medical condition, it is important to get approval from their doctor first.)

The secret of the true professional and successful technician is practice. No technician can practice too much, both in perfecting shape and product control and applying perfect nails to every client regardless of nail shape, condition, and lifestyle. Nothing can replace the value of applying nails to a very wide range of people. Every nail is different, and every lifestyle is different. Seeing nails that have been applied two weeks earlier will teach the new technician much more than just practicing shape. Also, this is work that deals with people, so practicing with people is essential. When practicing, technicians should aim to apply a full set of artificial nail extensions in under two hours. This is acceptable for a client receiving a treatment from a technician, as opposed to a trainee. Every technician should aim to provide a full set of artificial nails in 11/2 hours or less.

Some nail salons operate very well with every treatment being carried out in one hour or less. This is the choice of the salon and their clients and can be successful as long as all hygiene rules, working practices and client care are maintained. Other salons, on the other hand, prefer to give their clients more time and a more relaxing treatment. The most important aspect of every treatment is safety and quality.

Aftercare

CLIENT ADVICE

The following after care advice should be given to clients after every artificial nail treatment:

- Return for recommended maintenance treatments
- If there appears to be discoloration under the artificial nail, return immediately
- Do not pick off the overlay
- Do not use nails as tools
- Massage nail oil into the cuticle area every day
- Do not file the surface of the nail
- It is not advisable to shorten the nail as the thin layer at the free edge will be filed away to a thicker area
- Use acetone-free varnish remover if necessary.

Potential Retail Recommendations

- Nail oil
- Varnish remover
- Varnish
- Hand cream
- Topcoat.

Summary

THIS MODULE FIRST EXAMINED THE FUNCTION AND STRUCTURE OF OVERLAYS AND THEN DEMONSTRATED STEP-BY-STEP TECHNIQUES FOR THEIR APPLICATION TO CREATE A NATURAL LOOKING NAIL, WHICHEVER SYSTEM – LIQUID AND POWDER, UV GEL OR FIBER – THE TECHNICIAN HAS USED.

Assessment

ASSESSMENT OF KNOWLEDGE AND UNDERSTANDING

1 Briefly explain the application of:

(a) powder/liquid

(b) UV gel

(c) fiber systems.

2 What structure creates the maximum strength for a finished nail?

3 What is meant by perfect shape and balance?

4 What is the purpose of zoning?

5 Suggest two methods of application that could correct or improve various nail shapes.

6 What conditions could adversely affect the application of overlays?

7 In a UV-cured material what inhibits polymerization?

8 Why is it important to provide treatments within commercially acceptable timings?

9 Why is it important to work with system products in the same brand and follow manufacturer's instructions?

10 What after care advice should be given?

Maintaining

MAINTAINING ARTIFICIAL NAILS

Every client is a 'full-set' client once; after that, they become a maintenance client or a natural nail client. Skillful maintenance is as important as skillful application and will keep clients returning on a regular basis. This chapter explores in depth the value and techniques of a regular maintenance Programme and examines the most common diseases and disorders the technician may have to deal with.

VALUE OF MAINTENANCE

During training, maintenance is one of the most useful learning aids and it must never be dismissed or skipped over. Many hours can be spent on learning application skills, but every client is different, and every set of circumstances is different. A trainee technician will learn nothing if they do not see the results of their application a few weeks later. The preparation of the nail may have been incomplete; the client may have a nail plate that is oilier than expected; the ratio of the product may have been wrong; the shape that looked good two weeks ago may now look horrible.

It is a fact that we often learn more from a mistake or something that goes wrong than anything else. It is not enough for a trainer to explain what 'may' happen. It is essential that the beginner can see what has happened and try to work out why. If this is done with the help of a trainer then, when the technician is on their own with a client who has a problem, they will be able to work out why and will know how to put it right.

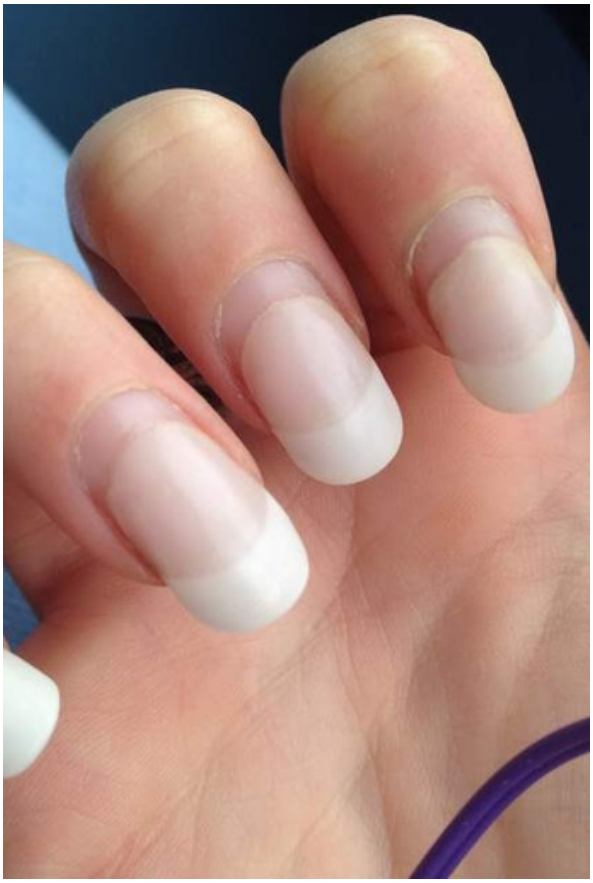
Like hair, nails are continually growing and what was put onto a nail near to the nail fold will be in a different place in two weeks' time. This is obvious if colored nail varnish is worn for some time. There will be a gap at the base of the nail and that small area of exposed nail plate will probably have cuticle attached to it. Just as in hairdressing, when hair has been coloured or permed, the 'regrowth' is very obvious.

NEED FOR REGULAR MAINTENANCE

The appearance of an outgrown artificial nail is one consideration, but there are two more important reasons for regular maintenance treatments:

1 The technician will have explained to the client that they must watch out for any changes to the nail and return immediately if anything is noticed. However, it is possible that there may be very slight changes that the client has not noticed, especially if coloured varnish has been worn. There may be some lifting of the overlay that is not very obvious. There may be a slight reaction to the products. There may be some minor nail separation owing to thin or dehydrated nail plates that was not evident before.





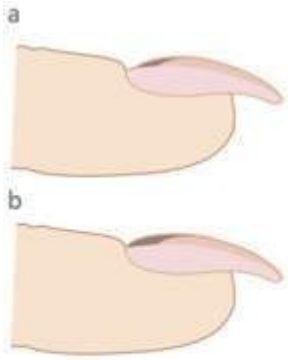
It is important that the technician keeps a close watch on the health of the nails and skin as they should be aware of things to look for that may not be so obvious to the untrained eye.

2 After a period of natural nail growth, the structure that was created during application with the two curves (upper arch and 'C' curve) meeting at the apex or stress point of the nail to create the strongest nail possible will have moved. The apex will have moved further away from the nail bed and could be on the free edge. This will unbalance the nail and make it susceptible to breakages. The smile line that was created either by the tip application or by a white tip overlay will also have moved and there will be a band of natural nail growth that will be a different colour to the tip.

MAINTENANCE TREATMENTS

It is not recommended, under any circumstances, to maintain a set of nails that has not been applied either by yourself or the salon where you work. No technician can be sure of the procedures followed by another technician and the preparation may not have been as thorough as it should have been. There may be a problem that the nail is hiding. The products used previously may not be compatible with the ones you use.

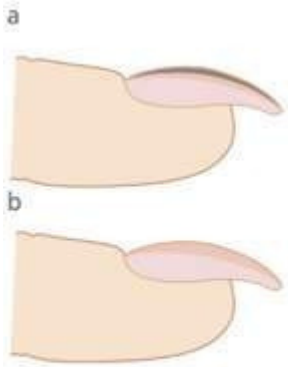
If a there is an infection of some kind already under the overlay that is not yet obvious, when it does become apparent you may be blamed. Either suggest the client returns to their original technician for maintenance or, preferably, explain why you cannot provide a maintenance treatment and suggest that the nails are removed, and a new set applied by you. Then you can be sure of the health of the natural nail and have confidence in the products used.



(1) Infill procedure
(a) Buff overlay near cuticle
(b) Replace overlay in shaded area

INFILL OR REBALANCE?

There are two types of maintenance treatments. One, called an 'infill', is a short treatment that allows the technician to check for any problems and fill in the small area of growth to make the artificial nail look smooth without a ridge at the base (1). The other is called a 'rebalance', as it removes the apex that has moved to the wrong place and replaces it in the right place, it fills the regrowth area at the base (2) and, if required, will put the smile line back to where it should be and cover the band of natural nail growth (3).



(2) Rebalance procedure
(a) Remove most of overlay
(b) Replace with complete overlay

The decision as to which treatment is needed should depend on the rate of nail growth. If growth is slow to average, it is likely that an 'infill' will be required two weeks after the first application and a 'rebalance' two weeks after that. These treatments can then be alternated. If nail growth is average to fast, then a full rebalance may be needed every two-three weeks.

Every client is different, but the general rule is two weeks between treatments. This must be shorter for a nail biter, who must be seen at one-week intervals for several weeks. Some clients may settle down to a treatment every three- four weeks if they have slow nail growth and are used to having long nails.



(3) Smile line at 2 weeks' growth

Assessment Of Client's Nails

Before the maintenance treatment can start, the technician must look very carefully at the client's nails, especially on the first maintenance visit after application of a first full set. This is especially true for trainees and beginners, and much will be learned from spending some time at this stage.

The aim for every technician is to see a set of nails return looking perfect except for the small growth area at the base and at the smile line. Experienced technicians will achieve this with the vast majority of new clients and all existing clients.

Beginners will experience all kinds of problems that will need solving during their first year but must never accept that this is part of wearing artificial nails. The saying of 'no pain, no gain' is most definitely not true in this case and, with skill and understanding, nearly every client should be able to wear beautiful and natural-looking nails without ever encountering a problem.

The incidence of an allergic reaction is probably the most worrying, but the chance of this happening to even the most sensitive client can be minimized, if not totally avoided, by good working practices.

PROCEDURE TO FOLLOW

As trainees can learn a great deal at maintenance treatments, it is a good idea to follow a set procedure. The differences between the systems at this stage are minimal.

What did the client want to achieve?

When providing a maintenance treatment, always remember what the client wanted to achieve at the beginning. Did they want to grow their own nails as soon as possible or were they happy to have artificial nails for the long term? Did they want to grow the tips off and have natural nails with an overlay? European women, generally speaking, tend to prefer natural nails or, at least, artificial nails that look natural.

They also tend to like to keep the option of reverting to natural nails open. In America, and occasionally in Europe, it is more acceptable to have artificial nails that look artificial. This is a very wide generalization, but many more women in America have their nails done.

Products have improved from the harsh dental acrylics that were originally used and technical skills are improving as awareness of the industry grows. Now there is no excuse not to keep the natural nail perfectly healthy and in at least the same condition as when artificial nails were first applied.

Is The Client Happy?

There should be discussion with the client as to how they are getting on and if they are happy with their nails. It may be that the original plan needs changing to achieve another goal. It is not unknown for a client to admit that they cannot cope with artificial nails or cannot afford long-term maintenance. If this is the case, the nails should be removed, and a course of manicures suggested. The client should always feel that the choice is theirs and the technician's main aim is to provide them with what they want to take care of their natural nails, whatever the treatment may be. Many clients like the idea that their natural nails are growing healthily and protected under the artificial covering and, when the natural nail has grown to a good length, the artificial nail can be removed.

This should be true for many clients if their natural nails are capable of growing in a reasonable shape. If this is the aim, the length of the nail should always stay the same as the first application, with infills and rebalances carried out. When the natural nail reaches the desired length, it is just a natural nail with an overlay (the tip has grown out). The overlay can be infilled but thinned on successive visits until the overlay is as thin as possible or not needed at all.

Step-By-Step Approach

At the start of each maintenance treatment, four steps should be followed, then nothing of importance will be missed out.

Observation

Look carefully at all the nails. A perfect, trouble-free set should look tidy. The only difference from when they were first applied should be the natural nail growth at the cuticle, leaving a gap, and at the free edge an obvious growth of natural nail. If there is anything more than this, there is a problem that needs solving and correcting and what is noticed should be noted on the client's record card. The shape of the artificial nail may not look as attractive as it did originally. It may look slightly bulbous at the sides or on the end. This will be due to the fact that the overlay was not applied in the best shape and was, perhaps over thick at the side walls.

Questioning

The client must be asked how they have managed with the nails. If there are any broken, ask how it happened. If it happened easily then the structure may not have been strong enough. If it happened during a minor incident and was painful, the structure was strong enough, but maybe the nail was too long. If it happened during a minor accident, then any nails would probably have broken.

Diagnosing

If the nails are less than perfect, the technician needs to decide what the possible causes of the problem may be and discuss this with the client. The probable causes of the problem should be explained.

Treatment

Having followed the above steps, the most appropriate treatment can be decided upon and suggested to the client. If the nails are perfect, maintenance will be minimal. If, however, some are lost, broken, or lifting, they will need to be replaced in such a way that the problem will not reoccur.

Putting Right the Problem

It is essential that the reason why the problem occurred is understood, and how to put it right. As a guide, some common problems have been listed, with their possible causes and treatment. It is impossible to list every problem as every client is different but understanding of the system, its basic chemistry and the anatomy and physiology of the nail should provide the technician with the tools to reach a logical conclusion. The solution to these problems is often termed 'contra-actions' as they are actions taken in response to a condition or situation.

Sometimes, when a client returns, it is obvious that the aftercare advice she was given has not been followed, even if she says it has. It is usually obvious when a client has been picking off the overlay as some of the nail plate will have gone with it. If the overlay has gone and the nail plate is perfectly clean, then there has been a problem with the preparation.

The Following Scenario Is an Example of Many of These Signs

1 The recommended time for a maintenance treatment has been ignored. The new nail growth can be seen to halfway up the nail.

2 The remaining overlay has been picked off and the damage to the nail plate can be seen.

3 The length has been lost. This may be due to the artificial nail being out of balance and it broke off or it may be due to more picking!

Some more examples of problems experienced at maintenance treatments and their probable cause



Chipping at the free edge and overdue for infill



Nail needing a rebalance (notice growth in Zone 3 and nail growth at free edge, minimal lifting)



Slight lifting in Zone 3 (solution=prep)



Missing nail – client damage

Discoloration Under Nail Plate at Free Edge: White

- This indicates nail separation and may be due to a number of different reasons. The correct treatment would be to remove all products and if the condition were very minor wait and see if it improves. However, with experience, it may be possible to decide whether it has occurred owing to a very thin nail plate that may have been caused by over buffing previously (either by a bad technician or the client). A thinned nail can break the seal at the hyponychium, and this can allow bacteria to enter under the nail plate. If the nail is kept clean and without product, the nail plate should reattach itself in time and then artificial nails may be reapplied. A pharmacist should be able to suggest what will keep the area under the nail clean.

- A white area under the nail plate could also indicate nail separation that has allowed in bacteria or fungus. This must always be referred to a GP and the products removed.

- A further possibility could be a reaction to the products, either as an allergy or too much dehydration or as a result of a badly fitting tip putting too much stress on the nail plate.







In all cases the products must be removed.



Skin Reaction

If there is any irritation of the skin, such as itching, swelling, redness or a rash anywhere on the body – but especially on the hands, fingers, or face – the products must be removed immediately.

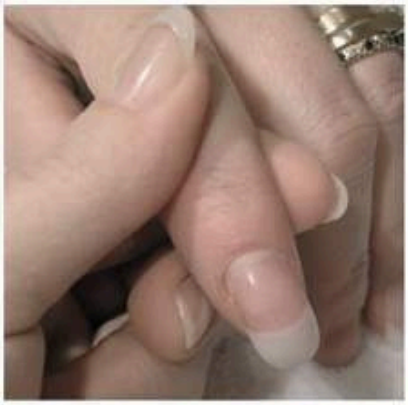
If this is done as soon as any slight reaction is noticed, the condition will stop. (It is very rare, but possible, that a severe reaction occurs suddenly without a warning.) The reaction will stop as soon as the irritant is removed. If acted upon quickly, the irritation will be mild and clear up quickly. If it does not stop within 24 hours or gets worse or if the reaction is more severe, then the client should visit a GP as soon as possible. This is an allergic reaction to one or more of the products or their ingredients. (If the reaction does not stop after all products have been removed, it is possible that it occurred as a result of another allergen that has nothing to do with the nails.) If the client wants to wear artificial nails after this (and many do) it is possible to slowly reintroduce some products by way of a patch test or a test nail to see which product or products must be avoided.

If a technician does not act responsibly and follow these guidelines, the condition may become serious and could result in permanent damage to the client's skin or nails. This could result in litigation, where the technician is held responsible if the correct advice was not given and the correct procedure was not followed. Public and product liability insurance will not cover a technician who has not acted in a professional manner and followed accepted industry guidelines.

The Maintenance Treatment

Once any problems have been addressed and notes made on the record card, the maintenance treatment can begin. The equipment required is exactly the same as for the first application. Any artificial nails that are missing will need to have a tip replaced in the same way as previously described.

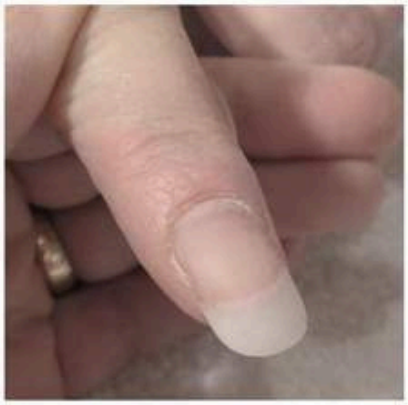
POWDER AND LIQUID INFILL



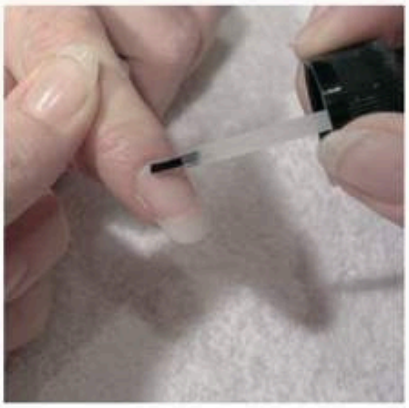
(1) Assess the nails



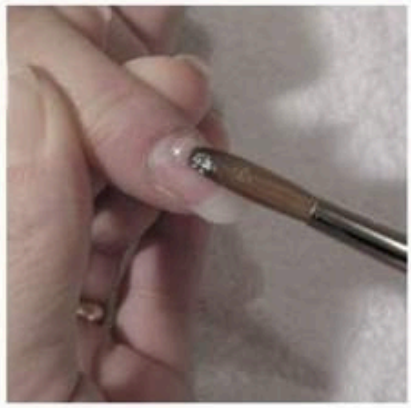
(2) File the overlay to refine the old overlay and remove any lifting



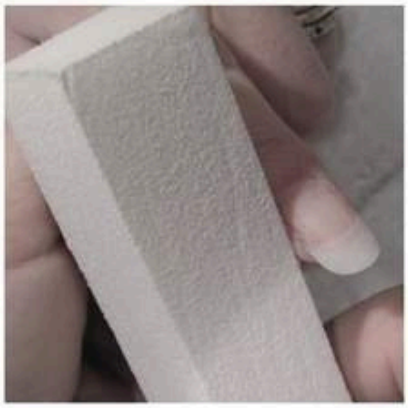
(3) Prepared nail after filing



(4) Apply primer to exposed nail plate



(5) Apply bead to Zone 3 and shape, blending into nail



(6) Refine shape



(7) Buff nail and apply oil



Finished nail

Rebalance

PROCEDURE FOR REBALANCE

1 Follow steps 1-4 as above (1).

5 Shorten the length of the nail to the length and shape that was originally agreed.

6 Thin out the whole overlay, removing the apex so that the remaining overlay is a thin and even coating (2). Ensure that the tip of the free edge is very thin as, by shortening the length, the free edge will be thicker than the original tip and this will need thinning. (As the overlay is old, a harsher abrasive may be used to speed up the process, but care must be taken that the exposed natural nail is not buffed, and the overlay is not buffed down to the nail plate by mistake.)

7 Clean nails with the dehydrator to remove all the dust and prepare the exposed nail. Prime if required (3).

8 Apply a new overlay in exactly the same way as the original overlay was applied (4) and (5). (If it is a fiber system and the original fiber has not been disturbed, it is not necessary to apply the fiber to the whole nail as it will get too thick as time goes on. A small piece of fiber placed in Zone 3 will be sufficient.)

9 Shape, refine and bring to a high shine as usual (6)-(8).

Backfill

PROCEDURE FOR FILLS



1. PREP THE NAIL FOR AN ACRYLIC BACKFILL. PUSH THE CUTICLE BACK AND REMOVE ANY DEAD SKIN. THEN, TAKE AWAY THE SHINE OF THE NATURAL NAIL WITH A BUFFER.



2. USING AN E-FILE AND A STANDARD MEDIUM BIT, REMOVE THE SHINE OF THE ENHANCEMENT AS WELL AS ANY LIFTING, AND FILE TO THE CLIENT'S DESIRED LENGTH. THEN, USING A HAND FILE, REFINE THE SHAPE OF THE SIDEWALLS AND FREE EDGE.



3. TO HELP THE ACRYLIC BOND AND ADHERE TO THE NAIL, APPLY ONE COAT OF DEHYDRATOR, FOLLOWED BY ONE COAT OF PRIMER, TO THE ENTIRE NAIL.



4. USING A REVERSE TECHNIQUE, THE PINK ACRYLIC IS APPLIED FIRST. APPLY A BEAD OF COVER PINK TO THE NAIL, COVER THE NATURAL NAIL AND CREATE A NEW SMILE LINE. WAIT FOR THE ACRYLIC TO FULLY CURE BEFORE MOVING TO STEP 5.



5. REFINE THE SMILE LINE WITH AN E-FILE AND A STANDARD MEDIUM BIT. (NOTE: USE ZONE 1 OF YOUR BIT TO CUT INTO THE SMILE LINE.) THEN, USE A 100/180-GRIT HAND FILE TO SHARPEN THE SMILE LINE, MAKING SURE THAT THE EDGES ARE EVEN.



6. NEXT, APPLY A BEAD OF WHITE ACRYLIC TO CREATE THE FREE EDGE.



7. ONCE THE ACRYLIC IS CURED, REFINE THE SURFACE OF THE NAIL WITH AN E-FILE, STARTING AT THE CUTICLE AND WORKING YOUR WAY TO THE FREE EDGE. BE SURE TO BEVEL THE PRODUCT NEAR THE CUTICLE TO BE FLUSH WITH THE NATURAL NAIL.



8. THEN, USE A HAND FILE TO SHAPE THE SIDEWALLS AND FREE EDGE, AND TO GO OVER THE SURFACE OF THE NAIL A SECOND TIME. THE NAIL SHOULD GRADUATE FROM THINNESS TO THICKNESS TO THINNESS EVENLY, FROM CUTICLE TO FREE EDGE AND FROM SIDEWALL TO SIDEWALL.



9. BUFF THE ENTIRE NAIL AND WIPE OFF ANY DUST. TO FINISH YOUR ACRYLIC BACKFILL, APPLY TOP COAT.

ALTERNATIVE PROCEDURE FOR FILLS

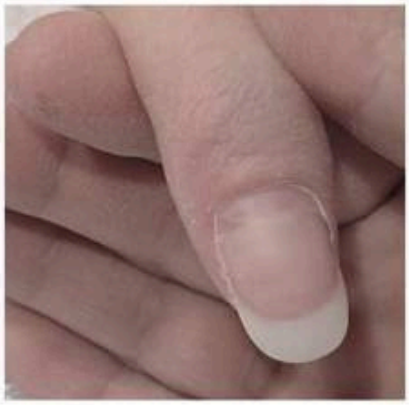
Deal with one hand at a time for liquid and powder

1 Have the desk prepared and all tools, equipment, and products ready plus the record card completed with notes from the consultation at the start of the appointment
2 Sanitize hands.
3 Sanitize and dehydrate nails with appropriate product on a nail wipe or cotton wool by wiping the whole nail from the tip towards the nail fold.
4 With cuticle tool, remove any cuticle that is on the newly grown nail.
5 Using a 240-grit file, gently blend the edge of the overlay in Zone 3 (2). This will also remove the shine. If there is any lifting of the overlay in this area it will need to be buffed away, carefully and without over buffing the nail plate. This can sometimes be time-consuming as more overlay can lift as it is being thinned out. There is no real safe shortcut to this process. Many technicians use some shortcuts such as nipping with cuticle nippers (this can lift away overlay that is bonded to the nail and take some nail plate with it) or getting adhesive to run under lifting area (this could trap any bacteria that may be present) or using a solvent in the expectation that it will deal with any bacteria or fungus (the solvent can get trapped and the area will still be unattached).
6 The shine should be removed from the whole nail surface .
7 Remove the dust with the dehydrator, taking care to clean around the side walls and nail fold, and apply primer if required.
8 Apply a thin layer of the product (liquid and powder, UV gel or resin) in Zone 3 as in the original application and blend it to the rest of the nail.
9 With a 240-grit file, shape the overlay as in the first application, checking from all angles that the structure of curves is right.
10 Refine surface with white block.
11 Finish with a three-way buffer or high-gloss sealant (after removing all traces of dust). Apply oil.

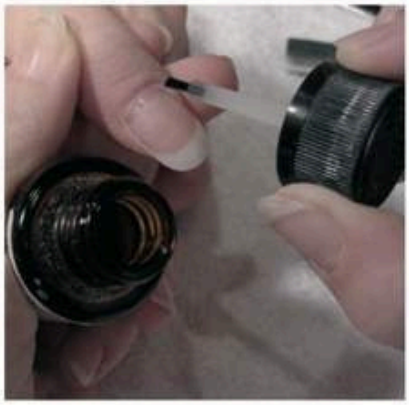
POWDER AND LIQUID REBALANCE



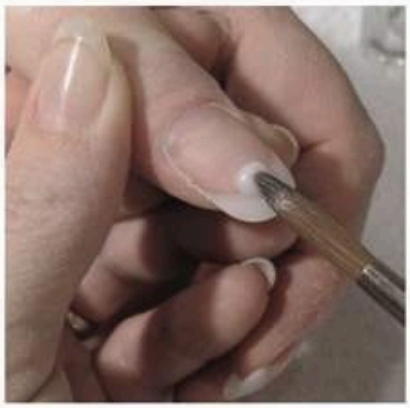
(1) Assess the nails



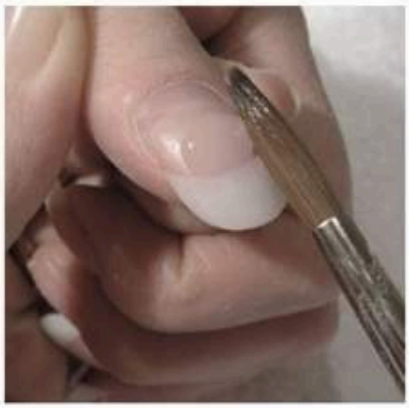
(2) Prepared nail with overlay removed to thin layer



(3) Apply primer to exposed nail plate



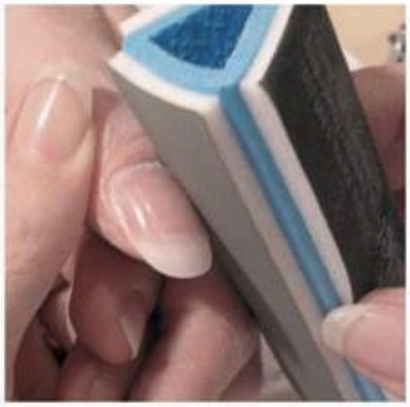
(4) Apply bead to Zone 1 and shape checking 'C' curve



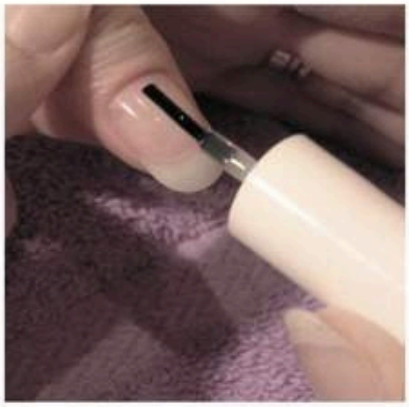
(5) Apply bead to Zone 2 and shape Zones 2 and 3 checking structure



(6) Shape and refine the shape and surface



(7) Buff nail and apply oil



(8) Finished nail

Self Assessment

OPPORTUNITIES TO LEARN

It is at the maintenance stage that the trainee technician can learn a great deal. Obviously teaching and coaching by a good trainer are essential, but the beginner can continue to improve every time a client is seen without the trainer present. This can be done by self-assessment. A dedicated technician will carefully assess their work as there is always room for improvement, but this will probably be done in an informal and basically unstructured way.

Many professional and dedicated technicians enter competitions to help them improve their standards. A good person to assess 'nails' is an experienced technician who will study them from an objective viewpoint. At the end of any competition the judges are available for a 'critique' and the best technicians will take this opportunity happily. They do not go to 'argue about the score' but they go to find an objective opinion about their nails. They may agree or they may disagree, but there is a good chance that an experienced and objective judge may see something that the technician has missed, usually because the technician is looking too hard!

Good technicians will also go to the many workshops and seminars held by various companies and trainers. They may learn something new that will improve their skills, or an assessment on their performance may be available that will prove to be useful.

Beginners need to develop many skills and they also need to cultivate an 'eye' for balance and symmetry. A beginner should never miss an opportunity to improve their skills and should see every client as an ideal opportunity.

A SELF-ASSESSMENT PROGRAMME

The following is a suggestion of how a trainee or beginner (or even an experienced technician dedicated to improvement) can carry out an effective self-assessment. The self-assessment should be used in conjunction with a record card, and it assumes that the first application is as good as the technician is able to achieve at the time.

FIRST MAINTENANCE

Describe each section of each nail (Observation):

(a) shape on looking down onto nail
(b) shape from sides
(c) shape of barrel
(d) smile line
(e) clarity of overlay
(f) Zone 3

Client's responses (Questioning):

(a) How did the nails break? (If appropriate!)
(b) How have you managed with them?
(c) Have you followed all homecare advice?
(d) If not, what has been missed?
(e) Do you like the length and shape?
(f) Have they caused any problem?

Correction of any present problems (Diagnosis and treatment):

(a) shape
(b) breakages
(c) clarity of product
(d) lifting
(e) chipping
(f) allergic reaction or infections

Finished nails (this section does not need recording, just careful observation):

(a) free edge shape - each nail and in comparison, with each other (b) upper arch - each nail and in comparison, with each other (c) lower arch - each nail and in comparison, with each other (d) 'C' curve - each nail and in comparison, with each other (e) smile line - each nail and in comparison, with each other (f) clarity - each nail and in comparison, with each other (g) free margin - each nail.

SECOND MAINTENANCE

As with the record of first maintenance, look at and ask all the same points. Compare results and determine if problems have been solved and results improved. If this is not the case, make a note of what is not right as before and complete a full self-assessment.

Nail Diseases

NAIL DISEASES AND DISORDERS

There can be a great deal of confusion among technicians about the various nail diseases and disorders that may be seen on clients' fingers. Educators and information from various companies has been at best confusing, and at worst, contradictory. Even one of the most popular textbooks on the subject of nail technology contradicts itself in different chapters! How can technicians who want to do the right thing know what is the right thing to do?

There is one common and one not so common condition that technicians are likely to see during their career and available information can be confusing.

GREEN NAILS

This condition is likely to be seen by most technicians at some point but, hopefully, not too often. It is usually seen during maintenance visits or may come with a new client who has been going to another technician.

What Type Of 'Green Nails'?

At this stage it is important to describe exactly what type of 'green nails' we are dealing with. Is there a yellow/green stain on top of the nail plate but under an artificial overlay of any description? This stain is always associated with an area where the overlay has lifted from the nail plate, usually in the cuticle or side wall area and sometimes on the free edge of the natural nail plate. This type of green nail is not connected with any discoloration under the natural nail plate on the nail bed, nor is it connected with a green nail plate that has never had an artificial nail applied to it.

The differentiation between these various conditions is essential and is often where the confusion lies. An important aspect of the nail technician's knowledge and practice is to recognize skin and nail conditions, but never to diagnose them.

Technicians are not medically trained, and dermatologists would have difficulty diagnosing genuine medical conditions without carrying out tests. Confusion with these conditions always seems to involve the words 'bacterial', 'fungal', 'mold' and 'yeast'. The next confusion is whether a technician should treat the condition, send the client to a doctor, apply nails, not apply nails, take nails off, leave everything alone to let it go away of its own accord.

This condition, as described, will always be associated with a lifting artificial nail overlay. (If the discoloration is trapped under the overlay, it will usually mean that the client, or technician, has reattached the overlay by letting nail adhesive seep under.) A lifted overlay provides an ideal environment for a certain type of bacteria to find a home, settle down and multiply!

The environment is warm and moist with the water that has seeped in. It also has very little oxygen and does not get disturbed. As the first little bacterium starts to multiply it has a yellow 'metabolic by-product', but as more and more bacteria are created, the yellow colour darkens to green and, if left alone, it will eventually appear black. The nail plate can start to become soft, and the nail bed can become tender as the bacteria colony breaks the nail plate down and eventually destroys it.

A good technician will make sure that clients are seen at regular and appropriate intervals. New clients should be seen no more than two weeks apart until the technician and client know exactly what to expect from artificial nails. The best technicians will sometimes experience a little lifting on clients' nails, especially new clients. If rebooking and client education is carried out properly then any sign of trouble will be detected before it becomes a major problem.

TREATING A BACTERIAL INFECTION

If a client returns for a maintenance visit and there is a patch of yellow under a corner of the overlay, that is the beginning of a bacterial infection. It should never be any more than a pale yellowy-green if the client has returned for the correct appointment or understands that any change in the appearance of the nails needs an immediate return visit. The experienced technician can treat this condition, as it is mild and not necessarily infectious.

The artificial nail must be removed. If the natural nail is hard, very gently buff with a few strokes of a fine grit file. This may remove the colour but do not buff anymore if the colour remains (it is safest to discard or disinfect the file).

If the nail feels soft where the stain is, do not replace the artificial nail for a few weeks. After gentle buffing, dehydrate the nail plate with an alcohol- based dehydrator. This will remove the bacteria and take away the environment it needs to survive. A new artificial nail can now be applied. The yellow colour will probably remain slightly and grow up with the nail plate as it is a stain. If the stain changes in shape or colour, the bacteria are still active, and the process was not carried out effectively and must be repeated more thoroughly.

Some technicians recommend that the stain is removed using a mild bleaching agent. As these are water-based it is better to leave the stain to grow out, as soaking the nail plate in water and another chemical may cause a further problem with lifting and soft nail plates as the water is trapped under the overlay. This treatment should not be carried out if the technician is not totally confident that the cause of the problem is as described. Nor should it be carried out if the infection has progressed further than a pale green colour or the nail plate is very soft. If this happens, the artificial nail should be removed in a tip remover and not replaced. If the condition continues to spread or does not start to improve in a few days, the client should go to their doctor.

Other types of bacterial, fungal or yeast infections are very rare on the fingernails. They are more common on the toenails, as the toes spend a lot of their life in the warm, moist condition of a shoe.

It is possible to have these conditions on a fingernail and, depending on the type, they can affect the nail plate, the nail bed and the soft tissue surrounding the nail. A technician must never diagnose any of these conditions and the golden rule is: 'When in any doubt, don't.' Only a dermatologist who has carried out tests can accurately diagnose a genuine infection and such infections are very rare. They also take a long time to clear once diagnosis has been made.

WHITE SPOTS ON THE NAILS

The second condition that a technician may see and is likely to be confused about is a fungal infection that creates white spots on the nails. It is more common on the toenails, but it can affect the fingernails.

I am sure every technician has had a client with a couple of white spots on their nails who says, 'I know this is a lack of calcium'.

I hope every technician has also answered that it is very unlikely that it is a lack of calcium. It is most likely that they are little patches caused by trauma to the nail plate. The whiteness is caused by the nail plate layers parting slightly. If a client suffers from a lack of an essential mineral like calcium or zinc, there are likely to be other symptoms and the last of their worries would be spotty nails!

It is possible, however, to confuse this very common condition with a more serious (but rare) fungal infection. If the nail has white spots or areas that appear soft and chalky on the surface of the nail, it is possible that the client has a fungal infection called leukonychia mycotica, and this can be easily spread by buffing. This condition does not always appear on every nail and can run along a ridge rather than be a spot.

As for all conditions, the technician must not diagnose but should recommend, without scaring the client, that they should see a doctor. In the greater scheme of things, this infection is not serious, but it is contagious and can spread to other nails, the technician, and other clients. It is also not very pleasant for the client who has gone to a technician to improve the appearance of their nails. They want nice nails, not white crumbly ones (or green ones), and it should be within the expertise of the technician to point them in the right direction to achieve their aim.

Removal

THE REMOVAL OF ARTIFICIAL NAILS

There are many occasions when it is appropriate to remove artificial nails, for example:

- The client wanted long nails for a short time only
- The natural nail has grown to a length the client is happy with
- The regular maintenance required is not possible for the client
- The client has had a set of nails applied by someone else
- There is a problem with the nails e.g., allergic reaction, infection, etc.

LIQUID AND POWDER

- Remove any coloured varnish
- Pour enough acetone into a small metal bowl (or one suitable for solvents) to just cover the nails
- Place bowl in a larger bowl of warm (not hot) water
- Make sure the client is seated comfortably, preferably at a desk (holding bowls of acetone on laps can result in accidents!)
- Ask the client to place their fingers in the acetone and cover the bowl and the client's hands with a towel to prevent vapors escaping process). This time may be longer due to the thickness of the overlay and temperature. Artificial nails that have MMA as the monomer will take a lot longer.
- The resin used in the fabric system will take only 10–15 minutes
- Do not remove the nails before the process is complete, as the product will harden immediately and then take longer
- When all the products have gone from the nail, remove the fingers and dry them
- Apply nail oil to the nails and fingers as they will look very white and dry
- Buff the nails to give them a shine
- If artificial nails have been worn for a long time, the natural nail may feel a little weak.
- Two or three layers of a strengthening topcoat (not hardener) will help protect them until they become stronger, which will take a couple of days.

Summary

THIS MODULE HAS DEMONSTRATED THE VALUE OF A REGULAR MAINTENANCE PROGRAMME FOR THE HEALTH OF A CLIENT'S HANDS AND OUTLINED HOW THE TECHNICIAN SHOULD APPROACH SOME OF THE MORE COMMON DISEASES AND DISORDERS THAT MAY BE ENCOUNTERED WITH A CLIENT. 'MAINTENANCE' OF THE TECHNICIAN'S EXPANDING SKILL BASE IS NO LESS IMPORTANT, AS THE SELF-ASSESSMENT EXERCISES MAKE VERY CLEAR.

Assessment

ASSESSMENT OF KNOWLEDGE AND UNDERSTANDING

- How is the structure of the artificial nail affected after 2-3 weeks' growth?

- What is the difference between an infill and a rebalance treatment?

- Why is it important that clients return for regular maintenance treatments? Name four reasons for the overlay to lift in Zone 3.

- Why is effective communication important during maintenance treatments?

- Why is homecare advice essential and what are the main points to be covered?

- What would you do if discoloration was noticed under the overlay?

- Under what circumstances would you remove artificial nails?

- Why are maintenance treatments an excellent time for learning?

- How would you remove: a. liquid and powder nails?