



Unit 2

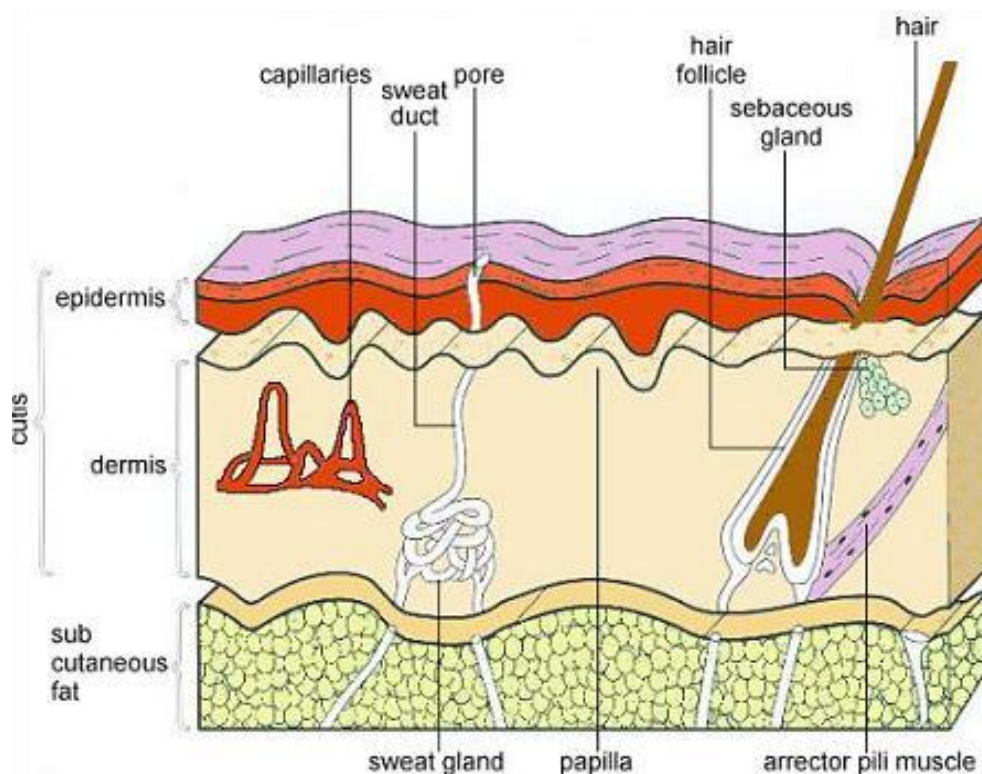
Related Anatomy and Physiology

Skin

Skin performs various functions in our body. Like a waterproof jacket – it protects the body from dirt, bacteria and injury. It can mould to different shapes, stretch and harden. It responds to hot and cold, pain and pressure, so it is an effective communicator. The body produces oils to keep the outer layer of skin soft, smooth, free from splits and cracks that would otherwise let the germs in. Skin alters from season to season and from year to year. It reflects our general health, life style and diet. It makes up of about 12% of an individual's body weight. Skin consists of three layers.

- The epidermis
- Dermis
- The subcutaneous layers

The upper layer of the skin called epidermis mostly consists of dead skin cells. Skin is constantly flaking off. This is to allow for new skin underneath replacing it. The inner layers of the skin are constantly moving up to replace the outer layers of the skin that have been shed. Skin takes about 28 days to renew itself completely. Skin becomes drier as we get older. It is the largest organ of the body and it provides an unbroken covering to the whole body.





The Epidermis

It is the outer most layer of our skin. The epidermis is located directly above the dermis. It is composed of five layers, with the surface layer forming the outer layer- what we can see and touch. The main function of the epidermis is to protect the deeper living structures from the harmful effects of external environment. Each layer of epidermis is recognised by its shape and by the functions of its cells.

The five layers of epidermis are:

- The horny layer
- Clear layer
- Granular layer
- Prickle cell layer
- Basal cell layer

Layers 1 to 3 the horny, clear and granular layers are dead and are constantly being shed. But Prickle cell layer and basal cell layers are living layers- containing nucleus and therefore can reproduce.

Basal layer is the lower most layer of epidermis. It is formed from a single layer of column shaped cells. These cells divide continuously and produce new epidermal cells known as keratinocytes. This process of cell division is called mitosis. Prickle cell layer is formed from two to six rows of elongated cells; these have a surface of spiky spines which connect to surrounding cells.

Granular layer is composed of one, two or three layers of cells. These are known as keratohyaline granules and later form keratin.

The keratinisation zone is where the cells begin to die and where finally they will be shed from the skin.

The Dermis

The dermis is the inner portion of the skin. It is much thicker than the epidermis. This is true skin which contains many structures. It is subdivided into two parts:

- Papillary layer
- Reticular layer

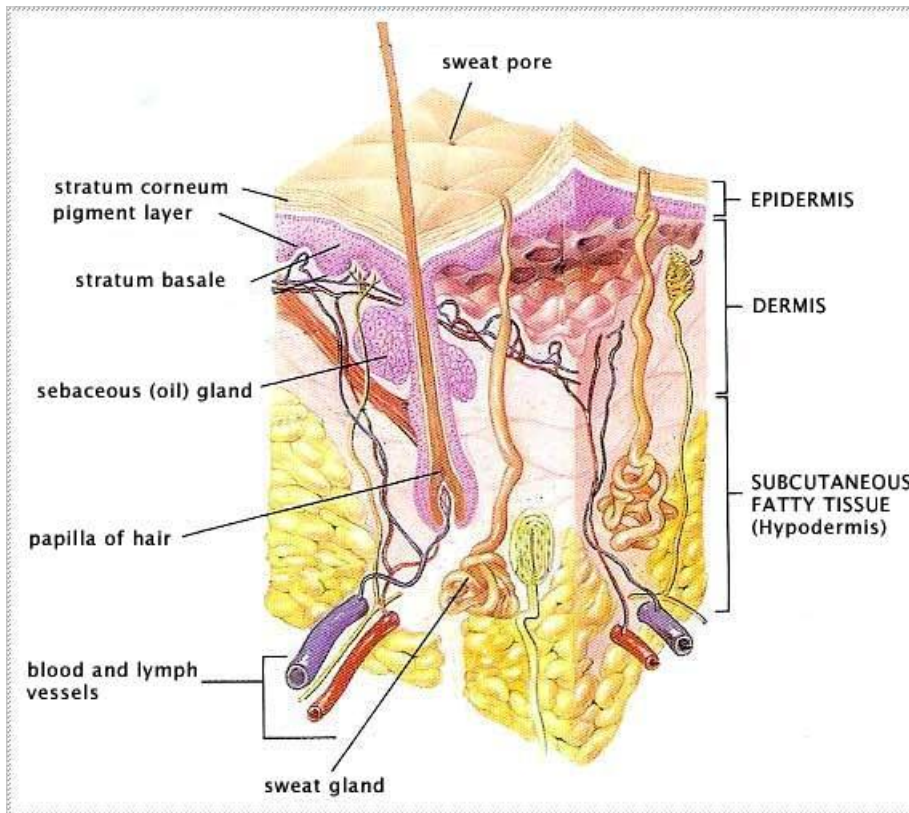
The Papillary Layer

Papillae are tiny projections near the surface of dermis. These contain both nerve endings and capillaries. This part of dermis supplies the upper epidermis with its nutrition.



The Reticular Layer

The reticular layer is a network of protein fibres. These fibres allow the skin to expand, to contract and to perform supple movements. As long as this network is strong, the skin appears youthful and firm. But when the network loses its elasticity, the skin begins to show visible signs of ageing.



The Subcutaneous Tissue

This is the fatty layer of the skin, underneath the dermis. The job of subcutaneous tissue is:

- To protect the muscles, bones and internal organs from being damaged.
- To provide insulation against the cold
- To provide a source of energy if the body needs it.

Remember

Sebaceous glands are not present on the surface of the lips. Therefore in order to prevent the lips from becoming dry, protect them with lip emollient preparation.

The Nails

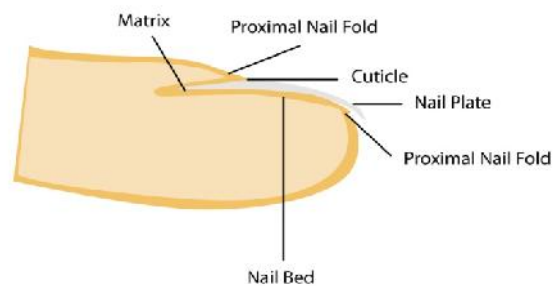
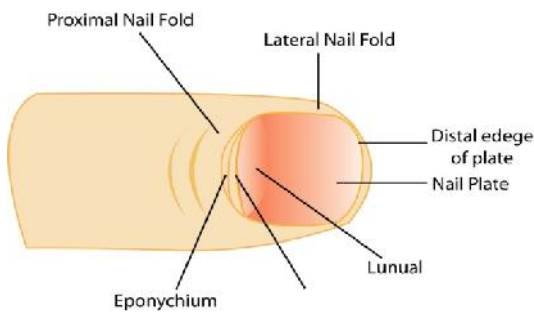
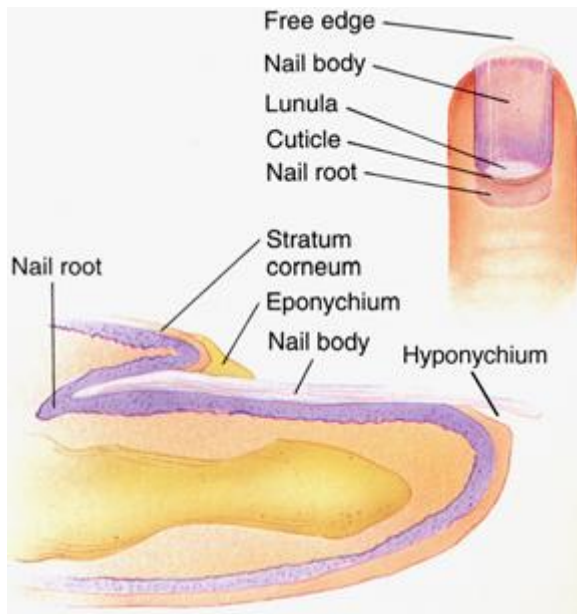
Nails are the hardened growth on the ends of the fingers and toes. They serve as a form of protection and help when picking up small objects. Their cell formation is similar to that of skin.



Structure

The Nail Plate

It is composed of compact translucent layers of keratinised epidermal cells. This makes up the main body of the nail. The nail gradually grows forward over the nail bed, until it becomes a free edge.



The Free Edge

The free edge is the hardest part of the nail. It grows past the end of the nail bed and fingertip. If you break this part of the nail it does not hurt because it is not joined to blood vessels.



The Matrix

The matrix is sometimes called the nail root. Its function is to grow and replace the cells that form the nail. The quality, strength and health of the nail are therefore decided in the matrix.

The Nail Bed

The nail bed is the healthy soft tissue beneath the nail plate. It is liberally supplied with blood vessels, which provide the nourishment necessary for continued growth. It gives the nail its pink appearance.

The Lanula

The lanula is located at the base of the nail. It is the visible part of the matrix. It is also known as the half moon. It is found on all nails but on some it is easier to see.

The Nail Wall

The nail walls are the folds of the skin overlapping the sides of the nails. When in good condition it is soft and loose. Its function is to protect matrix from infection.

The Cuticle

It is found at the base of the nail. It protects matrix against the germs by forming a barrier.

Nail Growth

The growth of the nail can be affected by poor diet, illness, medication, age, injury to matrix or nail bed, or neglect. A healthy nail grows an average of 1mm per week for finger nail and 0.5mm for toe nails.

A healthy nail should have;

- Supple unbroken cuticle
- No inflammation
- A natural sheen
- A pink glow
- No spots
- An unbroken free edge

Activity

Observe your nails closely. Write down both- the parts that you can see and the parts that you cannot.

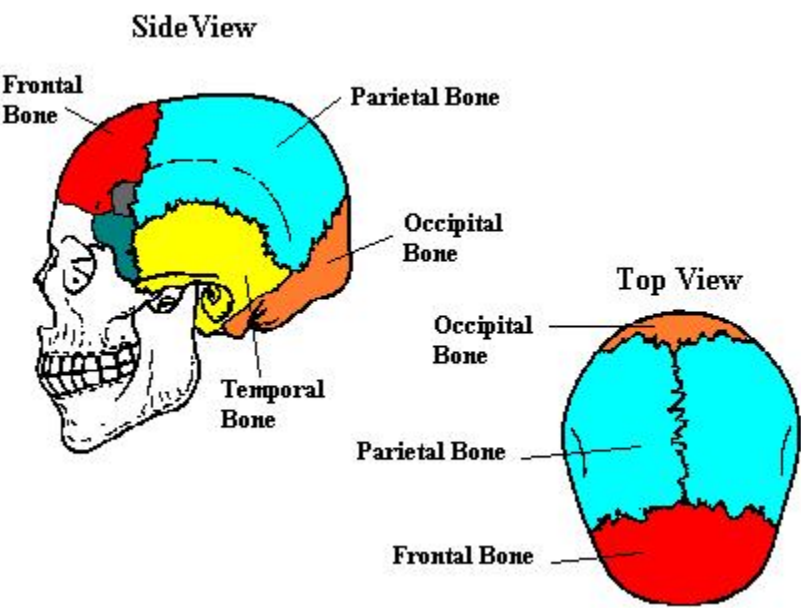


Muscles of Face Neck and Shoulders

Underneath the skin are muscles and bones. Each muscle adds shape to the face. Muscles also allow for facial movements. Bones provide support for the muscles and protect the brain and facial organs from injury.

Bones of Face and Skull

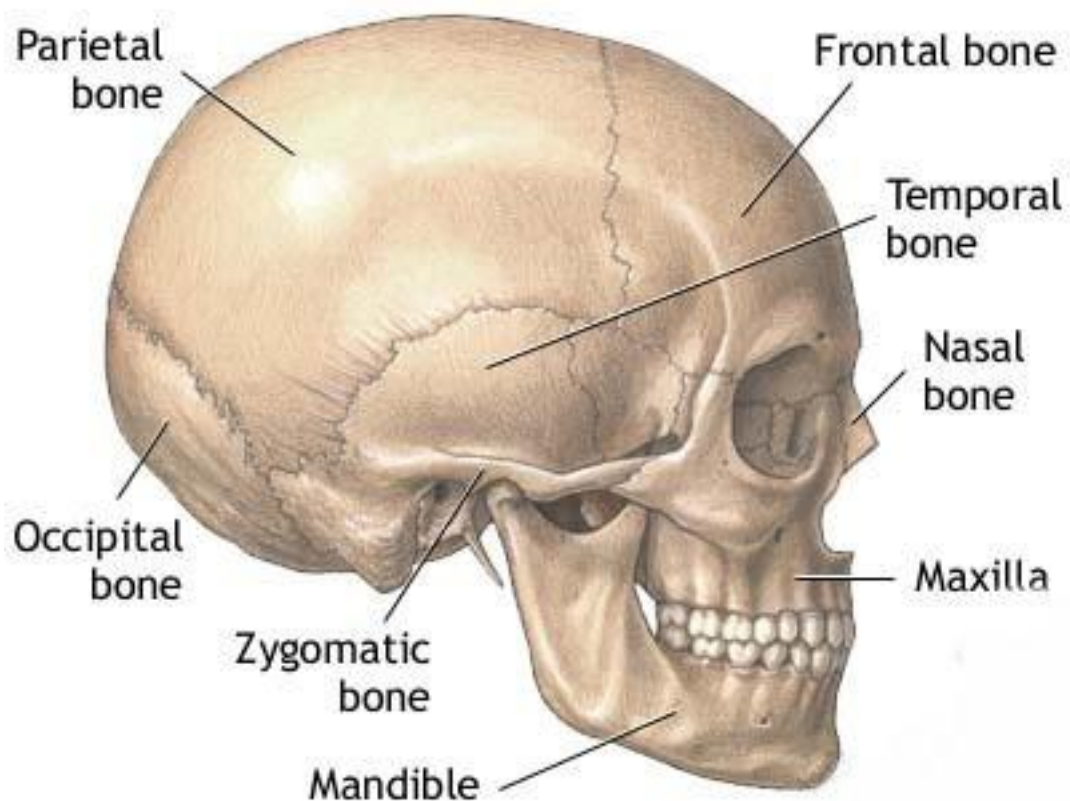
The bones of face and skull keep muscles of the head in place. They protect the brain and other parts of the head from injury. There are twelve bones in the head in total. The skull is made up of five bones.



Bone	Position
Occipital	lies at the back of skull
Parietal	Lies at the back of head and forms the roof of skull
Frontal	Forms the front of the skull, forehead, upper eye
Temporal	Sockets at the side around ears



The face is made up of seven bones.



The Hair

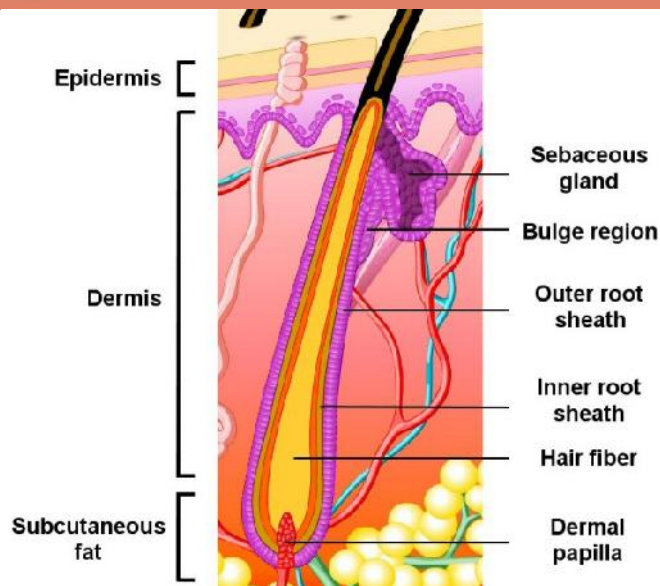
Different types of hair can be found on the body. These can be divided into two types.

- Vellus
- Terminal

Vellus; is soft downy hair covering most of the body. This type of hair is usually straight due to which the follicles are not very deep.



Beauty Therapy



Remember

Vellus hairs grow slowly and take about 2-3 months to return after waxing.

Terminal; it grows from deep follicles, which go down to the subcutaneous layer of the skin. They are strong hairs which contain pigment and grow on the scalp, eye brows under the arms and public areas.

Hair Growth

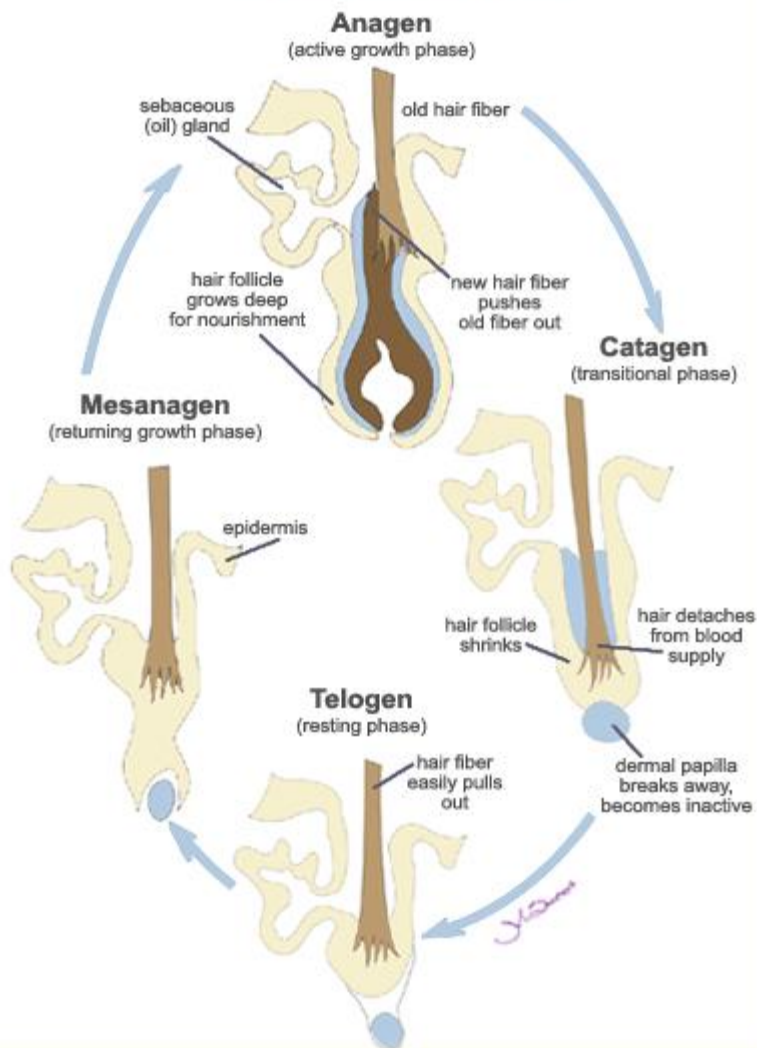
Normal hair in the body is contained in the tube shaped pocket called a follicle. The hair is made of hardened protein called keratin. Outside of the hair is a scaly layer called the cuticle. The hair grows from the bottom of its cuticle by cell division, being fed by a good blood supply from the dermal papilla.

The life of a normal hair is divided in to three stages:

1. Anagen
2. Catagen
3. Telogen



Hair Growth Cycle



Anagen

In this stage the hair receives nourishment from dermal papilla through blood.

Catagen

In this stage the dermal papilla breaks away and the lower end of the hair becomes loose from the base of the follicle. This is considered the resting stage of the hair follicle.

Telogen

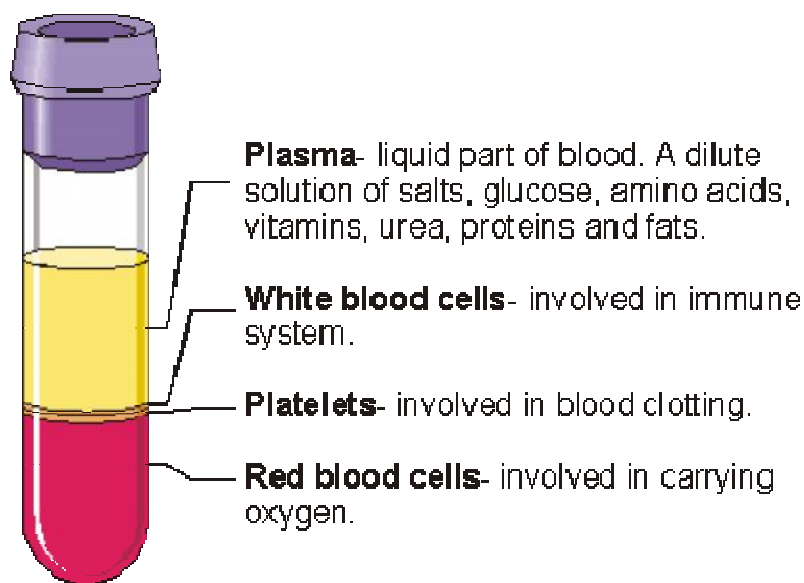
This is the final stage of the hair growth. Telogen lasts for few weeks, with the club hair often being retained until new hair is produced- pushing the club hair out.



Blood

Blood transports various substances around the body. It is pumped around the body by the heart. Arteries, veins and capillaries are the vessels that carry the blood to their destination.

Oxygenated blood flows from the heart through the arteries. Deoxygenated blood flows back to the heart through the veins. Blood consists of 55% plasma and 45% blood cells.



Plasma is a yellow transparent fluid which mainly consists of water. Small amount of proteins are also present in it.

There are three types of blood cells.

Red blood cells

These transport oxygen to the cells and take away carbon dioxide.

White blood cells

Their main function is to protect the body, destroying foreign bodies and dead cells and carrying away the debris (a process known as phagocytosis)

Platelets

Platelets play an important role in blood clotting.



Functions of the blood

Transport

- Blood takes oxygen from the lungs to the body cells.
- It takes carbon dioxide from the cells to the lungs.
- It supplies nutrients to the cells
- Medication is passed to the cells through blood
- Hormones are passed to the cell through blood

Regulation

Blood regulates water contents of the cells. It also regulates body heat.

Protection

Blood provides protection against infection and diseases. It protects against blood loss by clotting.

The Effects of Massage on Blood Circulation

- Massage speeds up the flow of blood through the veins. This helps with the metabolic waste being carried away.
- It brings oxygenated blood and nutrients to the cells. In this way it helps in cell's growth and repair.
- The increase in the blood flow creates warmth which is relaxing to the client.
- Massage also increases the muscles efficiency.
- The skin feels softer after massage.
- The removal of the waste products give toned effect to the muscles.

The Lymphatic System

The lymphatic system is closely connected to the blood system, and can be considered supplementing it. It carries away waste from the tissues that the blood can not manage to take. The fluid that is left behind is called the lymph. The removal of lymph from the body prevents the tissues from becoming clogged and swollen. The lymphatic system plays an important role in protecting the body against infection. The lymph moves through the glands or nodes. It is here that the lymph is filtered of bacteria and germs and antibodies are produced to fight against infection. Facial massage plays an important part in assisting this flow of lymph fluid, thereby encouraging the improved removal of waste products transported in the lymph.



Composition of Lymph

Lymph consists of;

- Plasma
- Proteins
- Waste products
- Toxins
- Fats
- Oxygen
- Carbon dioxide
- Urea
- Lymphocytes

Function of the Lymph System

The purpose of the lymph is to collect germs, bacteria and waste in the system, then to carry these to the lymph glands, where it is filtered and is made harmless.

The Benefits of Treatments on the Lymph System

- Massage stimulates the flow of lymph hence the toxins and fluids are removed from the area.
- General swelling can be reduced by massage.
- It helps in cell renewal and therefore skin feels softer.
- Muscles feel more relaxed after massage.