Skin Boosters Training Manual

Ammonite Beauty

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Contents

Welcome to...

Ammonite Beauty

With over 40years experience in the beauty industry , I've dedicated my career to helping people feel confidence and empowered to be the very best version of themselves. As both an experienced therapist and educator, I am passionate about ongoing learning and embracing new technology and technologies, while maintaining high standards and commitment to excellence.

My mission has always been clear:
to uplift others through expert treatments, thoughtful guidance, and educations that inspires. Whether I'm working hands-on with clients, or training the next generation of beauty professionals, I bring a blend of experience, empathy and up-to-date knowledge that makes a real difference.

Your beauty and aesthetics journey starts here and I look forward to helping you achieve your training goals.

Aims & Objectives

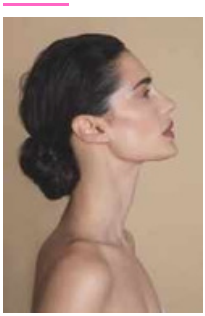
This course aims to ensure you; the student understands the basics of health and safety and anatomy and physiology of the treatment. This manual covers the treatment background, benefits, consultation and contra-indications, contra-actions, aftercare and equipment and products required to perform the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

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

INTENDED USE

TISSUE REMODELING AND IMPROVEMENT IN SKIN LAXITY

FACE



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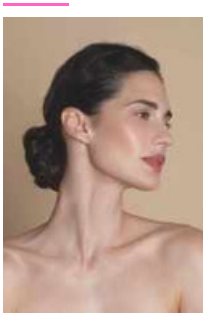


BODY

Medical Disclaimer

It is advised that you take medical advice if you or any of your clients have a health problem. Remember as a practitioner you are not qualified to diagnose medical conditions, but you do need to be able to recognise when the client needs referral to a medical professional

Introduction

Skin boosters are essentially vitalizing dermal fillers that revitalize the skin, improving its appearance, texture and slows down the ageing process from within. The treatment involves hydrating microinjections of a soft, gel-like substance called Hyaluronic Acid (HA) into the skin, which improves the skin's elasticity, firmness and radiance.

Skin boosters increase the levels of hyaluronic acid in the skin and also stimulates the production of collagen, which in turn improves fine lines and wrinkles, producing firmer skin. Skin boosters can be used to treat many different skin areas. The most common is the face, followed by the neck, décolletage and dorsum of the hands.

HOW IT WORKS

Each treatment involves a series of hydrating micro-injections of long lasting stabilised hyaluronic acid gel to deliver immediate and lasting hydration and plumpness to the skin. This hyaluronic acid is soft and absorbs water and brings deep skin hydration to the treated areas, giving it improved firmness, elasticity and smoothness. A course of few treatments a year is recommended to maintain the result.

Skin Anatomy

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

S Sensation The main sensory organ for temperature control, pressure, touch and pain.

H Heat Regulation The skin helps to regulate the bodies temperature by sweating to cool the body down when it overheats and shivering when the body is cold.

A Absorption Some creams, essential oils and even much-needed water can be absorbed through the skin.

P Protection Overexposure to UV light may harm the skin; the skin protects itself by producing a pigment, called melanin, which we see when we tan.

E Excretion Waste products and toxins are eliminated from the body through sweat glands.

S Secretion Sebum and sweat are secreted onto the skin's surface. The sebum keeps the skin lubricated and soft, and the sweat combines with the sebum to form the acid mantle.

Bacteria and germs are also prevented from entering the skin by a protective barrier called the Acid Mantle. This barrier also helps to protect against moisture loss.

V Vitamin D Production Absorption of UV rays from the sun helps with the formation of Vitamin D, which is needed by the body for the formation of strong bones and good eyesight.

The Epidermis

This is the outermost layer of the skin. There are various layers of cells within the epidermis, the outermost of which is called the stratum corneum (or horny layer). The layers can be seen clearly in the diagram of the skin.

The surface layer is composed of twenty-five to thirty sub-layers of flattened scale-like cells, that are continually being exfoliated off by friction and replaced by the cells beneath.

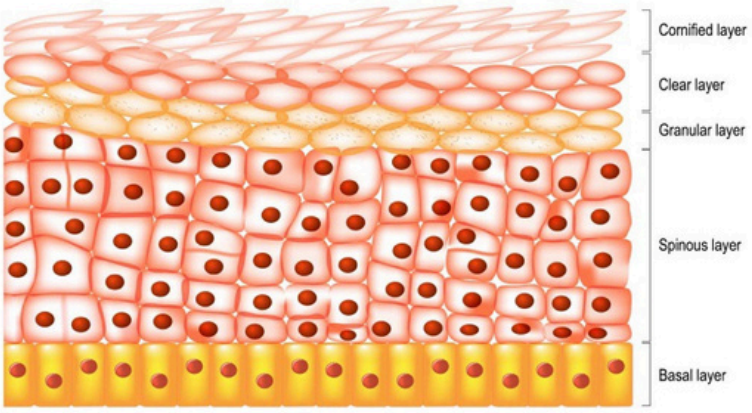
The surface layer is considered the real protective layer of the skin.

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

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

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

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



the epidermis
Dermis Layer

The dermis is a tough and elastic layer containing white fibrous tissue interlaced with yellow elastic fibers. The dermis is an expanse layer and contains:

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

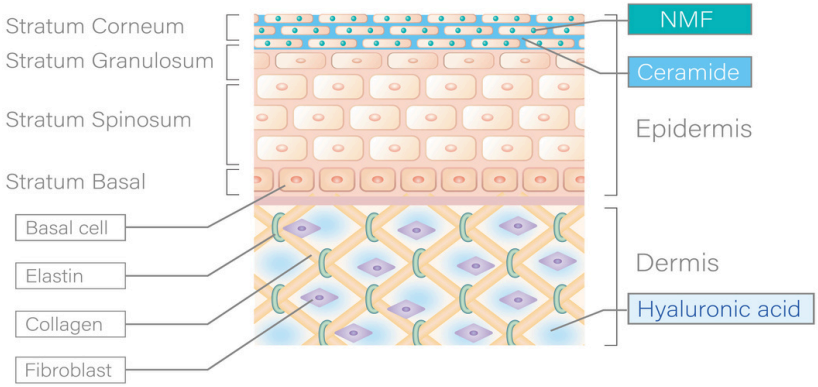
Subcutaneous Layer

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

The Skin

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

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



The stratum corneum is made up of corneocytes and lipids and is referred to as the epidermal barrier. It functions as an evaporative barrier that maintains the skin's hydration and suppleness and protects the body from microbes, trauma, irritants, and UV radiation by acting as a physical barrier.

Corneocytes contain the skin's natural moisturising factor (NMF), which maintains the hydration of the stratum corneum. Corneocytes are bound together to each other by corneodesmosomes. A lipid bilayer surrounds the corneocytes, which comprise two layers of phospholipids that have hydrophilic heads and two hydrophobic tails. The epidermis requires a constant cell turnover to maintain its integrity and function effectively. Young, healthy skin renews every 28 days, which is the time it takes for the keratinocyte to migrate from the living basal layer of the epidermis to the stratum corneum's surface and desquamate during the renewal process.

Melanin pigment, which determines the skin's colour and causes hyperpigmentation, is primarily concentrated within the epidermis and, in some conditions, is found within the dermis (in cases of melasma). There are two types of melanin pigment, pheomelanin, and eumelanin.

Pheomelanin is yellow to red in color and is found in lighter skin tones. Eumelanin is brown to black in color and is the predominant type of melanin in darker skin types. Melanin synthesis (melanogenesis) occurs when melanocytes in the basal layer of the epidermis.

Fibroblasts synthesize most components of the dermal extracellular matrix (ECM), which includes structural proteins such as collagen and elastin, glycosaminoglycans such as hyaluronic acid, and adhesive proteins such as fibronectin and laminins.

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

Glycosaminoglycans

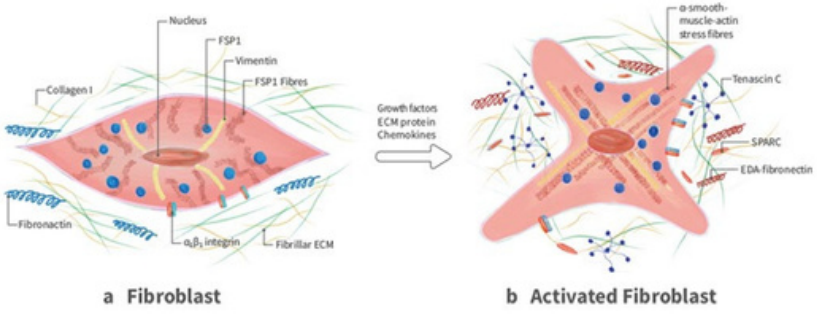
Glycosaminoglycans (GAGs), also known as mucopolysaccharides, are polysaccharides that deal with the support and maintenance of skin structural proteins such as collagen and elastin.

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

Examples of common glycosaminoglycans are chondroitin 6-sulfate, keratan sulphate, heparin, dermatan sulphate, and hyaluronate.
Glycosaminoglycans (GAGs) have widespread functions within the body. They play a crucial role in the cell signalling process, including regulation of cell growth, proliferation, promotion of cell adhesion, anticoagulation, and wound repair.

The GAG's retain water and form a gel substance through which ions, hormones and nutrients can freely move. The main component of this gel is hyaluronic acid, which is a large polysaccharide made of glucuronic acid and glucosamine that attract water and is increased in tissues under repair or growth.

Fibroblasts



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

Elastin

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

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

Collagen

Collagen is an abundant protein; it is the main component of connective tissue and is found not only in fibrous tissue like the skin but also in tendons, ligaments, cartilage, bones, corneas and blood vessels. There are 18 collagen subtypes, 11 of which are in the dermis of the skin.

Types of Collagen

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

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

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

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

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

Immune functions of the skin

Langerhan cells are 'guard' cells, found mainly in the Stratum Spinosum but start in the dermis. They move across the skin and are stimulated to action by the entry of foreign materials, acting as macrophages to engulf bacteria. If someone has a bad immune system, any micro wound treatment will not be as effective.

Skin Colour & Analysis

Skin colouring's & Ethnicity

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

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

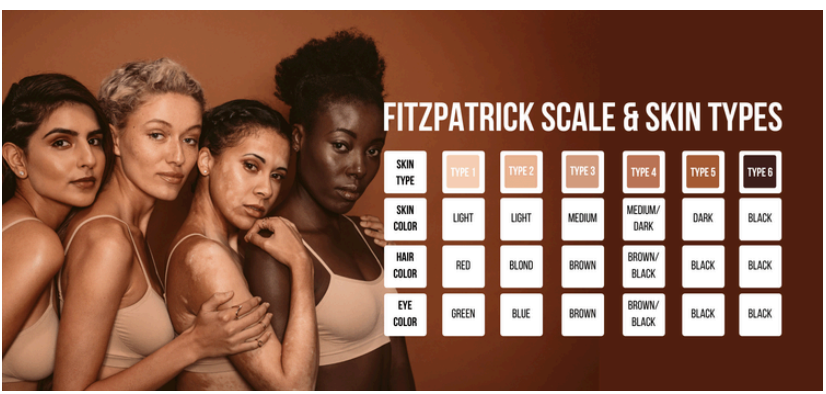


Photo-sensitivity occurs when the skin reacts in an abnormally sensitive way to light from the sun or an artificial source of ultraviolet (UV) radiation, like a tanning bed. Photo-sensitivity generally presents as a rash, it may look like a sunburn or eczema. Blistering may be present and affected areas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

Fitzpatrick Scale

TYPE I: **Pale White Skin**

Almost always burns, never tans

CELEBRITY EXAMPLES: Cate Blanchette & Prince Harry

SPF 30+

TYPE II: **White Skin**

Burns easily but also is able to tan with sunscreen

CELEBRITY EXAMPLES: Jennifer Aniston & Brad Pitt

SPF 30+

TYPE III: **Light Brown Skin**

Sometimes burns, but tans easily

CELEBRITY EXAMPLES: Lucy Liu & Matthew McConaughey

SPF 20+

TYPE IV: **Moderate Brown Skin**

Burns minimally and tans easily

CELEBRITY EXAMPLES: Eva Mendez & Taylor Lautner

SPF 15+

TYPE V: **Dark Brown Skin**

Rarely burns and tans easily

CELEBRITY EXAMPLES: Mindy Kaling & Will Smith

SPF 15+

TYPE V: **Deep Brown/Almost Black Skin**

Never burns and doesn't lose pigment

CELEBRITY EXAMPLES: Lupita N'Ongyo & Don Cheadle

SPF 15+

Skin Ageing

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

Textural changes

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

Pigmentation

- Hyper-pigmentation such as lentigines, darkened freckles, mottled pigmentation
- Hypo-pigmentation
- Sallow discoloration

Vascular changes

- Telangiectasias
- Erythema

Degenerative changes

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

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

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

Skin types & Analysis

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

Skin Type

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

Skin Types are categorised as:

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

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

Dry Skin

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

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

• It feels very rough to the touch.
• Sebaceous filaments are minimal.

Oily Skin

Truly oily skin will have areas that gleam and shine and as opposed to a natural acid mantle texture that's very light and fluid, it will have a much thicker consistency and will feel greasy. There will be true commedones and very large open pores and the skin will be of a much thicker density than dehydrated or dry skins, due to its high lipid content.

Often this type of skin is treated with harsh products that strip the natural protective barrier, so it is not unusual to see sensitivity or dehydration on this skin type. What we need to do is clean the skin gently but efficiently and balance the oil production, using light antiseptic and topical anti biotic formulas help to destroy the bacteria on the skin. Acne may also be present so it is important to restore the barrier first before treating the actual acne, very often by restoring the barrier will reduce acne flare ups.

Depending on the severity of acne present, the treatment should be the same but it may take more time to achieve the desired results for the client, therefore they need to be patient and committed to the treatment programme. Remember if there is only what appears to be a "patch" of acne it most likely to have been caused as opposed to the natural tendency of the skin.

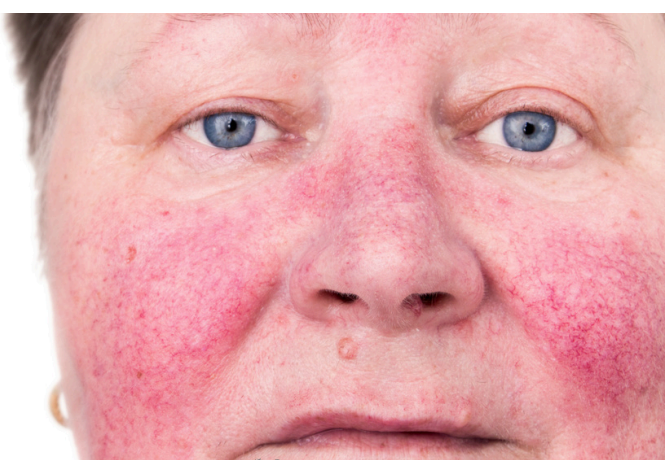
Reactive Skin

Reactive Skin Types

Reactive skin, sometimes referred to as couperose skin, is characterised by temporary or chronic redness that typically appears on the face. This skin type is highly sensitive and prone to irritation, often triggered by external or environmental factors such as extreme temperatures (hot or cold water), digestive issues, physical exertion, spicy foods, excessive sun exposure, and even emotional stress or nervous system disorders.

The visible redness is primarily caused by reduced elasticity in the capillary walls. When exposed to a stimulus, blood rushes to the surface of the skin, causing the capillaries to expand to accommodate the increased flow. In healthy skin, these capillaries then contract back to their normal size once the stimulus has passed. However, if the capillary walls lack sufficient elasticity, they may remain distended, resulting in persistent redness and visible capillaries.

Care should be taken when treating this skin type, not to expose it to extremes of temperatures, products containing vasoconstrictors can also help.



Hyper-pigmentation

Hyper-pigmentation= too much pigment in an area

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

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

Hypo-pigmentation= Lack of pigment in the skin

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

Post-inflammatory hyperpigmentation

History can include infestation, allergic reactions, mechanical injuries (picking acne lesions) or reactions to medications, phototoxic eruptions, burns, bruising and inflammatory skin diseases from eczema/dermatitis family. This type of pigmentation can darken with exposure to UV light and with the use of various chemicals and medications, such as tetracycline, bleomycin, doxorubicin, 5-fluorouracil, busulfan, arsenicals, silver, gold, anti-malarial drugs, hormones and clofazimine.

Dermal pigmentation caused by trauma

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

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

Post-inflammatory hyper-pigmentation can be seen after endogenous or exogenous inflammatory conditions.

Essentially any disease with cutaneous inflammation can potentially result in post-inflammatory hyper-pigmentation in individuals capable of producing melanin.

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

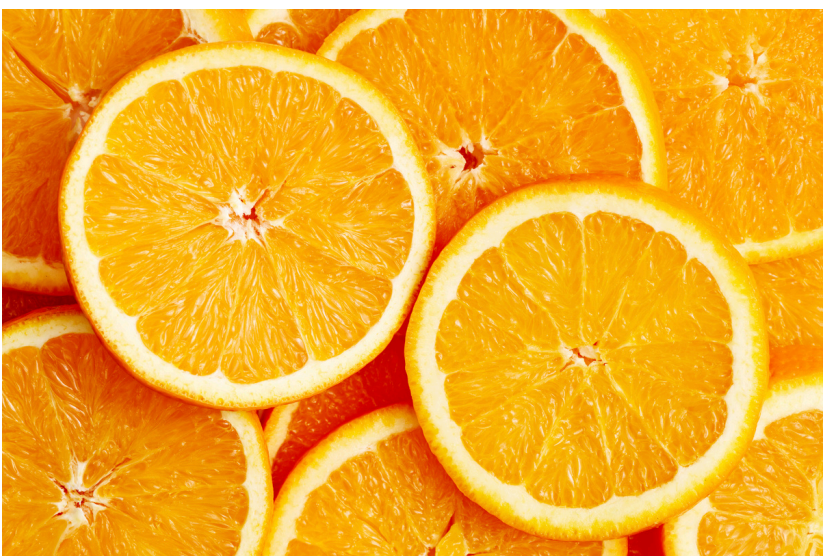
Optimal treatment for PIH includes prevention of further pigment deposition and clearing of the deposited pigment. Chemical peels work best when used in combination with topical bleaching regimens. Laser therapy should be used with extreme caution and care. Given the propensity of darker-skin types to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

Tyrosinase Inhibitors

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

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

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



Male Skin

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

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

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

Mature Skin

Mature clients also present with thinner lips. In the case of total or partial edentulism, there may be moderate to severe alveolar crest atrophy, causing a retraction of the lips and perioral tissue with shortening of the nose-chin length.

Several muscles insert into the modiolus to exert an effect on smiling. Zygomaticus major is stronger in effecting an upwards or zygomatic smile. As the elevators weaken with age, risorius may dominate to cause a more horizontal smile. Eventually, the depressor anguli oris (DAO) may dominate to cause a downwards smile. The zygomaticus minor, levator labii superioris, and levator labii superioris aleque nasi insert into the upper lip.

After passing below the commissure, the facial artery superficialises and divides into superior and inferior labial branches. The superior labial artery penetrates the orbicularis oris to enter the lip, running at the junction of the dry and wet mucosae. The inferior labial artery originates from the facial artery below the commissure, and runs from deep to superficial close to the mucosa. Inferiorly, there is more variation in morphology.

CHIN

The chin lies between the DAO (laterally), inferior margin of the orbicularis oris (superiorly) and mandibular margin inferiorly. African patients have a wider chin, thicker bone, and more prominent lower maxilla.

Asians often present a retracted maxilla and smaller chin. Apart from soft-tissue sagging, aging does not affect the chin area directly. However, anterior protrusion may result due to loss of occlusion in edentulous patients. Although the chin is a relatively safe area to treat, it is important to note the emergence of the mental nerve just below the two premolars of the mandible. In elderly or edentulous patients, the fora- men is usually closer to the alveolar ridge. Injecting the mental nerve may cause permanent dysesthesia, paresthesia, or anesthesia of the lower lip.

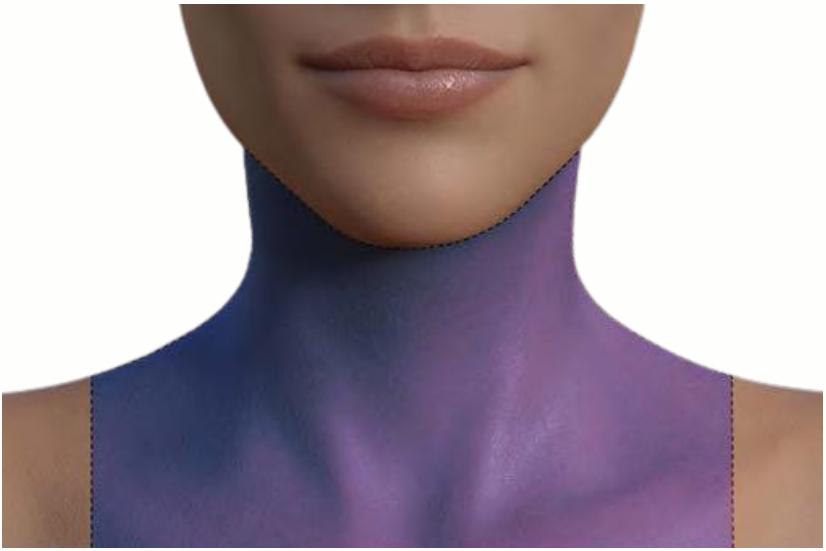
The chin and jawline area.

JAW

The jaw area extends from the DAO (anteriorly) to the temporomandibular joint posteriorly; inferiorly, it is defined by the bony margin of the jawline. There are no technically specific aging changes other than soft-tissue sagging. The facial artery crosses the mandible approximately 1 cm anterior to the anterior border of the masseter. The latter is the strongest muscle in the body.

THE NECK

The neck is defined as the anatomical area originating anteriorly from the inferior surface of the mandible, running to the superior surface of the manubrium sterni. The posterior neck borders are bounded superiorly by the occipital bone of the skull and inferiorly by the intervertebral disc between CVII and T1. The neck is further divided into anterior and poste- rior triangles. The anterior triangle is bounded by the anterior border of the sternocleidomastoid, the midline of the neck, and inferior border of the man- dible. The posterior triangle is defined as the area bounded by the posterior border of the sternocleido- mastoid (SCM), anterior border of the trapezius and, inferiorly, the lateral third of the clavicle. The visible anterior triangle is the predominant focus of aesthetic treatments. With aging, the neck develops increased soft tissue laxity, excess skin, fat accumulation and loss of the cervicomental angle.

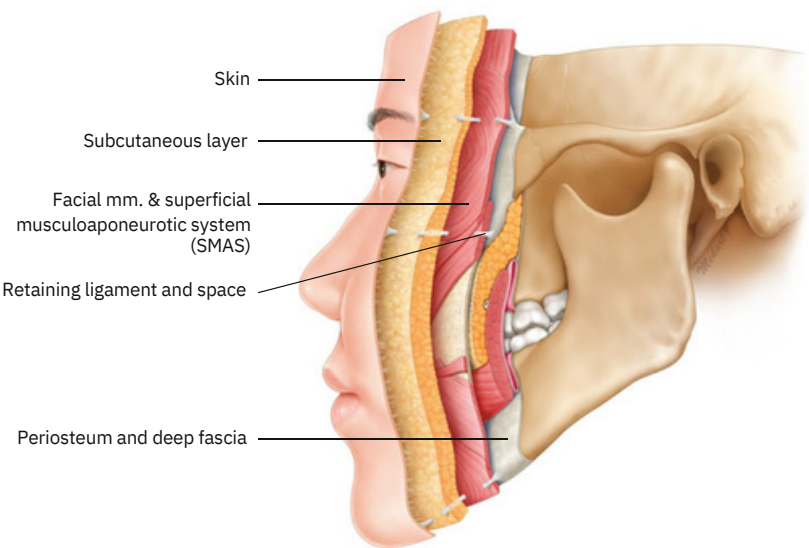


The neck.

Facial Layers

LAYERS OF THE FACE

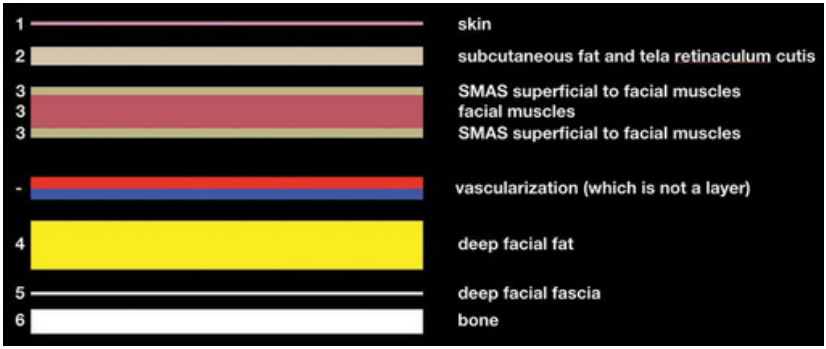
The face, with its diverse ability to portray emotions whilst communicating, is one of the most uniquely recognizable areas of the human body. An increasing interest in facial aesthetics, coupled with considerable research, has extended our understanding of the facial layers and the subtle physical variations resulting from underlying bone structure and genetic factors. With progressive aging, the face undergoes asynchronous changes which may present unique surgical challenges. Insightful understanding of facial anatomy as pertaining to the aging process facilitates treatment planning and predictable outcomes. Traditionally the face has been divided into upper, middle and lower horizontal thirds with the upper face extending from the trichion to the glabella, the mid-face from glabella to the sub-nasale, and lower face.



However, by distinguishing between functional regions and considering the anatomy in terms of a layered construct bound together by retaining ligaments.

Seven major layers may be differentiated:

1. Skin
2. Superficial fat
3. Superficial muscular aponeurotic system (SMAS)
4. Muscle
5. Vasculature
6. Deep fat
7. Bone



The schematic illustration of the facial layers.

Vasculature

Three major arteries originating directly from the external carotid artery or subsequent branches provide arterial supply to the face: the facial, transverse facial, and infraorbital arteries. The facial artery, which is the largest, crosses the inferior border of the mandible just anterior to the masseter, where its pulsation may be felt, after which it travels in a coiled fashion towards the pyriform fossa. It runs from deep on the mandible, over the buccinator, beneath risorius and zygomaticus major, under or over zygomaticus minor, crosses the nasolabial fold from medial to lateral at the junction of the proximal third after which it becomes the angular artery which anastomoses with the superficial temporal artery (STA).

The ophthalmic artery is the major artery supplying the orbit. Originating from the internal carotid artery in the middle cranial fossa, this artery traverses the optic foramen and subdivides into numerous branches inside the orbital cavity.

The superficial temporal artery represents the final branch of the external carotid artery. This artery arises inside the parotid gland at the point where the maxillary artery branches off the external carotid artery. Bilaterally, this artery supplies a large area of facial skin, including the lateral forehead, the temple, the zygoma, and the ear. One prominent branch that stems from the superficial temporal artery includes the transverse facial artery (also originating from the parotid gland).

The forehead is supplied by the supraorbital and supratrochlear arteries (branches of the ophthalmic artery). The nose has a particularly intricate vascular network of tiny arteries within the alae, tip and columella. Most of this is supplied by the lateral nasal artery (originates from the facial artery) or superior labial artery (also originates from the facial artery). The upper lip is supplied primarily by the superior labial artery, while the lower lip is supplied by three labial arteries. The chin's main vasculature is the mental artery (branch of the inferior alveolar artery.

The majority of veins are located close to the similarly named arteries.

After crossing the inferior mandibular border with the facial artery, the facial vein takes a direct path to the medial canthus. The lateral forehead and temporal/parietal regions usually drain via the superficial temporal vein, while the middle forehead and upper eyelid drain via the angular or ophthalmic veins within the cavernous sinus.

Venous drainage of the midface is via the infraorbital vein and pterygoid plexus; certain structures, such as the lips and cheeks drain into the facial vein.

The location, size and origin of the major arteries may vary between individuals and races. With aging, random degenerative changes can occur in individual vessels, including increased diameter, decreased elasticity, and arterial hypertension. These changes can result in elongation and further tortuosity of these arteries.

The facial artery crosses the inferior border of the mandible just anterior to the masseter, where its pulsation may be felt, after which it travels in a coiled fashion towards the pyriform fossa. It runs from deep on the mandible, over the buccinator, beneath risorius and zygomaticus major, under or over zygomaticus minor, crosses the nasolabial fold from medial to lateral at the junction of the proximal third after which it becomes the angular artery which anastomoses with the superficial temporal artery (STA).

Facial Vessels and Their Distribution Patterns

Facial blood vessels are extremely important. As filler injections become more common, blood vessel-related issues, such as skin necrosis and blindness, will become more prominent. Therefore, more in-depth studies on blood vessel pathways in terms of injection techniques are required.

Clinically, facial blood vessels do not follow one specific pattern. Dissections show many variations of this pattern. Furthermore, facial blood vessels contain not only arteries but also veins and their branches. It is impossible to perfectly avoid every single blood vessel during blind injections. However, with enough knowledge of these vessels, it is possible to minimize risks and perform a safe injection.

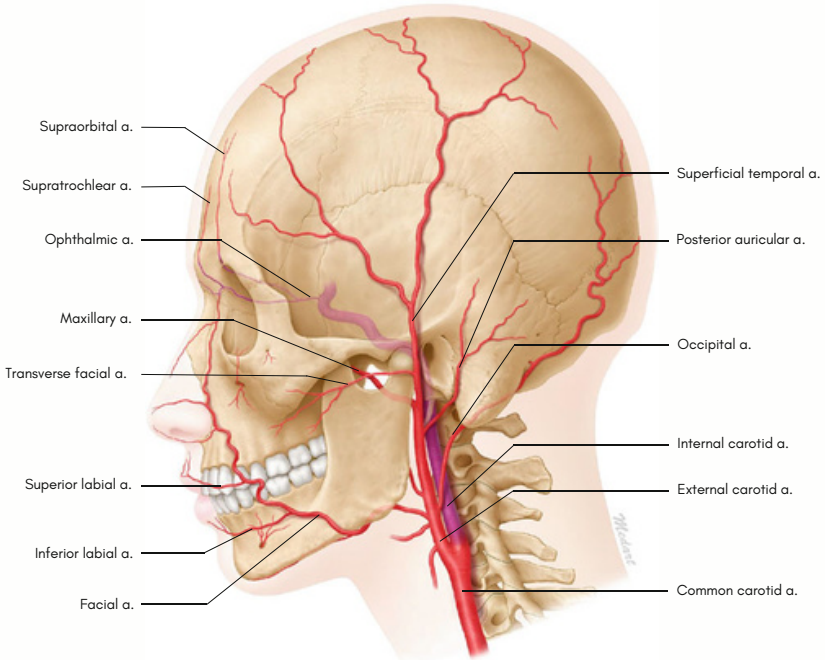
The blood supply of the head and neck is mostly given by the common carotid a. The right common carotid a. and the right subclavian a. are arising from the brachiocephalic trunk. On the other side, the left common carotid a. and the left subclavian a. are arising independently from the aortic arch. At the level of the superior border of the thyroid cartilage, the common carotid a. divides into internal and external carotid arteries. The pulse of the common carotid a. can be felt when touching the anterior border of the sternocleidomastoid m. at the level of the thyroid cartilage.

The internal carotid artery has no other arterial branches except the ophthalmic a. before reaching the brain. The internal carotid a. runs anteromedially through the carotid canal and enters the middle cranial fossa. The internal carotid a. supplies blood to the cerebrum, and a portion enters the orbit area, arrives at the superomedial side of the orbital, and supplies blood to the eye, the orbit, and the lacrimal gland.

The external carotid a. originates from the common carotid a. in the area of the carotid sheath. Although the origin of the external carotid a. lies anteriorly and medially from the internal carotid a., it locates further laterally as it ascends. This artery divides into eight branches.

The facial blood supply is given by the internal carotid a. and the external carotid a. These arteries are accompanied by the corresponding sensory n.

On the superficial layer of the skin, branches of the external carotid a. (facial a., superficial temporal a., facial branches of the maxillary a.) and branches of the internal carotid a. (supraorbital a. branching from the ophthalmic a., supratrochlear a., infratrochlear a.) supply blood to this layer



External and internal carotid arterial system and their branches

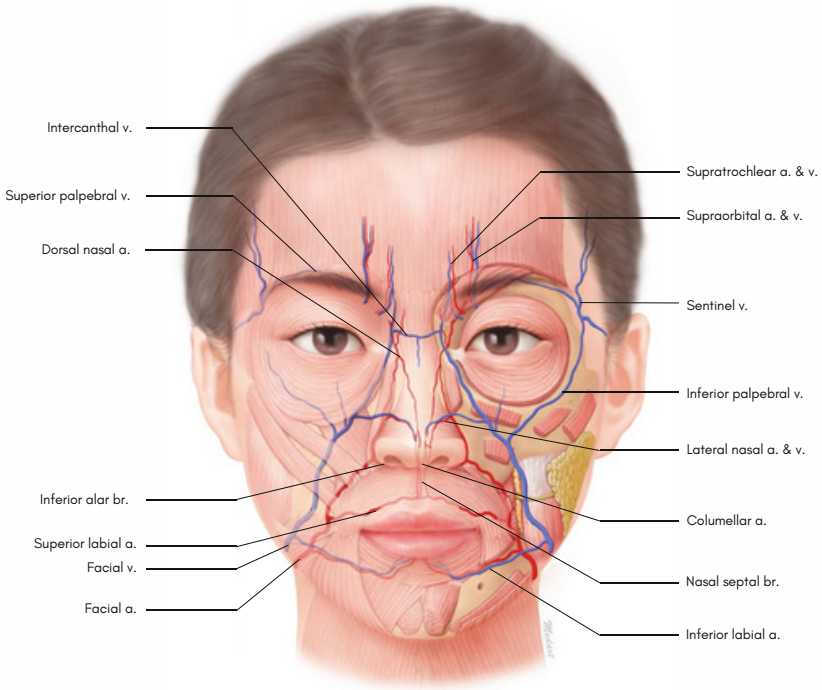
Facial Branches of the Ophthalmic Artery

Supraorbital Artery

The supraorbital a., together with the supraorbital n., originates from the supraorbital notch, or the supraorbital foramen, and supplies the upper eyelid, forehead, and the scalp region.

Supratrochlear Artery

The supratrochlear a. runs more medially than the supraorbital artery and supplies the upper eyelid, the forehead, and the scalp.



General courses and locations of the artery and vein on the face

Dorsal Nasal Artery

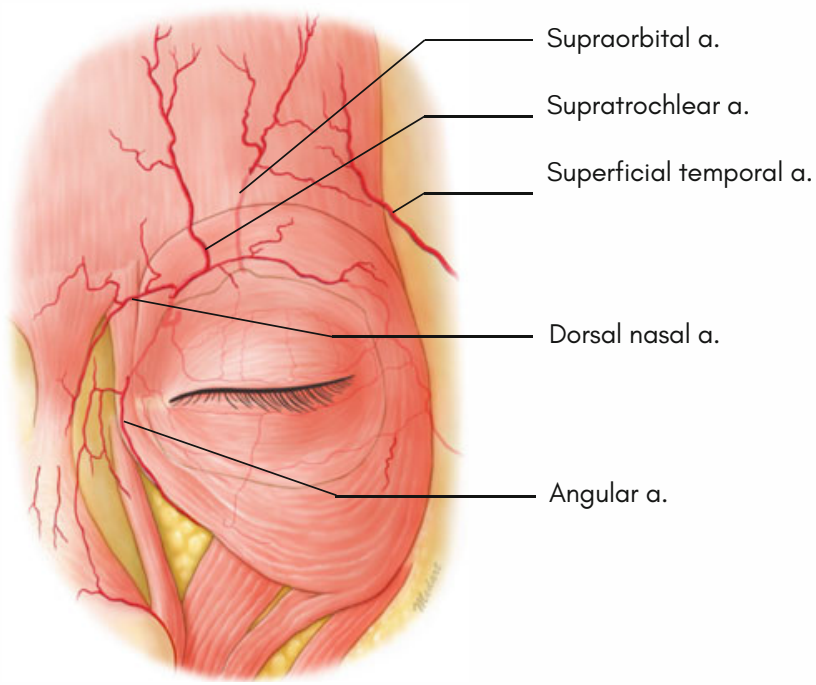
The dorsal nasal a. originates from the medial canthus of the orbit together with the infratrochlear n. and supplies the medial portion of the upper eyelid, the lacrimal sac, and the dorsum of the nose.

Lacrimal Artery

The lacrimal a. is the last, small part of the ophthalmic a. that originates from the lateral side of the supraorbital margin and supplies the lateral side of the upper eyelid.

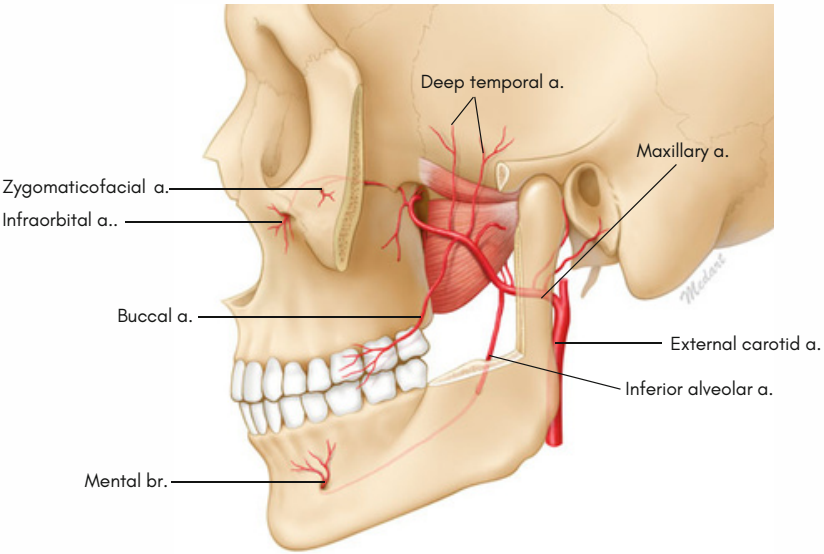
External Nasal Artery

The external nasal a. runs through the junction between the nasal bone and the nasal cartilage. It supplies the intermediate zone of the external nose inferior to the nasal bone.



Periorbital arterial distribution of the ophthalmic artery (internal carotid arterial system) (a, b)

Facial Branches of the Maxillary Artery



Maxillary artery and its branches

Infraorbital Artery

The infraorbital a. exits the infraorbital foramen inferior to the orbit and branches to the inferior palpebral branch, the nasal branch, and the superior labial branch.

Zygomatic Artery

Two branches of the zygomatic a. (zygomaticofacial branch and zygomaticotemporal branch) pass along the zygomatic canal on the lateral wall of the orbit. The zygomaticofacial branch exits the zygomaticofacial foramen and supplies the zygomatic region and the cutaneous layer of the cheek. The zygomaticotemporal branch exits the zygomaticotemporal foramen and supplies the cutaneous layer of the temporal region.

Buccal Artery

The buccal a. runs to the muscle internally between the ramus of the mandible and the masseter m. It branches to the surface of the cheek and supplies the cutaneous and mucosal layer of the cheek and the molar gingiva on the buccal side.

Mental Artery

The mental a. branches from the inferior alveolar a. inside the mandibular canal. It exits the mental foramen along with the mental n. and supplies the chin, the lower lip, and the mandibular incisive gingiva.

Facial Artery

The facial a. branches from the external carotid a., winds through the antegonial notch, passes the masseter m. anteriorly, and runs tortuously to the nasion and the glabella. It is known that the facial a., which runs superomedially through the face, branches to the inferior labial a., the superior labial a., and the lateral nasal a. and terminates as the angular a.

The facial a. is described in many textbooks as running from the mandibular angle to the radix and is in charge of most of the blood supply to the face. The facial a. continues all the way to the angular a. in only 36.3% cases among 91 Korean hemifaces. In other races, the angular a. was observed in 4% of French hemifaces, 12% of Japanese hemi-faces, 22% of Turkish hemifaces, and 68 % of British hemifaces. Although the research presented differences of angular a. occurrences among various ethnicities, the actual cause for that difference is still unclear, because the fractions of populations observed to possess angular a. were quite different between French and British populations despite both of them being Caucasian. What is quite apparent, however, is the fact that general documentation stating that the facial a. proceeds to the angle of the orbit seems erroneous.

Facial a. symmetry is observed in only 30 % of the cases, and regions with sparse blood supply are supplied additionally by branches of the superficial temporal a. (transverse facial a., supraorbital a., supratrochlear a.), branches of the ophthalmic a., and branches of the maxillary a. (infraorbital a., mental a.). The more prominent arteries on the opposite side of the face can also supply these regions.

Facial Artery Branches

Superior, Inferior Labial Branch

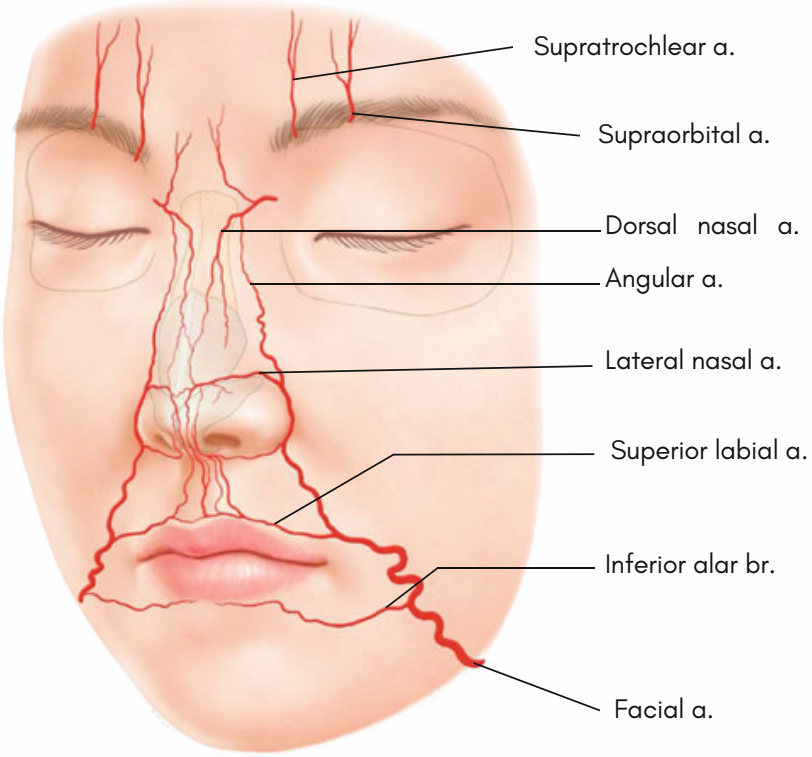
The facial a. proceeds obliquely and superiorly to the angle of the mouth, and branches of the superior labial a. to the upper lip and branches of the inferior labial artery to the lower lip appear.

Inferior Alar Branch

The inferior alar branch divides off from the facial a. immediately adjacent to the nasal ala and runs to the columella. It merges with columellar branches from the superior labial a. and forms an artery that runs through the columella all the way to the nasal tip.

Lateral Nasal Branch

The lateral nasal branch supplies the nasal ala and the nasal bridge,divides lateral to the nasal ala, and runs along the lateral side of the nose. It continues to the nasal branch of the infraorbital a. and the external nasal branch of the ophthalmic a.



General concept about the course of the facial artery. This concept is controversial according to many studies of the facial artery

Angular Artery

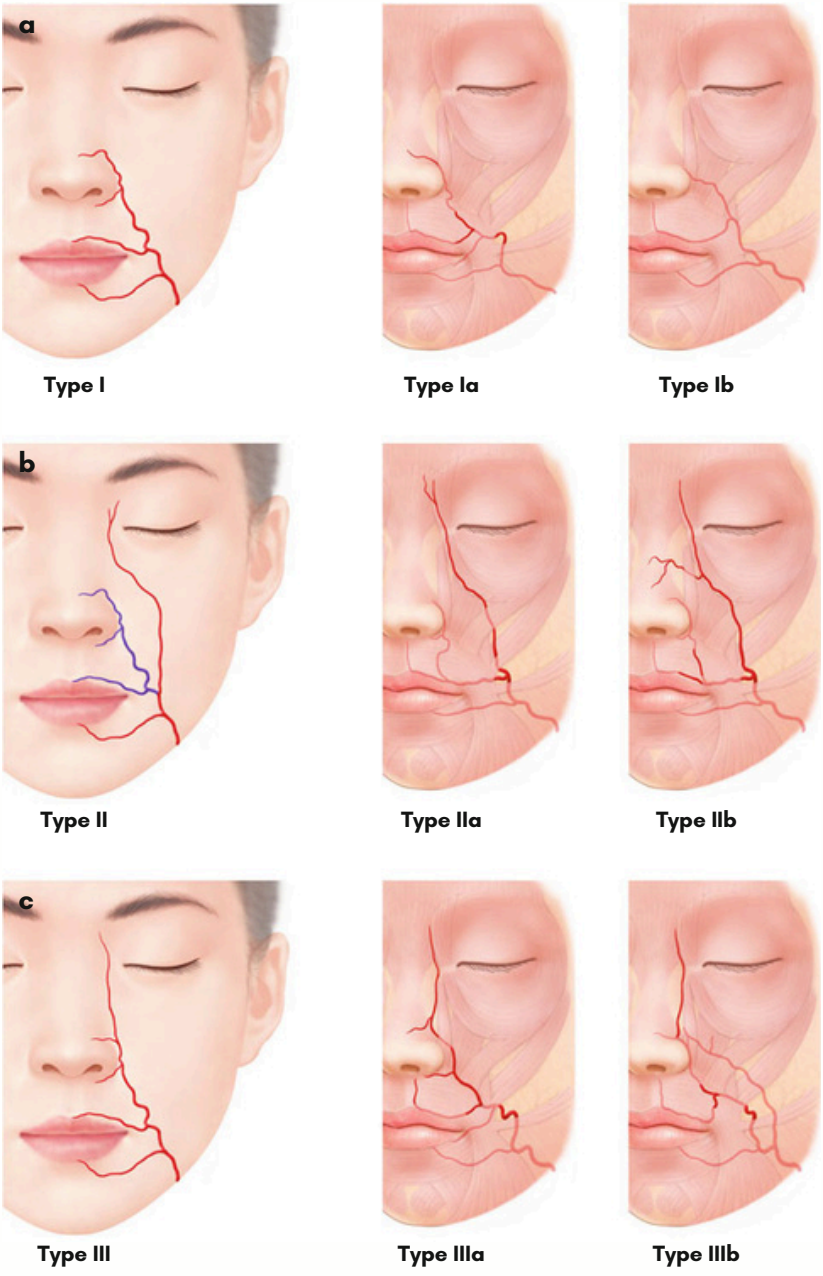
The angular a. is the terminal artery of the facial a. after it branches from the lateral nasal and runs superiorly to the canthus. It terminates at the medial canthus region and branches to the medial side of the eyelid and the nose. The angular a. sometimes branches from the ophthalmic branch rather than from the facial a., but it is observed to be the terminating branch of the facial a. in 51 % of the cases.

Typical Distribution Patterns of the Facial Artery

Branches of the facial are categorised into four types depending on their directions, locations, and supplying regions (lower lip, upper lip, nasal, and infraorbital region). The branching pattern can be generally organized into three categories depending on the region: type I (nasolabial pattern; 51.8%), type II (nasolabial pattern with infraorbital trunk; 29.6 %), and type III (forehead pattern; 18.6 %)

Frontal Branch of the Superficial Temporal Artery

The superficial temporal a. is the terminal branch of the external carotid a. that emerges from the facial side between the temporomandibular joint and the ear and runs superiorly to the scalp. It branches to the transverse facial a. immediately inferior to the ear and is located about 2 cm inferior to the zygomatic arch. The superficial temporal a. branches to both the frontal branch and the parietal branch 37 mm superior and 18 mm anterior from the tragus. The frontal branch runs obliquely toward the forehead and has either one branch (94.8 %) or two branches (5.2 %) that approach the frontalis m. past its lateral border and supply the region. The superficial temporal a. passes the lateral side of the head along with auriculotemporal n. It branches to the transverse facial a. approximately 1 cm inferior to the zygomatic arch, runs superiorly, and divides into the frontal branch, which supplies the lateral side of the forehead, and into the parietal branch, which supplies the parietal region. The transverse facial a. runs anteriorly, merges with the branch of the facial a., and supplies the parotid gland and the cheek.



Three patterns of the facial artery (FA). (a) Type I nasolabial pattern, (b) type II nasolabial pattern with infraorbital trunk, (c) type III forehead pattern (Ag angular a., LN lateral nasal a., IA inferior alar br., SL superior labial a., IL inferior labial a., FA facial a.)

Facial Veins

The facial v. follows the same distribution pattern as the facial a. with a few differences. Typically, the facial v. presents a greater amount of pattern variation than the facial a.

Veins with Cutaneous Nerves and Arteries

The facial v. runs in the direction opposite from the corresponding facial a. Veins of the fore- head, the scalp, and the upper eyelid run to the superior ophthalmic v. on the orbit. The veins of the upper lip, the lateral side of the nose, and the lower eyelid run through the infraorbital v. to the infratemporal region and the pterygoid plexus.

Facial Vein

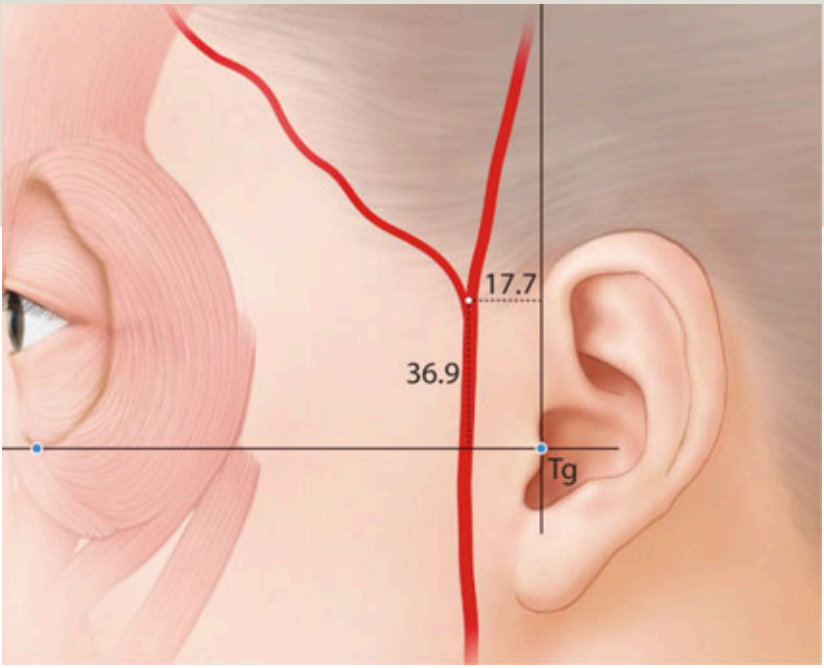
The facial v. parallels the facial a. in most instances. However, it runs more posteriorly than the facial a. and is less tortuous in the opposite direction of the facial a. The facial v. branches as follows.

Angular Vein

The angular v. is formed through the merging of the supraorbital v. and the supratrochlear v. at the canthus. The angular v. branches into two different branches with one flowing into the orbit and continuing to the superior ophthalmic v. and the other proceeding superficially and running inferiorly along the face as a facial v.

Intercanthal Vein

The intercanthal v. has been observed at the glabella and the radix in 71% of the cases and is located along the midpupillary line on the subcu- taneous layer. 63.4 % of the cases showed that the intercanthal v. was observed along the line connecting the bilateral canthus, and the other 7.3 % of the cases showed that the vein was observed inferior to the same line. All the observed intercanthal veins run through the more superficial subcutaneous layer rather than the procerus m.



Frontal and parietal branches of the superfi cial temporal artery

Facial Vein

The facial v. obliquely runs posteroinferiorly toward the mandibular angle, receiving many tributaries.

External Nasal Vein

The external nasal v. originates from the lateral side of the nose and connects to branches of the infraorbital v.

Deep Facial Vein

The deep facial v. connects to the pterygoid plexus in the deep layer of the face.

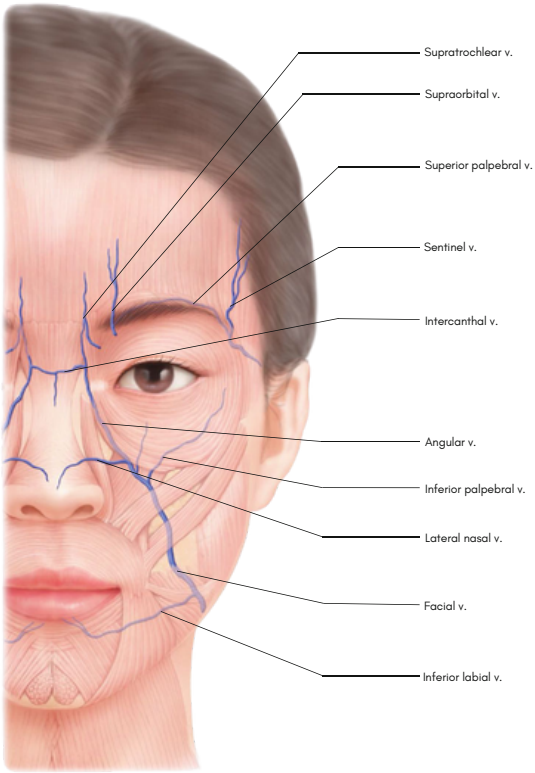
Labial Vein

The labial v. originates from the upper lip and the lower lip. The superior labial v. connects to the infraorbital v.

The inferior labial v. connects to the mental v. The facial v. continues inferiorly along the antegonial notch toward the neck. The facial v., unlike the facial a., runs through the superficial portion of the mandible.

Retromandibular Vein

The superficial temporal v. runs inferiorly, merging with the branch from the parotid gland and exits the lower margin of the parotid gland. The retromandibular v. is bifurcated into the anterior and posterior branch at the mandibular angle. The posterior branch merges with the posterior auricular v. from the posterior portion of the ear and forms the external jugular v. The anterior branch of the retromandibular v. merges with the facial v. at the neck and forms the common facial v. The common facial v. continues into the internal jugular v.



General course of the facial vein and its topographic relationships with the facial muscles

Superficial Temporal Vein

The superficial temporal v. receives the vein branch from the lateral side of the head. It proceeds inferiorly along the anterior side of the ear and enters the parotid gland. The superficial temporal v. merges with the maxillary v. from the inferior portion of the temporal region inside the parotid gland.

Connections of the Vein

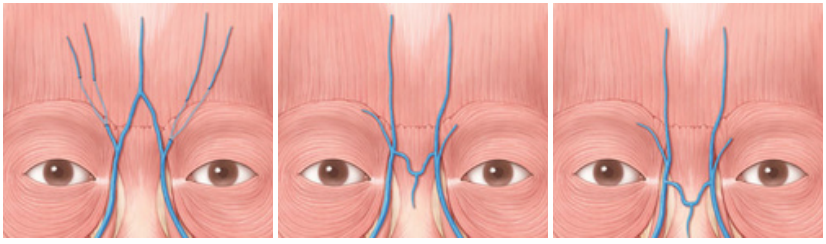
The facial v. lacks valves and is connected to relatively fewer branches. These two following vein connections are extremely important.

Connection Between Facial Vein and Angular Vein

The facial v. passes the angular v. and connects directly to the superior ophthalmic v. The venous blood from the medial canthus flows through the facial v. inferiorly to the neck or through the superior ophthalmic v. to the orbit. The superior ophthalmic v. proceeds into the cavernous sinus with a slow blood flow rate.

Connection Between the Pterygoid Plexus and the Cavernous Sinus

The venous blood from the facial v. flows through the deep facial v. again and into the pterygoid plexus inferior to the temporal region. The pterygoid plexus connects to the cavernous sinus inside the skull.



Venous anastomoses (intercanthal vein) at the glabellar region (c) type I at the glabellar region, (d) type IIa at the level above the intercanthal line, (e) type IIb at the level below the intercanthal line)

Facial Nerves

Cranial nerve (CN) VII—the facial nerve—is the main motor innervation of the facial muscles, with damage to CN VII being one of the most dreaded (but rare) complications of surgery. After exiting the stylomastoid foramen, an upper and lower division develops as it passes through the parotid gland before travelling to the facial muscles. This nerve harbors significant clinical implications during facial surgery. Another significant clinical consideration during a mandibular block (CN VII), is potential hemifacial paralysis, otherwise known as Bell's palsy.

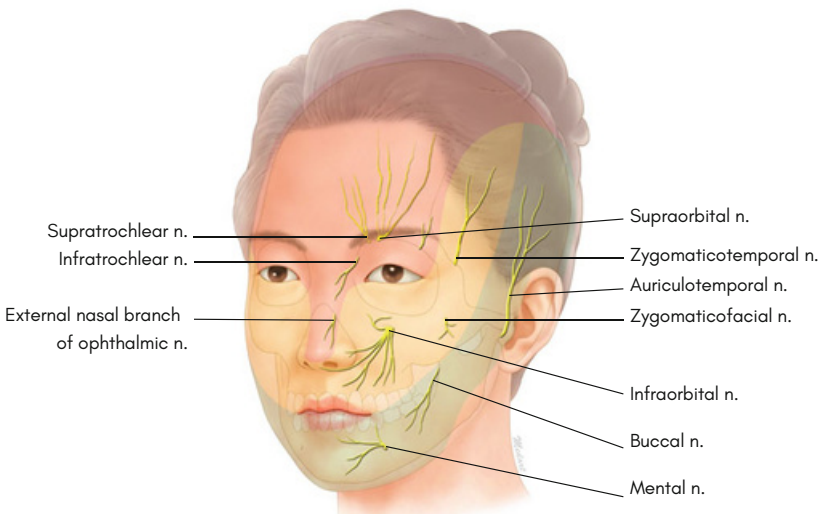
Other important innervations include CN V (trigeminal nerve), which has three branches as well as additional branches from the cervical plexus.

The greater auricular nerve is found approximately 5 cm inferior to the external auditory meatus, running deep within the superficial cervical fascia. The mental nerve, a branch of the inferior alveolar nerve, exits the mental foramen where it can be seen and palpated when the oral mucosa is stretched. This nerve provides innervation to the lower lip and the mandible. The buccal mucosa and the skin on the cheek is innervated by the buccal branch of the mandibular nerve, while the anterior two-thirds of the tongue is innervated by the lingual nerve (a branch of the mandibular division of the trigeminal nerve).

Face transplants have rapidly blossomed into a feasible management for patients with extreme disfigurements. To help repair damaged facial expression muscles and preserve their function, it is vital also to understand that these muscles do not contain proprioceptive receptors, compared with mastication muscles (which are innervated by the trigeminal nerve and thus contain proprioceptors).

Nerves of the Face and Their Distributions

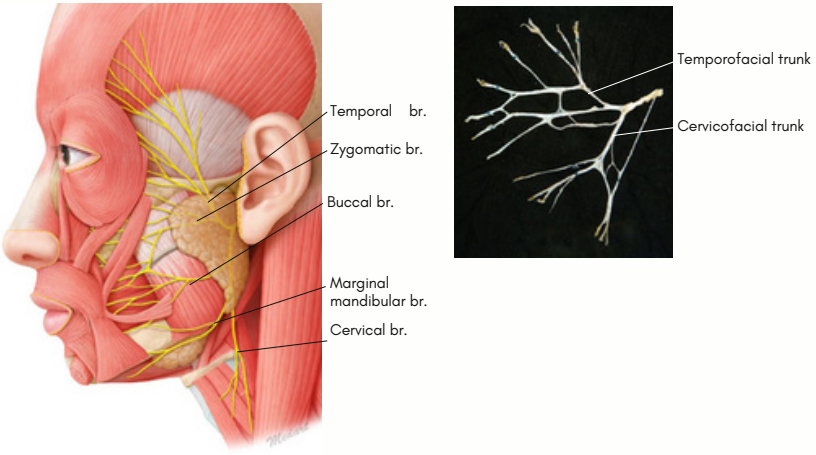
The trigeminal n. and the facial n. are major nerves distributed on the face. The trigeminal n. consists of three parts: the ophthalmic n., the maxillary n., and the mandibular n. The trigeminal n. passes through the foramina of the skull and divides into independent facial sensory nerves. On the other hand, the facial n. has one nerve trunk that passes through the stylomastoid foramen and separates into two divisions (temporofacial and cervicofacial divisions) within the parotid gland. Later, it branches off into five different nerve bundles transmitting motor impulses to facial mm.



The cutaneous sensory distribution of the face (red zone area of the ophthalmic nerve (V1) branches, yellow zone area of the maxillary nerve (V2) branches green zone area of the mandibular nerve (V3) branches)

Distribution of the Sensory Nerve

- Supraorbital n., supratrochlear n. (ophthalmic n.): forehead, glabellar region
- Infratrochlear n. (ophthalmic n.): glabella, radix
- Infraorbital n. (maxillary n.): external nose, nasal septum, lower eyelid, upper lip
- Buccal n. (mandibular n.): cheek, cheilion
- Mental n. (mandibular n.): lower lip, mentum, cheilion



Trunk of the facial nerve (a , b, c)and its temporofacial (upper) and cervicofacial (lower) divisions

Distribution of the Motor Nerve

The facial n. consists of temporal, zygomatic, buccal, marginal mandibular, and cervical nerve branches that transmit motor impulse to facial and neck muscles. There are several small nerve branches with complicated, random distribution patterns to the muscles. Therefore, it is difficult to determine nerve distribution region of boundaries for each muscle

Upper Face

Distribution of the Sensory Nerve

The upper face includes the forehead, the glabella, the radix, and the upper and lower eyelids. The supraorbital n. distributes to the forehead, the glabella, and the upper eyelid with its long, distinct branch and runs to the forehead and the glabellar region.

Furthermore, the minor branches of the supraorbital n. distribute to the upper eyelid in a triangular pattern. The supratrochlear n. is distributed to the upper eyelid and the medial side of the glabella. The inferior palpebral branch of the infraorbital n. moves superiorly past the infraorbital foramen and is distributed to the lower eyelid in a triangular pattern.

Also, several minor branches of the zygomaticofacial n. become distributed to the inferior and medial side of the lower eyelid.

Distribution of the Motor Nerve

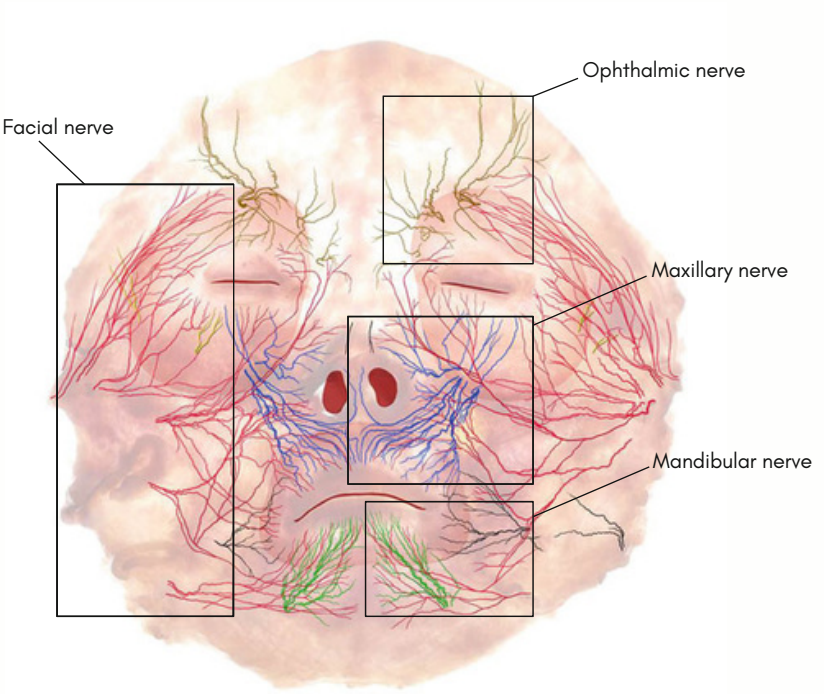
The temporal branch of the facial n. moves superamedially toward the upper eyelid and is distributed to the muscles on the lateral side of the upper eyelid. The zygomatic branch of the facial n. distributes the orbit and the muscles on the lateral side of the lower eyelid as it runs superior to the inferior palpebral branch of the infraorbital n. Generally, the temporal branch transmits motor ability to the frontalis m., the corrugator supercilii., and the superior portion of the orbicularis oculi. The zygomatic branch is distributed to the inferior portion of the orbicularis oculi m. and to the origins of the zygomaticus major and minor m.

Typically, the buccal branch of the facial n. runs superiorly along the lateral side of the nose to the radix. Therefore, the procerus m., the medial portion of the corrugator supercilii. on the glabella, and the radix are innervated by the temporal branch and by the buccal branch

Midface

Distribution of the Sensory Nerve

The midface includes the cheek region and the nose. The infraorbital n. of the trigeminal n. plays a vital role in the cutaneous sensation in the midface. The external nose is mostly innervated by the infraorbital n. with the exception of some parts that are innervated by the external nasal branch of the nasociliary n. (from ophthalmic n.). The lateral nasal branch of the infraorbital n. proceeds along the nasal ala with some distributing to the nose tip near the midline. The internal nasal branch of the infraorbital n. is distributed to the mucosal of the nasal septum. The superior labial branch of the infraorbital n., one of the most distinct branches, is distributed to the area that spans from the medial portion of the upper lip to the cheilion. The infraorbital n. is distributed among the general infraorbital region from the infraorbital foramen to the upper lip.



Sensory and motor nerve distribution on the face (V1, ophthalmic nerve; V2, maxillary nerve; V3, mandibular nerve; VII, facial nerve)

Distribution of the Motor Nerve, 1

The temporal branch of the facial n. moves superomedially toward the upper eyelid and is distributed to the muscles on the lateral side of the upper eyelid. The zygomatic branch of the facial n. distributes the orbit and the muscles on the lateral side of the lower eyelid as it runs superior to the inferior palpebral branch of the infraorbital n. Generally, the temporal branch transmits motor ability to the frontalis m., the corrugator supercilii m., and the superior portion of the orbicularis ocuper lip.

Distribution of the Motor Nerve, 2

The buccal branch of the facial n. proceeds medially and has small branches that are dispersed to the cheek. These branches superimpose with the superior labial branch of the infraorbital n.

The buccal branch and the infraorbital n. lie superimposed with each other in the superior 3/4 of the infraorbital region. The buccal branch is distributed to the levator labii superioris alaeque nasi, the levator labii superioris, and the zygomaticus minor m. The buccal branch also is distributed to the zygomaticus major, the risorius, and the superior portion of the orbicularis oris m.

Lower Face

Distribution of the Sensory Nerve

In the lower face, the mandibular n. distributes to the lower lip and to the mentum. The buccal n. proceeds medially along the occlusal plane to the cheilion. The mental n. runs through the mental foramen and is distributed to the lower lip which includes the cheilion and the mandible. The superior labial branch of the infraorbital n., the buccal n., and the angular branch of the mental n. is distributed to the mouth corner. Furthermore, there are nerve plexus formed between the infraorbital n. and the buccal n. and also between the buccal n. and the mental n. superior and inferior to the cheilion.

Distribution of the Motor Nerve

The marginal mandibular branch of the facial n. is distributed to the mentalis, the depressor anguli oris, the depressor labii inferioris, and the inferior portion of the orbicularis oris m. The actual anatomy of the trigeminal n. and the facial n. is quite different from that found in the textbook. The cutaneous n. of the trigeminal n. and the motor n. of the facial n. are not distinguished as some of the few, distinct nerves. Even though some of the major branches can be observed during dissection surgeries with the naked eye, they are intertwined with other small branches such as nets. Therefore, it is best to describe the distribution pattern of nerves with a plane rather than with several distinct lines

Surface Landmarks

FACIAL AND SKULL SURFACE LANDMARKS

1.Facial Surface Landmarks According to Anatomical Labels

2. Surface Landmarks of the Skull

It is best to be acquainted with foramens of the skull, which serve as landmarks from which major vessels and nerves exit.

(a) The frontal notch and the supraorbital foramen: The frontal notch medial to the eye could feel near the glabella along the supraorbital margin, and the supraorbital foramen could feel slightly lateral to the frontal notch. The supratrochlear a. and supratrochlear n. pass through the frontal notch, and the supraorbital a. and supraorbital n. pass through the supraorbital foramen.

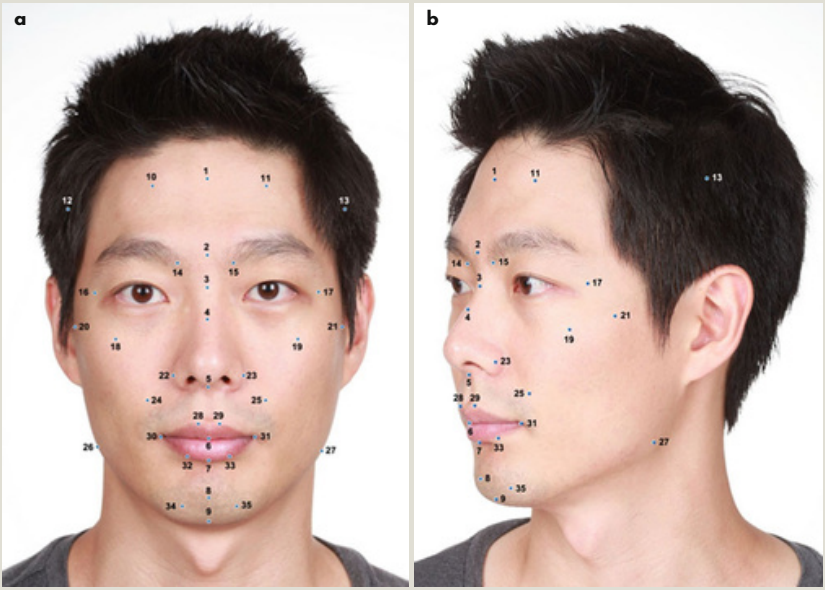
(b) Infraorbital foramen: The infraorbital foramen is located on the upper third of the line connecting the infraorbital margin to the nasal ala. The infraorbital foramen locates medial to the vertical line connecting the pupil and mental foramen. The infraorbital a. and infraorbital n. exit through the infraorbital foramen

(c) Mental foramen: The mental foramen is located along the same line used to locate the infraorbital foramen 2 cm inferior to the oral commissure. The mental n. exits through the mental foramen

3. Surface Anatomy

4. Actions of the Facial Muscles and Formation of Creases

There are various muscles in the face that participate in the formation of facial expressions and facial creases. The following three points should be considered.



Surface landmarks of the face ((a)frontal view, (b)oblique view)

1. First, there are origin and insertion points for the facial m., and the muscle contracts toward the origin in order to produce facial expressions and creases. Therefore, it is necessary to understand each muscle's movement vectors and their actions.

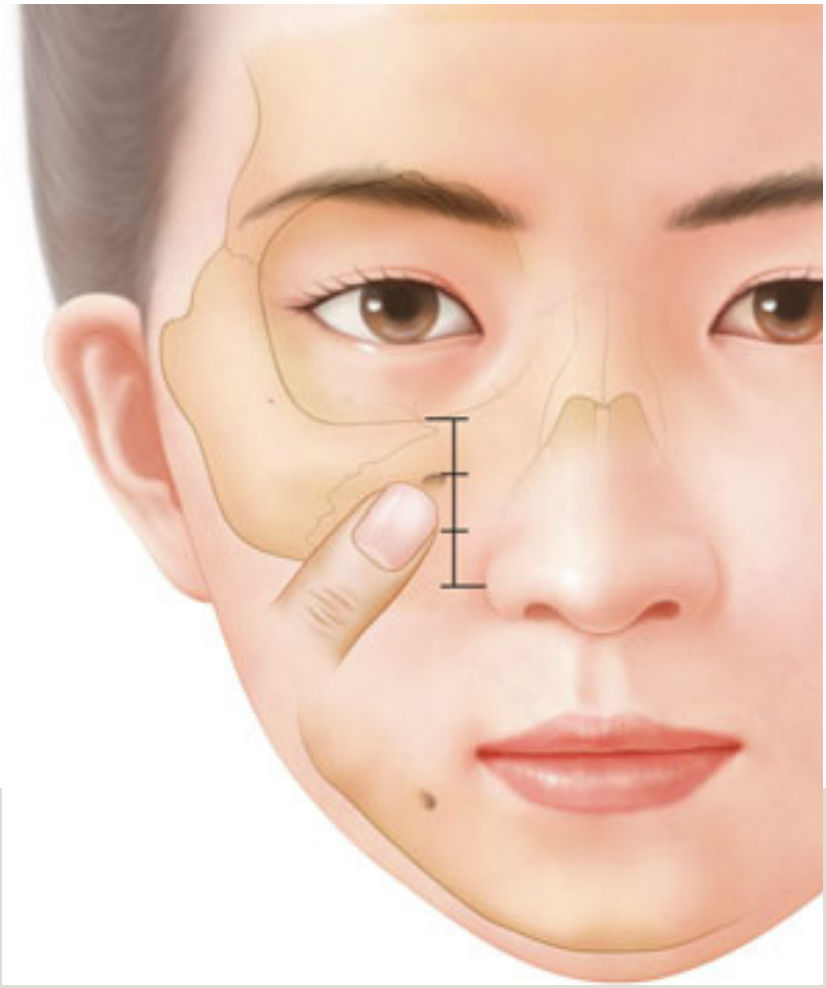
2. Second, all the wrinkles or furrows are created perpendicularly to the muscle vectors.

3. Third, there are many instances when multiple muscles overlap. Furthermore, multiple muscles are involved in producing one's facial expressions. Therefore, each muscle's movements cannot be correlated to one facial expression.

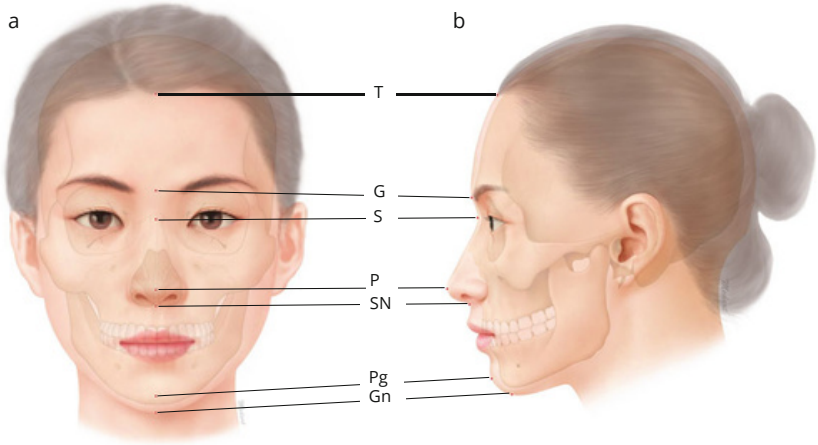
4. Fourth, not all muscles lie on the same plane. There are about 3–4 layers of depth with different muscles in each layer, which affect injection depth.

Muscle size and location vary among individuals. For example, some possess a thicker corrugator supercilii m., while others possess a wider depressor anguli oris m.

It is necessary to observe a patient's various facial expressions in order to investigate the strength and area of each muscle.



Identification of the supraorbital notch (or foramen), infraorbital foramen, and mental foramen



Major anatomical landmarks of the face (a) frontal view, (b) lateral view) (T trichion (hairline), G glabella (most anterior projection of the forehead), S sellion (the deepest point of the nasofrontal concavity), P prona-sale (apex nasi, nasal tip), SN subnasale (the point at which the nasal septum merges), Pg pogonion (the most prominent point of the soft tissue of chin), Gn gnathion (the lowest part of the soft tissue of the chin)

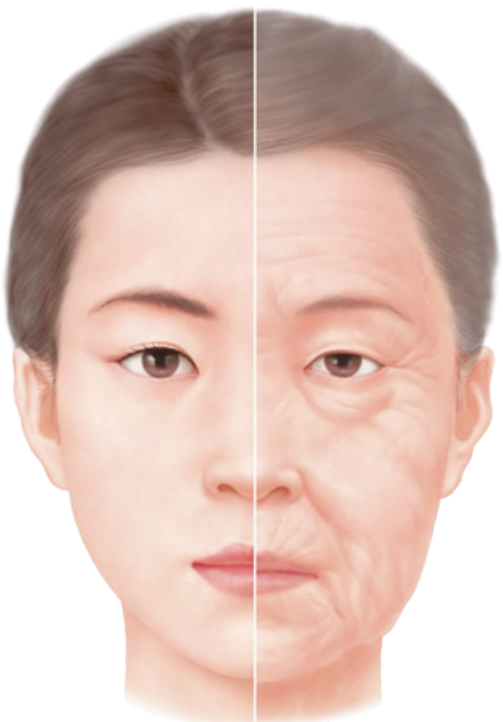
CONCLUSION

The face is unique in its profound ability to communicate, express emotion and masticate. As a result of this intricate functionality, it is imperative that medical practitioners have an insightful understanding of applicable anatomy. Each facial layer is morphologically and clinically distinct and may be differentially affected by the aging process. This layered structure provides an intricate canvas, adding to the functional and artistic imagery required during aesthetic treatments.

By first breaking the anatomy down into basic layers, it is easier to visualize the integral structural an functional components before attempting to brainstorm novel aesthetic solutions.

Anatomy of the Ageing Process

Ageing of the skin, soft tissue and bone, and changes to facial ageing



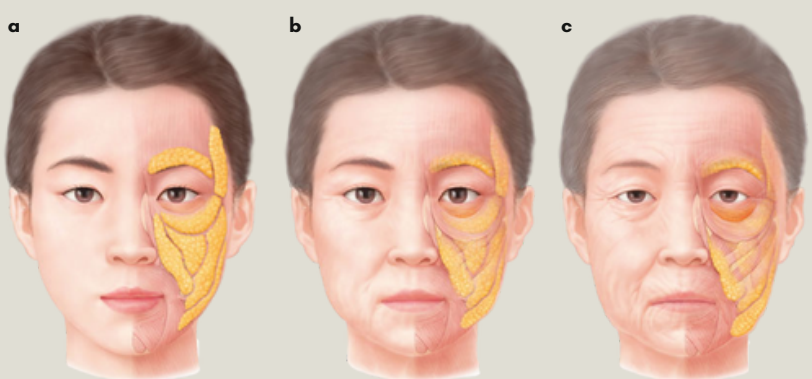
THE COMPLEX CHANGES OF THE FACIAL APPEARANCE WITH AGING

In life, the aging process comes naturally. Research on the aging process increased as people's average life span became longer, and people started to pay greater attention to their quality of life.

Understanding the characteristics of aging is the key foundation for filler and botulinum toxin treatment

All tissues change characteristics with age. As apparent in the illustration tssues are subject to atrophoderma, redistribution, and sagging. The skin loses some collagen and elastin in the dermis, and the dermis loses some hyaluronic acid, becoming dry, inelastic, and wrinkly.

Facial aging is a complex, multifactorial process involving multiple facial layers. Changes in the skin, skull, and soft tissues play contributory roles. Loss of collagen and elastin, combined with epidermal thinning, contributes to the appearance fine rhytides. Distributional changes in the superficial and deep fat pads, in addition to bone remodeling, constitute key morphological factors and result in the characteristic inverted heart shape of the aging face. Understanding these multifactorial aging pathways facilitates effective aesthetic treatments.



Processes of the facial aging in 30's (a), 50's (b), and 70's (c)

AGING PROCESS OF THE FACIAL TISSUE

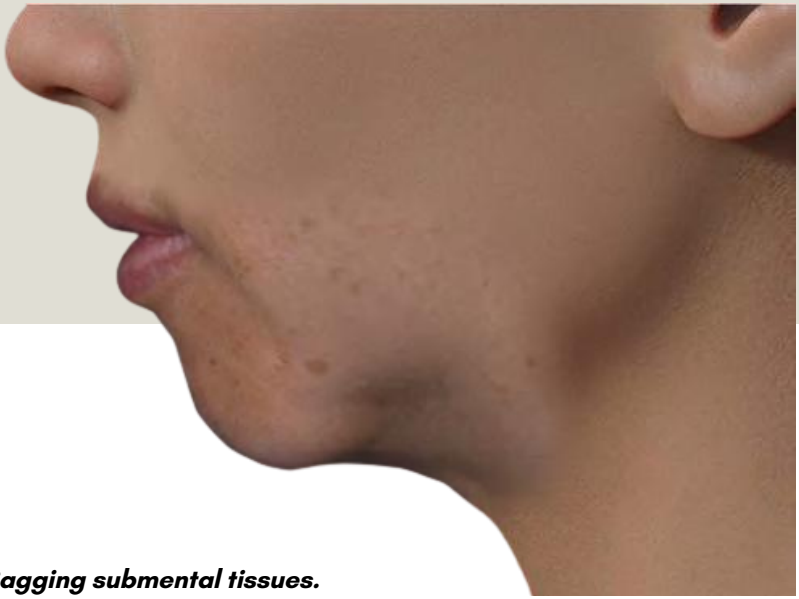
The anatomical structures of the face related to aging comprise of the facial bone, fat tissue, fibrous connective tissue, and facial muscles.

The bony tissue is a structure that forms the basic frame of the face and bone remodeling goes throughout lifelong period. With aging, bone resorption is accelerated and morphologic changes take place in the marginal area of bones, such as the orbital rim, maxilla, and the mandible. Thus, the orbital rim enlarges, the maxilla shortens, and the length and height of the
mandible reduce

Fat tissue shows different aging processes between superficial and deep fat of the face. In the superficial fat, drooping appears due to gravity. In the deep fat, relocation and atrophy take place due to the unbalanced change of the volume of fat compartments. Drooping of the fat tissues is presented as jowl or the deepening of the nasolabial fold caused by the drooping of the superficial fat of the chin and cheek. The relocation and atrophy of fat appear as hollow cheek.

Among the fibrous connective tissue, the thick fibrous connective tissue that has high density and strongly holds facial muscle is called the retaining ligaments. The facial musculature is a thin layer that lies between the superficial fat and deep fat of the face. Fibrous connective tissue loses its elasticity when proteins such as collagen and elastin are degraded. Subsequently, dermal thickness reduces and membranous structures such as septum and SMAS shift downward.

However, retaining ligaments have two sides of aging. Retaining ligaments make the wrinkle look deeper around the boundary of the fat compartments. This is because the retaining ligaments have a function of resisting against drooping of other tissues. On the other hand, when aging proceeds and even the retaining ligament loses its elasticity, fat protrusion and drooping caused by gravity accelerate even more. An example of the former case is tear trough caused by orbicularis retaining ligament and of the latter case is palpebromalar groove and festoon caused by septal fat protrusion.



Sagging submental tissues.

When aging progresses, the superficial buccal fat starts to droop and a pit appears in the mid-chin because the mandibular ligament holds the buccal fat.

if the elasticity of the mandibular ligament reduces and mandible absorption accelerates the loss of support, jowling may intensify.

When old, not only the mandible and maxilla are absorbed, but the alveolar bone is absorbed intensely. Since the absorption of the maxilla is faster than the mandible, the chin may seem protruded. Since the tooth and alveolar bone are lost and not there to locate the perioral muscle, the perioral muscle and lip contract and fine wrinkles appear at the perioral area.

Loss of maxillary support and projection and the mandible will result in morphological changes, and soft tissue changes also contribute to the saggy appearance in older individuals.

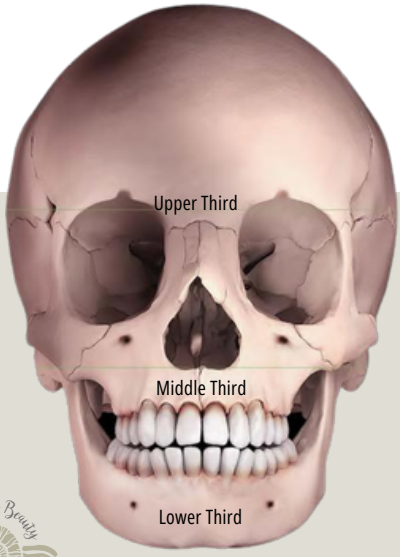
With aging, there is deflation and loss of the normal anatomic subcutaneous facial fat compartments, which give the appearance of increased skin laxity or prominent folds around the nasolabial region, peri-orbital region, and jowl.

One can use the deep and superficial fat pads as a map for facial aging: the deep fat pad of the periorbital area is affected first (the transition between the medial suborbicularis oculi fat and the superior edge of the malar fat pad is lost), which creates a concavity between the thin medial eyelid skin and thicker cheek skin, resulting in a tear trough deformity.

Subsequent further deflation of the deep medial cheek fat leads to ptosis of the overlying superficial malar fat pad and further deepening of the tear trough deformity with hollowing of the centromedial cheek.. However there is not only volume loss but also hypotrophy.

Together with volume loss in fat pads, there is also lack of support and stability of the ligaments because of the repositioning of their points of origin, followed by ligamentous weakening due to continuous stretching.

Ligaments function as a hammock for the fat compartments and promote the appearance of sagging when there is a lack of structure.



Glogau Wrinkle Scale

The Glogau Wrinkle Scale is a classification system used in dermatology to measure the severity of photodamage, or skin damage caused by exposure to the sun. It was developed by Dr. Richard Glogau, a dermatologist, and it ranges from 1 to 4 and can help the aesthetic practitioner during the consultation phase of the treatment to discuss the best course of action for their client

Mild - Few wrinkles, requires little or no make-up for coverage.

Moderate - Early wrinkling, sallow complexion with early actinic keratosis, requires little make-up.

Advanced - Persistent wrinkling, skin discoloration with telangiectasia and actinic keratosis, always wears make-up.

Severe - Severe wrinkles, photoaging, history of skin malignancies, and make-up is a necessity.

Consultation

Client Consultation

A client consultation is a one-to-one talk with your client. During this time, you will find out very important and confidential information that will allow you to advise and provide the best treatment for the client.

It is important to always introduce yourself to the client as this removes any barriers and relaxes them.

Consultations should always be undertaken in a private room or area where you cannot be overheard by others.

A client should first fill out a client consultation which helps identify any contra-indications that may mean you have to alter the treatment or be unable to treat them at all. If their form shows no reason why they cannot proceed with the treatment, then you can move onto verbal questioning.

Verbal questions would be to establish why the client has visited the salon and what their expectations and outcome of the treatment may be. Asking what they want ensures you can provide customer satisfaction as the client should be pleased with the outcome of their treatment. It is good practice to speak to the client in front of a mirror and explain the treatment to them and see if that meets their requirements.

Once you have established what the client is after, then a physical examination should be undertaken. This allows you to further check for any undeclared contra-indications and get a better overview of any issues that you may face during the procedure.

Allow around 15 minutes for the client's first salon visit. Ideally, you should sit face to face or next to the client to create an open atmosphere. Avoid barriers such as a couch or table between you.

Use open questions to tactfully encourage the client to give you information that you may need rather than using interrogating questioning techniques. Use the consultation form to work from and record anything you may discuss.

Record Keeping

Records must be maintained and updated for a number of reasons.

• They provide contact details in case you need to alter or cancel an upcoming appointment.
• So that you can track client's progression.
• To record the products used and timings so you can use these at further visits and adjust the treatment plan if required.
• Tracks any aftercare you provide the client.
• Records patch test history.
• As a backup in case, the client has an adverse reaction to treatment.
• For legal reasons if the client brings a claim against you.

Client records can be stored electronically or filed away manually and should be updated at every visit. If consultation forms are not updated and do not contain a history of services and dates, then you may find your insurance invalid.

Forms should be kept for the timeframe suggested by your insurance company. This may be for up to six years.

If a client is under 21 at the time of service, then it is recommended to keep the forms for six years past their 21st birthday.

Client confidentiality must be protected at all times. Forms need to be locked away in a secure cabinet, and electronic records should be held on a password-protected computer.

• All information must be accurate and necessary for the service or treatment being performed.
• Individual client records must be available for the clients to view if requested.
• Data should not be passed on or sold without the client's prior written permission.

The following details should be recorded on the client consultation form:

- Personal details - name, address, contact details
- Results of any patch tests
- Contra-indications
- Contra-actions
- Reasons for the treatment
- Any reactions to treatments/previous treatments
- Home care advice/suggested retail items.
- Any sales
- Treatment timings/products used etc.
- Next appointment or recommendations

Any contra-indications and possible contra-actions should be identified and discussed prior to the treatment. In the case of a medical referral, the therapist should keep a copy of the physician letter with the client's record card.

Consultation forms must be signed and dated to prove that you have covered everything and given the correct advice and treatment plan.

See an example on the next page..

SKIN BOOSTERS

CLIENT INFORMATION FORM

Consultation Sheet / Treatment _____Therapist Name_____

APPOINTMENT DATE	APPOINTMENT TIME

FULL NAME	
ADDRESS	
CITY	POST CODE
PHONE	EMAIL
DATE OF BIRTH	CURRENT AGE

NEWSLETTER

Occasionally we may send out emails or newsletters about upcoming discounts, promotions, contests, company information etc. If you would like to be added to the subscriber list please check "Yes" below. If you would like to opt out please check "No".

☐ YES! Sign me up!

☐ No, thank you.

We will use your e-mail address solely to provide information about our company. Your information will not be sold.

MEDICAL DETAILS

- ☐ Client taking steroids
- ☐ Diabetes
- ☐ Epilepsy
- ☐ Asthma
- ☐ Stress/ Anxiety, Depression
- ☐ Pregnancy: Months
- ☐ Breast feeding
- ☐ HIV / Hepatitis
- ☐ Dysfunction of Nervous System
- ☐ Allergies
- ☐ Cold sores
- ☐ Keloid scaring or prone to keloid scaring
- ☐ Acne/Acne medication
- ☐ Sensitive skin
- ☐ Dermatitis
- ☐ Broken Capillaries
- ☐ Wear contact lenses
- ☐ Sinus problem
- ☐ Scar Tissue
- ☐ Skin Disorder
- ☐ Recent surgery
- ☐ Eczema / Psoriasis/ Dermatitis
- ☐ Hormonal condition
- ☐ Are you taking blood thinners?
- ☐ Circulatory Disorder
- ☐ Heart Condition
- ☐ Varicose Veins
- ☐ Thrombosis
- ☐ High/Low Blood Pressure
- ☐ Haemorrhage/Swelling
- ☐ Bruising
- ☐ Cancer
- ☐ Headaches / Migraine
- ☐ Braces/retainers
- ☐ Thyroid condition
- ☐ Fish oils/plant oils/omega 3's Ginseng/St Johns Wart
- ☐ Allergies to products:

CURRENT MEDICATION/TREATMENT

In the last 3 months have you had in the area to be treated today?

- ☐ Plastic/cosmetic surgery
- ☐ Laser/IPL rejuvenation/hair removal
- ☐ Dermabrasion
- ☐ Photo dynamic therapy (PDT)
- ☐ Dermal fillers
- ☐ Muscle relaxant injections
- ☐ Tattooing/cosmetic tattooing

In the last 2 weeks have you had in the area to be treated today?

- ☐ Electrolysis/diathermy
- ☐ Shaving/Waxing/Plucking/
- ☐ Depilatory creams
- ☐ Self-tanning
- ☐ Chemical peels- including home treatments including AHA's,

I agree that all the information provided above is correct:

Client signature_____ Date:_____

SKIN BOOSTERS

CLIENT INFORMATION FORM

LIFESTYLE

Client occupation- it is good to know this for stress levels, type of elements that the skin is exposed to
Do you smoke? -if yes follow up with how many. This damages the skin and is hard to repair if it keeps getting damaged
Describe your eating habits.- is it balanced? Convenience or processed food? Following a special diet due to lifestyle choices or intolerance's. Food has an effect on your skin due to nutrients so again good to know if you can advise clients on changes to improve their skin.
Do you drink alcohol?- can affect the skin and can also thin the blood so good to know for treatments where bleeding could occur
How much water, on average, do you drink daily?- again good for the skin and recommendations
Which caffeinated drinks do you normally consume?- affects the skin and speeds up ageing
Do you sunbathe or use tanning beds?- bad for the skin and should not have after some treatments
Do you wear a SPF daily?- need to know for after care advice

Which of the following best describes your skin type on the Fitzpatrick scale?

1. I Creamy complexion – Always burns, never tans
2. II Light Complexion – Always burns, tans slightly
3. III Light/Matte Complexion - burns moderately, tans gradually
4. IV Matte Complexion – rarely burns – always tans well
5. V Brown Complexion – rarely burns, deep tan
6. VI Black Complexion - Never burns, deeply pigmented

Have you had a facial treatment before?- good for explanations for the client and if it has to be in-depth or not

TREATMENT OBJECTIVES

1. What is your current skin care routine?
Good to know so it may explain some of the skin damage and can also be used in your aftercare advice with recommendations for retail opportunities

2. Why have you booked the treatment today (client's objectives)?
So, you can focus on achieving this

3. Do you have any specific concerns you would like me to focus on?
Again, to ensure client satisfaction and manage unrealistic expectations

TREATMENT PLAN MEETING THE CLIENTS NEEDS (include products that you plan to use)
Need t o write in here what you plan to do, for example-
What skin boosters did you used? How much? Batch numbers.

ANY MODIFICATIONS
Are you working around anything? Making any changes in the usual routine?

CLIENT DECLARATION

I confirm that the above information is correct and understand the treatment plan prescribed for me and I am happy to proceed with the treatment

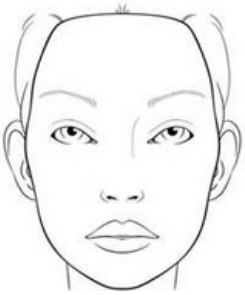
Client signature_____Date:_____

SKIN BOOSTERS

CLIENT INFORMATION FORM

SKIN ANALYSIS

- ☐ Skin type
- ☐ Redness
- ☐ Skin texture
- ☐ Muscle tone
- ☐ Congestion
- ☐ Elasticity
- ☐ Pigmentation
- ☐ Broken capillaries
- ☐ Fine/deep lines
- ☐ Dehydration



Notes-
Include details on the skin condition and type here, As well as injection points

-IMMEDIATE AFTERCARE ADVICE

Drink water Avoid UV
Avoid heat treatments Avoid make-up
Avoid swimming Avoid Exercise
No cleansing the skin for a minimum of 6 hours Avoid applying products

SPECIFIC TREATMENT RELATED ADVICE:

Wear SPF 30-50+
Avoid touching the face as it will introduce impurities
Lymphatic massage techniques

FUTURE TREATMENT RECOMMENDATIONS

Come back in 2/4 weeks
You may recommend any other treatments e.g facials

PRODUCT RECOMMENDATIONS

Link to retail opportunities if you have some or general recommendations

POSSIBLE CONTRA-ACTIONS AND ACTION TO BE TAKEN

If any redness, swelling rash type symptoms occur please take the following steps-

1. Wash the area with cold water
2. Apply a cold compress
3. If it doesn't improve seek medical advice/attention

CLIENT FEEDBACK (please could you provide some feedback about your treatment today)

Client signature_____Date:_____

Consent

Consent Form

• I understand that the clinic will securely store the data I have written on this form, not share with it any third parties and that I can request a copy or for it to be deleted at any time.
• I understand that skin booster injections stimulate collagen production, but results can differ between clients.
• I understand that skin booster treatments are best completed as a course.
• I understand that my face will be slightly red post-treatment and bolus lumps may be seen for up to 24 hours after the treatment.
• I understand that there is a risk of blood spots and slight swelling.
• I understand that I need to use a high-factor sunscreen on my face for at least 1-week post treatment as my skin will be sun sensitive and to avoid pigmentation occurring.
• I confirm that I have given medical information to the best of my knowledge and not withheld any information.
• I consent to having before and after photographs taken
• I understand that photographs are essential for insurance purposes.
• I consent to my photographs being used for marketing purposes Yes / No
• I consent to my photographs being used for social media and marketing purposes Yes / No
• I therefore give consent to the described treatment.

Name: _____Signature:_____
Date: _____

Practical Procedure –

Consultation checked (visually, signed)

Verbally:

Are you under any doctors care, taking any medication?
Have you got any allergies?
Are you pregnant or breastfeeding
Have you had this treatment before?
What are your expectations

1. Explain treatment plan, outcome and contra actions
2. Cover client with couch roll
3. Prepare skin with skin by cleansing it with antibacterial cleanser like vitasept or clinisept
4. Mark up 10 Bap[illegible]nts using a white pencil
5. Inject 2 bars per point
6. Wipe off pencil marks
7. Show client in mirror
8. After ca[illegible]

Skin Boosters

Skin boosters are fast becoming a common treatment within the aesthetics industry. They are a great alternative for clients who do not want dermal filler or wrinkle-relaxing treatments but still wish to improve the appearance of the skin.

Skin boosters are usually administered by puncturing the skin, via a needle, and delivering a Hyaluronic acid-based solution targeting the lower layers of the skin. There are many different skin boosters on the market that injectors can use but essentially, they will all contain hyaluronic acid in varying quantities.

What is Hyaluronic acid (HA)?

Hyaluronic acid is found naturally within the body and 50% of the body's HA is found in the skin. HA, in the skin, is responsible for maintaining levels of moisture to protect the skin barrier. HA synthesis increases when the wound-healing response is triggered and is linked to the production of collagen through the activation of fibroblasts.

The natural levels of HA degrade as a result of many things including-

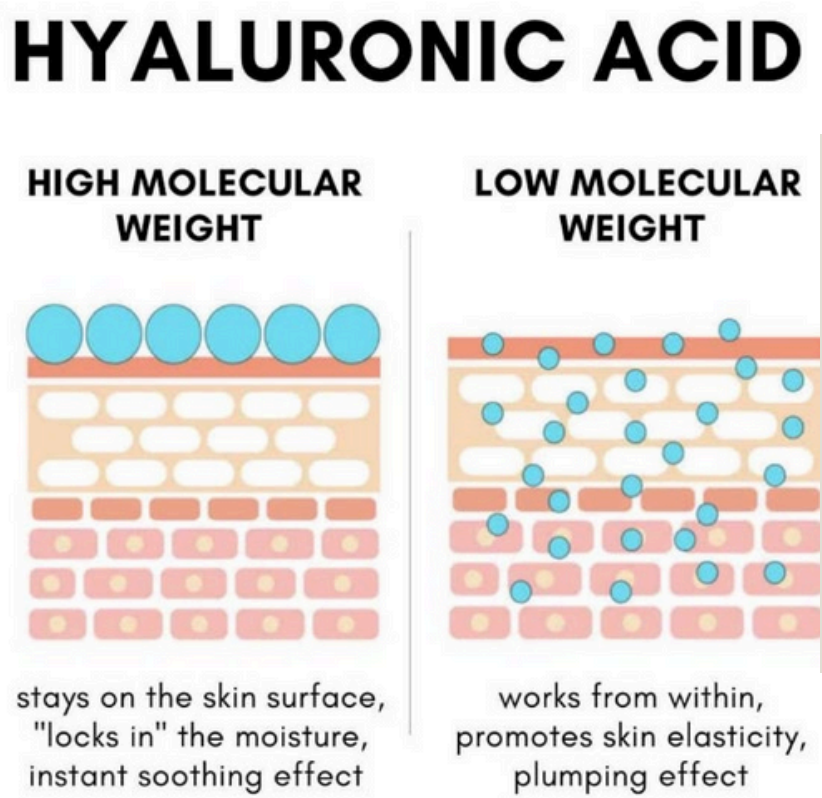
- Intrinsic factors like the ageing process- particularly during and after hormonal changes like the menopause in female clients
- Extrinsic exposure to external damage like UV rays and free-radicals (ROS)

Natural HA is not retained in the body for very long. HA has a half-life of 3 to 5 min when found within blood, less than 24 hours in the skin and 1 to 3 weeks within cartilage. The bodies naturally occurring hyaluronidase breaks down the HA.

This can be seen when dermal filler is dissolved using hyaluronidase or the natural breakdown of dermal filler over time.

It is suggested in, various studies, that some skincare ingredients can help reduce the degrading of HA.

These include the use of ascorbic acid, better known as Vitamin C, and SPF30+. HA is a humectant (a substance that attracts and retains water) that attracts moisture over 1000 times it weight!



Types of HA

The size of the HA particles will determine the level of penetration within the skin. High molecular weight means that the particles are larger and cannot penetrate into the small spaces between the individual skin cells. This HA provides the epidermis with a protective barrier to keep aggressors out and lock the moisture in. Low molecular weight means the particles are smaller and can penetrate through the epidermis towards the dermis. This will have a stimulating effect on the fibroblasts and assist with the production of collagen.

What is the difference between skin boosters and dermal fillers?

Both substances contain HA but the HA in skin boosters is non-crosslinked and designed to spread whereas dermal filler is cross-linked and designed to stay put and not spread. This significantly reduces vascular occlusion (VO) risks. Some new skin boosters on the market do have an element of cross-linking but it is still not as 'thick' as a dermal filler. To ensure that you can deal with complications that can occur with using some cross-linked substances (VO's) check if you are covered with your knowledge, emergency kit, and insurance.

Which Skin Boosters are available on the market?

There are so many skin boosters on the market including-

• Sunekos
• Jalupro
• TKN
• Seventy Hyal
• My filler essence
And the list goes on and on…..

Which skin booster is the best one?

There is no one skin booster that outperforms the other. There are so many deciding factors that will influences your choice of which skin booster to select for your client.

These include-

- Price of the product/treatment- Some skin boosters can cost £100+ to buy therefore your treatment may cost more.
- Ingredients the skin booster contains- The levels of HA can vary in micrograms (mcg) per brand. Some brands will also contain other ingredients like amino acids and peptides for added anti-ageing benefits

- Commitment the client can come for treatments- Some treatments can be spaced a month apart, while others are weekly or fortnightly.
- Area's the products can be used- Some skin boosters can be used around the eye's while others can't, others cannot be used on the forehead.

How often do they need to be administered?

This will depend on the brand of product used and the specific treatment plan they recommend as well as the age of the client. More aged skin may need more treatments and closer together.

The usual frequency is 1 a month for 2-3 months as a course. Then the client can space a 'booster' treatment once every 3-9 months apart. Again, this will be determined by when their skin needs it.

If skin is particularly aged and in need then the frequency can be increased to once every 2 weeks for 3 treatments but again this will vary on the individual brand protocols.

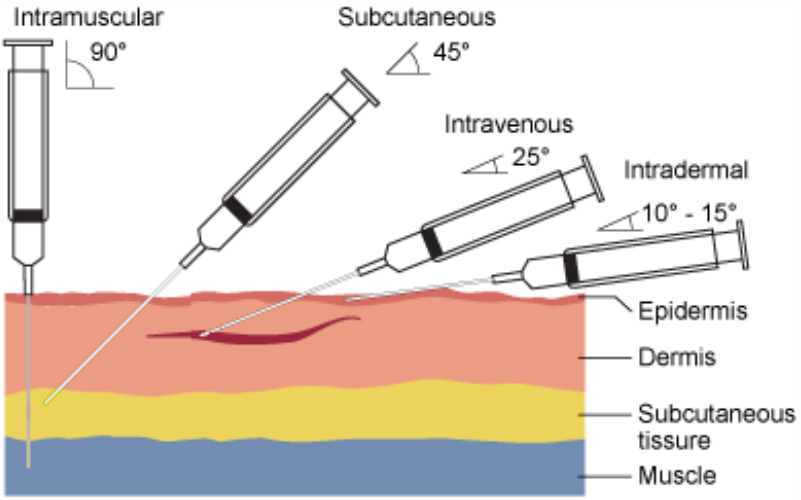
How are they administered?

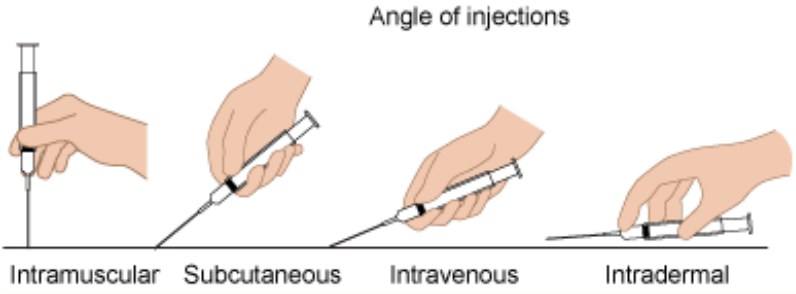
They are injected using a hypodermic needle. Usually, a 29-30 Gauge needle that can be as small as 4mm. Some products can be purchased with a suitable needle inside the box.

The needles are inserted at an angle of 10-15 degrees to place the product **intradermally.**

The needles do not need to go in too deep as the target is to place the product within the layers of the skin.

Injection points and techniques can vary but the most common technique is referred to as the BAP (bio-aesthetic point) technique.

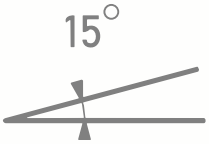

Intramuscular
90°
Subcutaneous
45°
Intravenous
25°
Intradermal
10° - 15°
Epidermis
Dermis
Subcutaneous tissure
Muscle

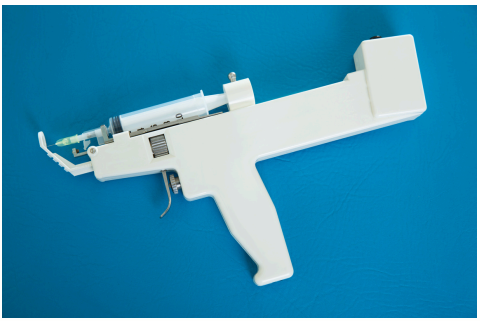

Angle of injections
Intramuscular
Subcutaneous
Intravenous
Intradermal

Techniques

There are a few techniques that can be used to deliver a skin booter product into the skin.

Nappage / Point to Point: a series of micro-injections to deliver skin booster product into the skin providing instant hydration. The needle is inserted at 15 degrees at 2cm intervals.





A mesotherapy gun can be used to deliver product into the superficial layers of the skin at precisely the right depth.

In this training you will be shown the BAP technique which we feel have the best treatment outcome for your clients. The principle technique consists of 10 injection points, this can also be adapted to 8 and 5 depending on the outcome that the client desires.

BAP technique

The BAP technique placement

There are 10 injection sites spread across the sides of the face.

1. Positioned about 2cm away from the eye on the highest part of the zygomatic (cheek) bone Always inject away from the eye

2. Positioned 1cm away from the tragus of the ear

3. Positioned 1.5cm away from the nostril, this can also be mapped using the center of the pupil

4. Positioned 1cm above the mandibular arch (corner of the jaw)

5. Position 1cm down and 1cm in from the oral commissure or the nostrils can be used for positioning

As there are 10 injection points divide the solution into 10 and administer, for example if there is 2ml of solution this will be 0.2 bars of product per injection.

Malar & Submalar Areas

these 5 points identify the 5 anatomically receptive areas of the face with an absences of large vessels and nerve branches, therefore minimising risks whilst maximizing diffusion of the product in the malar and submalar areas.

Identify 5 BAP injection sites on each side of the face

Inject 0.2ml per bolus at the superficial subcutaneous layer

1 ZYGOMATIC PROTRUSION
at least 2 cm away from the external corner of the eye

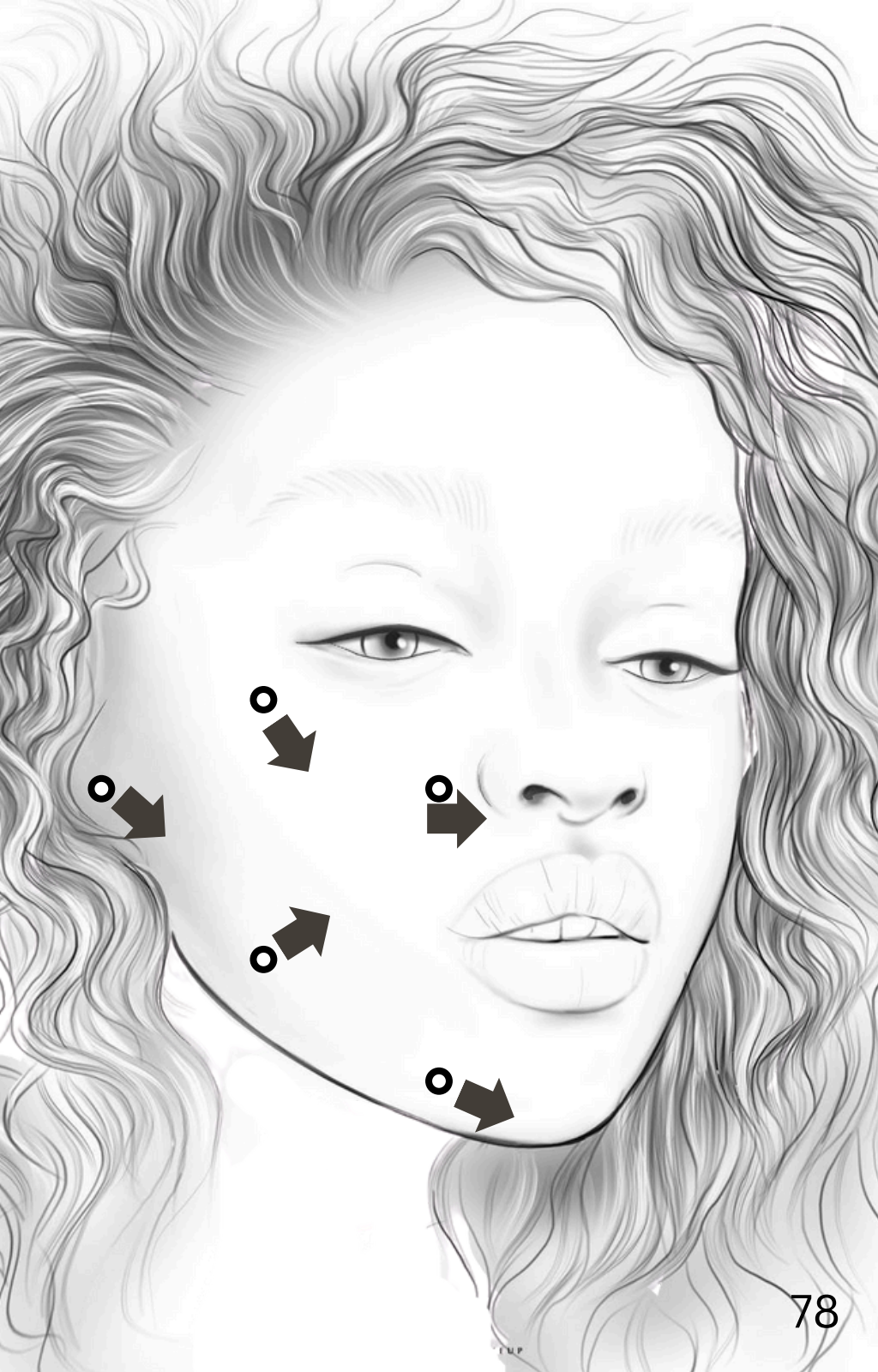
2 NASAL BASE
- draw a line connecting the nostril and tragus
- draw a perpendicular line starting from the pupil
- locate the injection point at the intersection of the 2 lines

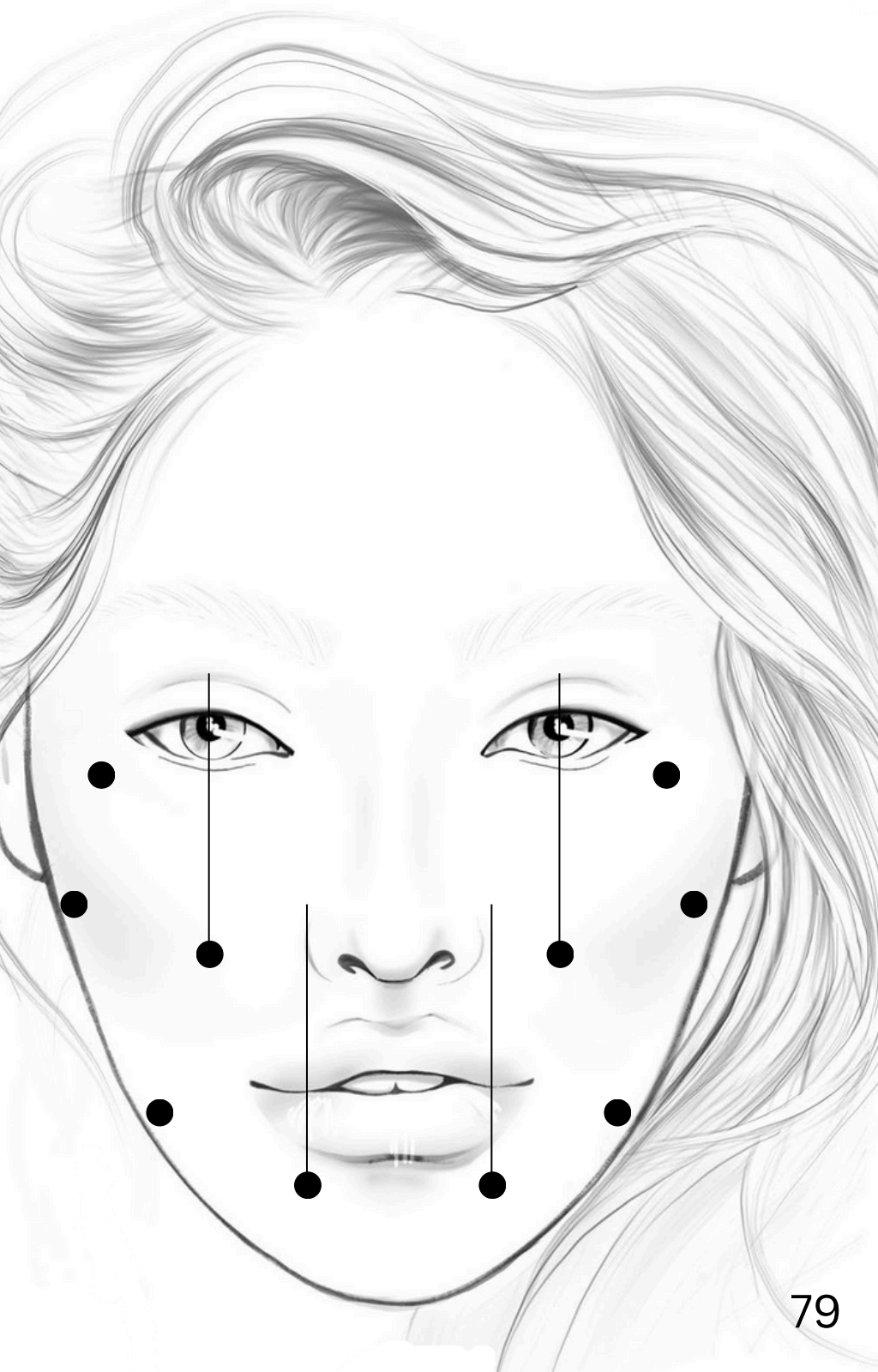
3 TRAGUS
1 cm anterior to the bottom of the tragus

4 CHIN
- draw a vertical line in the center of the chin
- draw a perpendicular line one third from the top of the vertical line
- from the point of intersection move 1.5 cm towards the oral commissures

5 MANDIBULAR ANGLE
1 cm above the mandibular angle


1
2
3
4
5



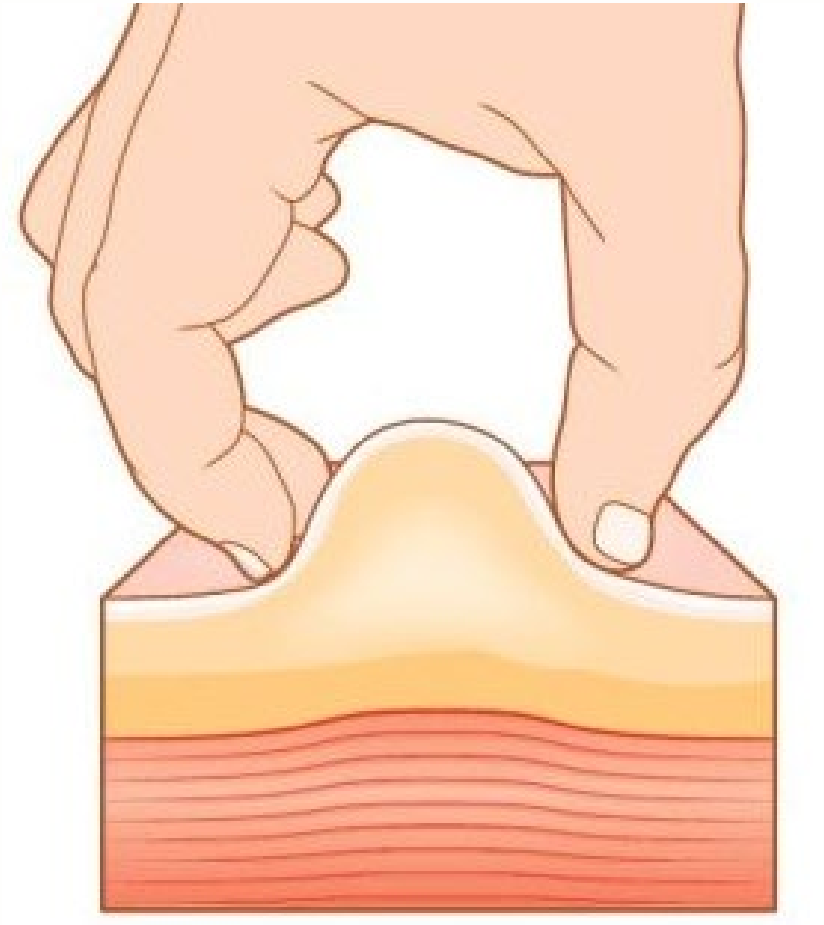


The BAP points for the neck

Again, there are 10 sites spread across the neck.

When injecting the neck pinch the skin and pull it away from the underlying structures.

The boluses/lumps on the neck can linger a bit longer on the neck that then do on the face. Warn the client that this is normal.



Lift the skin between the thumb and two fingers with one hand, pulling the skin and fat away from the underlying muscle.

Neck Remodelling

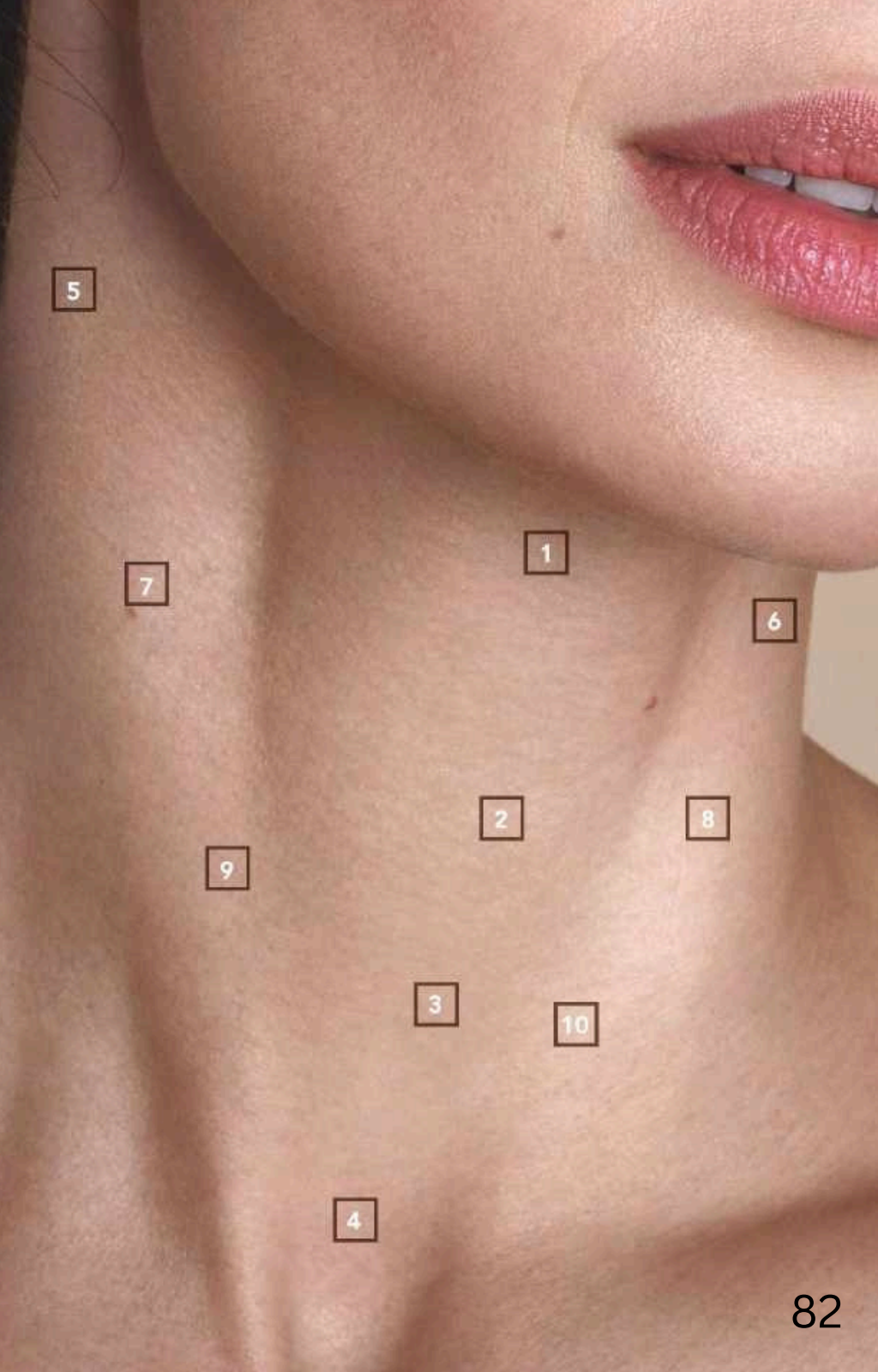
The 10 point BAP neck technique was developed in order to provide: reproducible points of injection, standardise these points irrespective of variations between client and and ensure that the inkcection points avoid vital structures.

Identify the 10 BAP injection sites on the neck

Pinch the skin at the injection point

Inject 0.2 ml per bolus transversely across the skin at the superficial subcutaneous layer

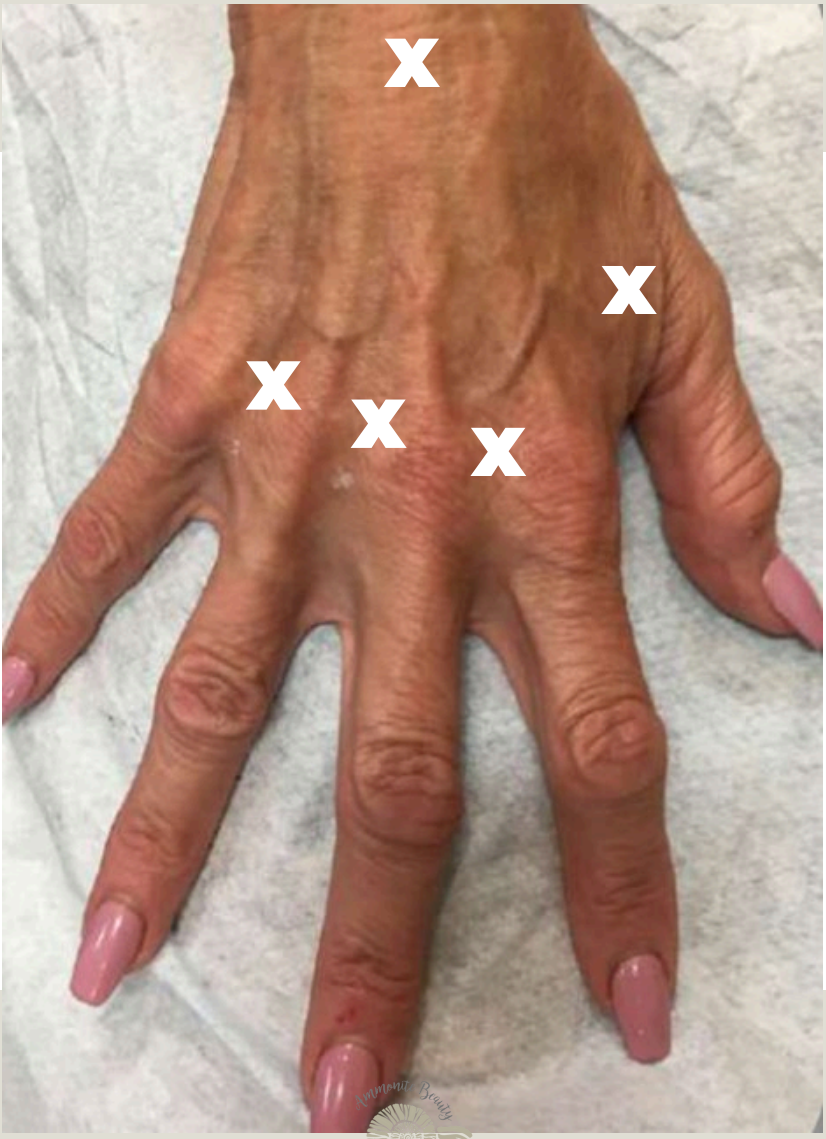
1. Midline between the submental border and hyoid bone
2. Midline between the apex of Adam's Apple and bottom of thyroid cartilage
3. Midline between the base of thyroid cartilage and sternal notch
4. Midline at the apex of sternal notch
5. Horizontal line with mandibular angle & 0.5 cm lateral
6. to medial border of the SCM (sternocleidomastoid muscle)
7. Horizontal line between apex of Adam's Apple and
8. bottom of thyroid cartilage
9. Horizontal line between the base of thyroid cartilage
10. and sternal notch


5
1
7
6
2
8
9
3
10
4

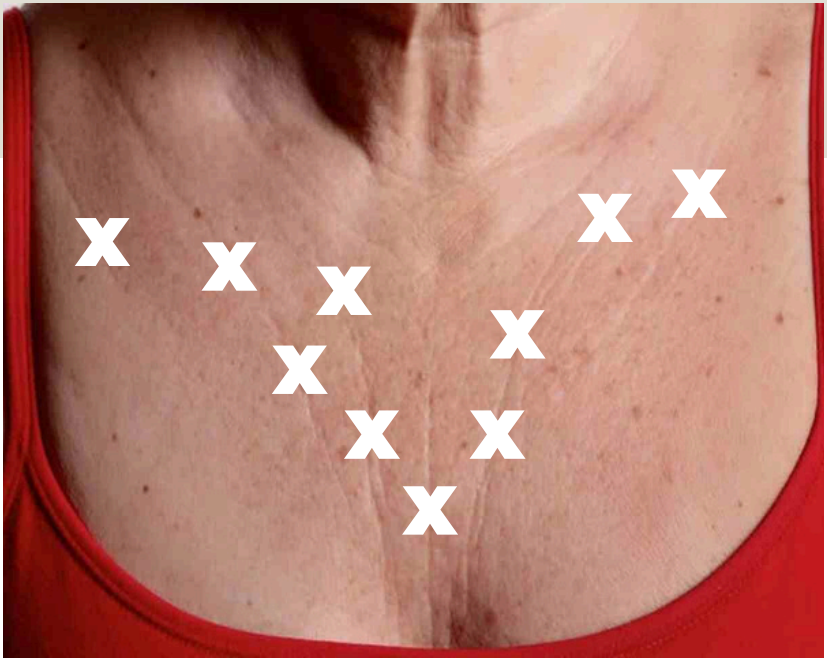
Other areas-

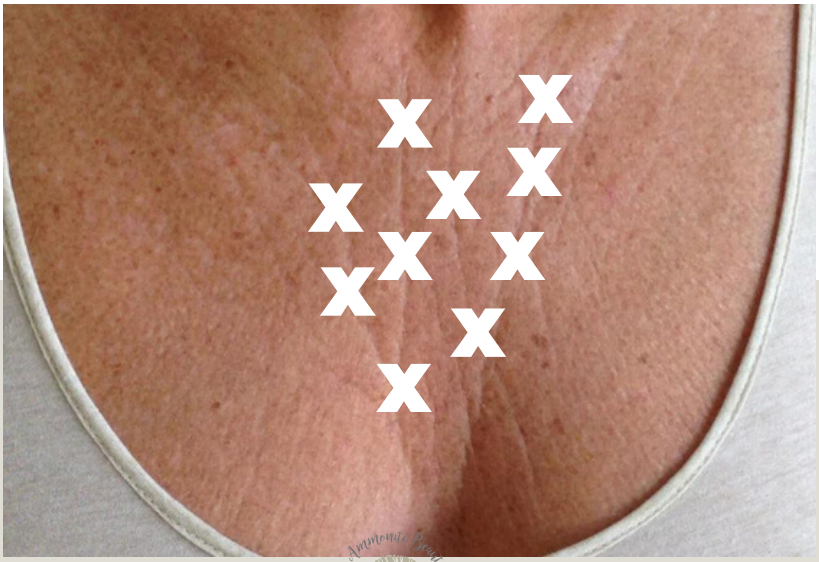
When injecting the hands, you adjust to each client to avoid any vascular areas that can be seen.

Inject between each metacarpal.



These have been spaced to target the key areas that need repairing. You can spread the 10 points over the area to be treated.





Contraindications

This is for SuneKOS, & TKN HA3 Advanced Skin Boosters

CONTRAINDICATIONS

Unfortunately not all treatments are for everyone. Please check our contraindications list to make sure you avoid disappointment. Conditions that would mean you were not able to have this treatments:

- Pregnant/Nursing
- HIV/AIDS
- Cancer (all forms)
- Undergoing chemotherapy or immune therapy
- Immunodeficiency
- Lupus
- High blood pressure (uncontrolled)
- Insulin dependent diabetics
- Prednisone and other steroid medications (treatment will increase inflammation)
- Heart problems or diseases
- Haemorrhagic disease, trauma or bleeding
- Scleroderma
- Family history of hypertrophic scarring or keloid formation
- Solar Keratosis
- Anticoagulants / Blood thinners (including but limited to Warfarin or aspirin)
- Nickel or stainless steal allergies
- Active Acne
- Pregnant or breastfeeding
- Clients under 18 years of age

Conditions that need a doctors letter to confirm the treatment is suitable before treatments can begin:

- Transplant Anti-Rejection Drugs
- Thyroid Disease
- Heart Disease
- Hypertension (High blood pressure treated with medication)
- Cancer - after 12 months
- Epilepsy

The list below is of things that require a waiting period until you can start treatments:

- Active skin infection of any type, such as herpes simplex, impetigo, flat warts. (wait until healed)
- Sunburn in the treatment area (wait until completely healed)
- Have bacterial or viral diseases of the skin (wait until clear)
- Inflammation (wait until healed)
- Laser treatments — face only — 4-6 weeks post treatment
- Active Herpes - cold sores — must take anti-viral meds 2 weeks pre and post treatment (peels & needling)
- Warts (avoid Area)
- Roaccutane (6 - 12 months post treatment)

Wait 3 months before commencing with treatments:

- Recent facial operations – must wait at least 3 months post surgery
- Tattooing / Cosmetic Tattooing (Treatment Area)

Wait 2 week before commencing treatments:

- Strong chemical peels - PH lower than 3.1.
- Botox and fillers
- Any recent invasive or stimulating skin procedures i.e. micro-dermabrasion, electrolysis, IPL
- Medications and supplements such as aspirin, vitamin E, ginkgo biloba, ginseng, St. John's Wort, Omega 3/Fish Oil supplements, Ibuprofen, aspirin and other NSAIDS have a blood thinning effect and can increase the risk of bruising and swelling after injections

Stop using/taking 1 week before commencing treatments:

- Anti-inflammatory medications such as ibuprofen. These will interfere with the natural inflammatory process that is critical for your skin rejuvenation.
- Waxing or depilatory creams
- Retin-A

Client pre-treatment Advice

Pre Treatment Advice

- Do NOT consume alcoholic beverages at least 24 hours prior to treatment (alcohol may thin the blood and increase the risk of bruising)
- Avoid anti-inflammatory/blood thinning medications, if possible for a period of 2 weeks before treatment. Medications and supplements such as aspirin, vitamin E, ginkgo biloba, ginseng, St. John's Wort, Omega 3/Fish Oil supplements, Ibuprofen, aspirin and other NSAIDS have a blood thinning effect and can increase the risk of bruising and swelling after injections.
- Discontinue Retin-A 2 days before and 2 days after treatment.
- Reschedule your appointment at least 24 hours in advance if you have a rash, cold sore or blemish on the area.
- If you have a history of cold sores please let your provider know, use your anti-viral medication prior to treatment.
- Be sure to have a good breakfast, including food and drink before your procedure. This will decrease the chances of light headedness during your treatment.

Aftercare:

- There may be some redness, swelling, tenderness, bruising which should settle within days.
- Drink plenty of water, this will help improve your treatment results
- Clean your face with a gentle cleanser and warm water
- Try to sleep on your back for the first night
- Try not to wear makeup.
- Use creams with antioxidants and hyaluronic acid to reduce irritation and hydrate the skin.
- Avoid active skincare products which contain: Alpha Hydroxy Acids, Beta Hydroxy Acids, Retinol (Vitamin A), and Vitamin C (in low pH formula). Continue to do so for 3 days post treatment.
- Avoid strenuous exercise for 24 hours.
- Avoid sun (and sunbeds), Saunas, Steam rooms or heat for 72 hours.
- Avoid consuming excess amounts of alcohol or salts to avoid excess swelling.
- If you have swelling you may apply a cool compress for 15 minutes each hour.
- Use Paracetamol for discomfort. Do not take Ibuprofen for two weeks after the treatment.
- Try to sleep face up and slightly elevated if you experience swelling.
- Take Arnica to help the bruising and swelling, start at least 2 days prior to injections.
- If you are planning to attend a special event when a bruise, should it occur, would be unacceptable to you.
- Results will not be immediate, but will develop over time. and a course of treatment will be required

Assessment Information

To ensure that you have understood the information you will be required to complete a knowledge test

To ensure that you are safe and competent to carry out the treatment you will be required to practice on models.

Assessment Requirements

In order to gain your certificate, you will be required to complete the Knowledge Review Questions. You will also be required to demonstrate the skills that you have learnt from watching and participating in the practical sessions. Once the tutor is satisfied with your test results and you have competently demonstrated the practical element of the training, your tutor will then issue you with your certificate. You will then need to contact your insurance provider to update your policy.
You have now reached the end of your course.

You should now be able to:

- Understand the relevant Health and Safety and Legislation regarding a Skin Boosters treatment
- Understand the relevant skin anatomy, physiology associated with performing the treatment.
- You should be able to carry out a client consultation, identify relevant contra indications, and possible reactions and risks.
- You should be able to understand the treatment preparation, and safely follow a treatment procedure.

Knowledge Review Questions

1. What is the purpose of using skin boosters?

2. What is the BAP technique?

3. Give 3 contraindications to the treatment:

1. _____

2. _____

3. _____

4. How often should the client come for a treatment?

5. What is Hyaluronic Acid?

a) A natural substance found in skin booster products
b) A Glycoaminoglycan found in the extra cellular matrix of the skin
c) A liquid in the skin
d) An anti-aging product

6. The Glogau Scale can be used to determine what?

a) Skin type
b) Hair type
c) Depth of wrinkles
d) Depth of scarring

7. How are skin boosters administered?

a) Subcutaneously
b) Intramuscular
c) Intradermally
d) Intravenous

8. The Glogau Scale: Which are being described:

Early wrinkling, sallow complexion with early actinic keratosis, requires little make-up. _____

Severe wrinkles, photoaging, history of skin malignancies, and make-up is a necessity. _____

9. True or False:

a) Hyaluronic Acid is the key ingredient in skin booster products
b) Tyrosinase inhibitors stop scarring
c) Hyaluronic Acid holds 1000 X it's weight in water
d) Tyrosinase inhibitor ingredients can include Vitamin C
e) Skin boosters can be used to treat pigmentation
f) Skin boosters can be used to treat ingrowing hairs
g) For maximum effect, skin boosters need to be combined with other skin treatments.

10. Fill in the missing words:

The visible signs of ageing are a combination of physiologic and environmental factors known as _____ and _____ factors. Over-exposure to _____ is one of the main factors responsible for skin damage, commonly referred to as sun damage, _____, actinic damage and UV-induced ageing.

Photo-ageing **Intrinsic**

Ultraviolet Radiation **Extrinsic**

11. List three products/ingredients that clients should avoid using after treatment:

1. _____

2. _____

3. _____

12. Elastin makes up what % of the skin?

a) 70%
b) 10%
c) 25%
d) 3%

13. Collagen makes up what % of the skin:

a) 70%
b) 10%
c) 25%
d) 3%

14. Give 3 signs of visible ageing:

1. _____

2. _____

3. _____

15. As an aesthetic practitioner, you are NOT qualified to diagnose medical conditions. YES / NO

WELL DONE!
You have now completed the Knowledge Review Questions. Please allow your educator to mark these.

TOTAL MARKS:

Skin Boosters Practical Training Information

Practical

- Although we do our best to supply models, sometimes this is not always possible and you may be required to work on each other. To ensure minimal skin trauma, please avoid blood thinning agents as listed below, avoid sun exposure, and do not peel the treatment area for 7days prior to the treatment.
- Models have been asked to refrain from taking the following for 7 days prior to treatment. Aspirin, Ibuprofen, St Johns Wort, Dong Quai, Ginseng, Gingko Biloba, Feverfew,
- We advise models to take antiviral treatments if they have a history of cold sore outbreaks, 7 -10 days prior to a lip filler treatment.
- In order for you to have the treatment as part of the training, you will be required to fill in a consultation form and follow the steps above.

Treatments- Time lapse required:

- Deep Chemical Peels (3mths post)
- Microdermabrasion (3-4wks)
- Botox and Fillers (2wks)
- Electrolysis, Waxing (2-3wks)
- IPL, Laser (1 mth post)

Blood thinning agents

- Asprin
- Ginger
- Vitamin E
- Blood thinning medication

Please check the contraindications list. Should you have any contraindications you will need to make your assessor aware before treatment commences.

Practical Assessment

To ensure that you are safe and competent to practice you will need to demonstrate your treatment for the tutor/trainer.

You will be assessed on the following criteria:

Date of Assessment:	**Tutor/Assessor:**	
Treatment:		
Criteria	**Assessor Comments**	**Criteria passed Y / N**
Health & Safety: • Sterilisation & Sanitation • Correct PPE • Correct Sharps disposal • Personal appearance		
Client Consultation • Treatment and possible risks explained to client • Consultation forms filled in and signed • Aftercare advice given		
Treatment: • Correct client position for treatment • Correct products selected • Correct treatment procedure followed • Rebooking / treatment follow up advised		

Verbal Questioning

During your practical assessment, the assessor will be asking you some verbal questions. Here are ten example questions that you will most likely be asked during your assessment:

1. Which area will you be treating?
2. What is the dosage amount for this area?
3. What contraindications are specific to this treatment?
4. What is the treatment plan that you will recommend for your client?
5. What are the key ingredients of the product?
6. What other areas can be treated?
7. When would you use the BAP technique?
8. What common reactions can occur?
9. What aftercare can you recommend for your client?
10. What would you do if your client states that they have an aversion to needles?

Conclusion

We have now covered the training necessary for you to carry out Skin Boosters treatment. You should now be able to understand how Skin Boosters work to enhance the appearance of the skin as well as how to safely administer the product, consult with the client for the best treatment outcome.

Skin Booster treatments are great to include on your treatment menu, especially for those clients who are concerned with thinning lips or just want to enhance what they already have

Prices vary across the UK so it is best to research your area and see what other salons are offering, however cheaper doesn't always mean better.

Thankyou for attending, and I hope to see you on one of my other courses in the future

This page has been left blank for your notes:

To see what other trainings I offer, follow me on my socials.

Ammonite Beauty

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