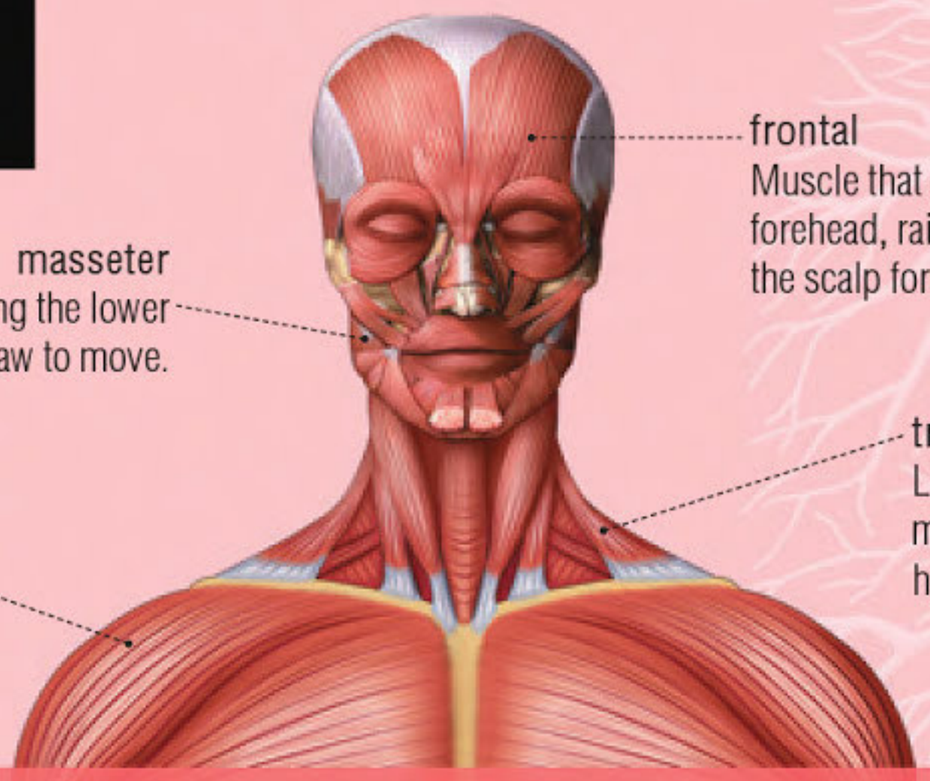
THE VISUAL DICTIONARY OF

THE HUMAN BEING

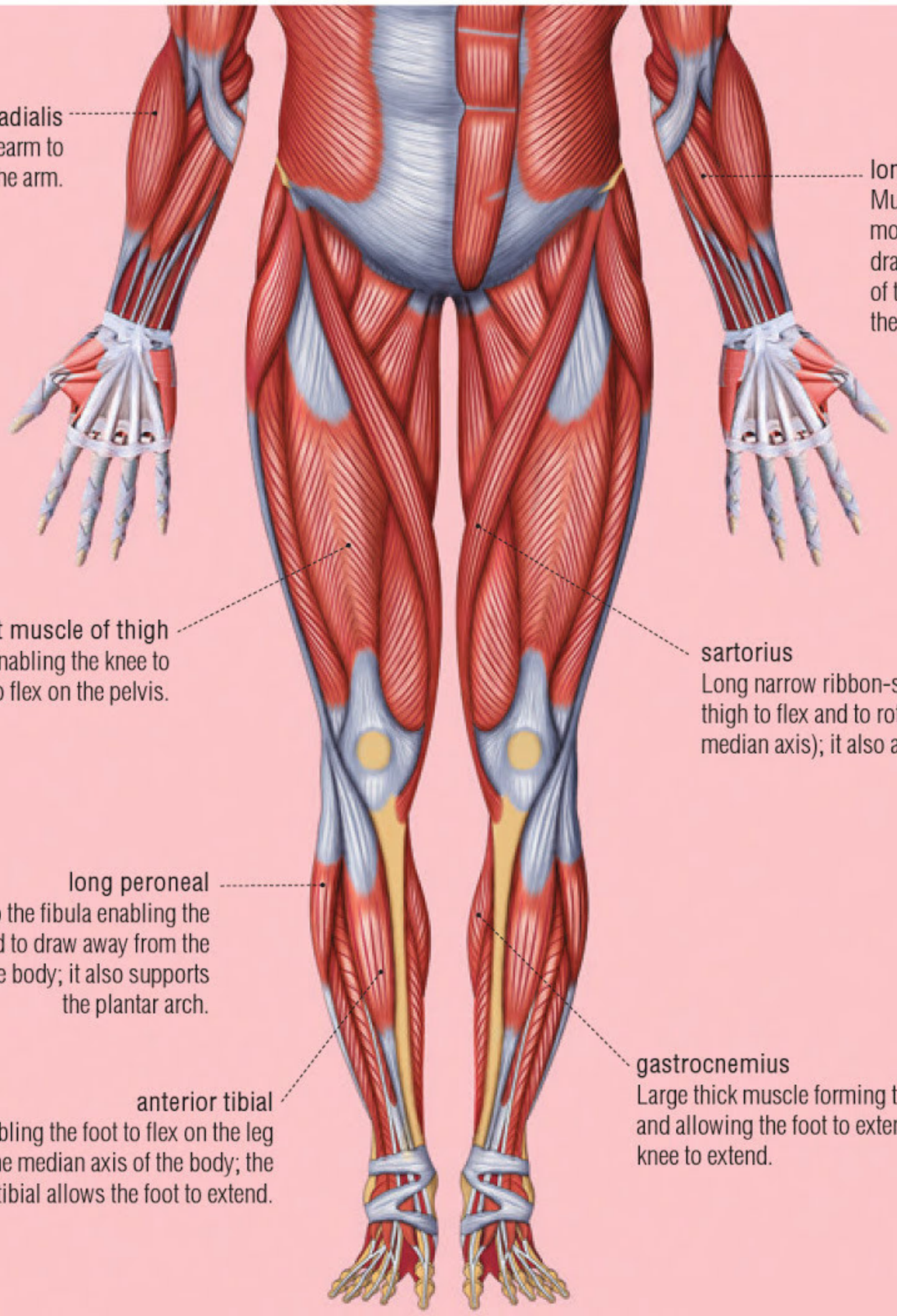


frontal
Muscle that creases the skin of the forehead, raises the eyebrows and pulls the scalp forward.

masseter
Masticator muscle enabling the lower jaw to move.

trapezius
Large flat triangular muscle enabling many shoulder movements; it also helps to extend the head.

deltoid
Thick triangular muscle drawing the arm away from the median axis of the body and directing it toward the front and back until it is horizontal.



brachioradialis
Muscle mainly enabling the forearm to flex on the arm.

long palmar
Muscle enabling various hand movements, including flexing it and drawing it away from the median axis of the body; it also helps to stabilize the wrist.

straight muscle of thigh
Powerful muscle enabling the knee to extend and the thigh to flex on the pelvis.

sartorius
Long narrow ribbon-shaped muscle enabling the thigh to flex and to rotate outwardly (outside the median axis); it also allows the leg to flex.

long peroneal
Muscle attached to the fibula enabling the foot to extend and to draw away from the median axis of the body; it also supports the plantar arch.

anterior tibial
Thick muscle enabling the foot to flex on the leg and to draw near the median axis of the body; the posterior tibial allows the foot to extend.

gastrocnemius
Large thick muscle forming the curve of the calf and allowing the foot to extend; it also helps the knee to extend.

THE HUMAN BEING

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QA INTERNATIONAL

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INTRODUCTION

EDITORIAL POLICY

The Visual Dictionary takes an inventory of the physical environment of a person who is part of today's technological age and who knows and uses a large number of specialized terms in a wide variety of fields.

Designed for the general public, it responds to the needs of anyone seeking the precise, correct terms for a wide range of personal or professional reasons: finding an unknown term, checking the meaning of a word, translation, advertising, teaching material, etc.

The target user has guided the choice of contents for *The Visual Dictionary*, which aims to bring together in 12 thematic books the technical terms required to express the contemporary world, in the specialized fields that shape our daily experience.

STRUCTURE

Each tome has three sections: the preliminary pages, including the table of contents; the body of the text (i.e. the detailed treatment of the theme); the index.

Information is presented moving from the most abstract to the most concrete: sub-theme, title, subtitle, illustration, terminology.

TERMINOLOGY

Each word in *The Visual Dictionary* has been carefully selected following examination of high-quality documentation, at the required level of specialization.

There may be cases where different terms are used to name the same item. In such instances, the word most frequently used by the most highly regarded authors has been chosen.

Words are usually referred to in the singular, even if the illustration shows a number of individual examples. The word designates the concept, not the actual illustration.

DEFINITIONS

Within the hierarchical format of *The Visual Dictionary*'s presentation, the definitions fit together like a Russian doll. For example, the information within the definition for the term *insect* at the top of the page does not have to be repeated for each of the insects illustrated. Instead, the text concentrates on defining the distinguishing characteristics of each insect (the *louse* is a parasite, the female *yellow jacket* stings, and so forth).

Since the definition leaves out what is obvious from the illustration, the illustrations and definitions complement one another.

The vast majority of the terms in the *Visual Dictionary* are defined. Terms are not defined when the illustration makes the meaning absolutely clear, or when the illustration suggests the usual meaning of the word (for example, the numerous *handles*).

METHODS OF CONSULTATION

Users may gain access to the contents of *The Visual Dictionary* in a variety of ways:

- From the TABLE OF CONTENTS at the end of the preliminary pages, the user can locate by title the section that is of interest.
- With the INDEX, the user can consult *The Visual Dictionary* from a word, so as to see what it corresponds to, or to verify accuracy by examining the illustration that depicts it.
- The most original aspect of *The Visual Dictionary* is the fact that the illustrations enable the user to find a word even if he or she only has a vague idea of what it is. The dictionary is unique in this feature, as consultation of any other dictionary requires the user first to know the word.

TITLE

Its definition is found below. If the title refers to information that continues over several pages, after the first page it is shown in a shaded tone with no definition.

DEFINITION

It explains the inherent qualities, function, or characteristics of the element depicted in the illustration.

TERM

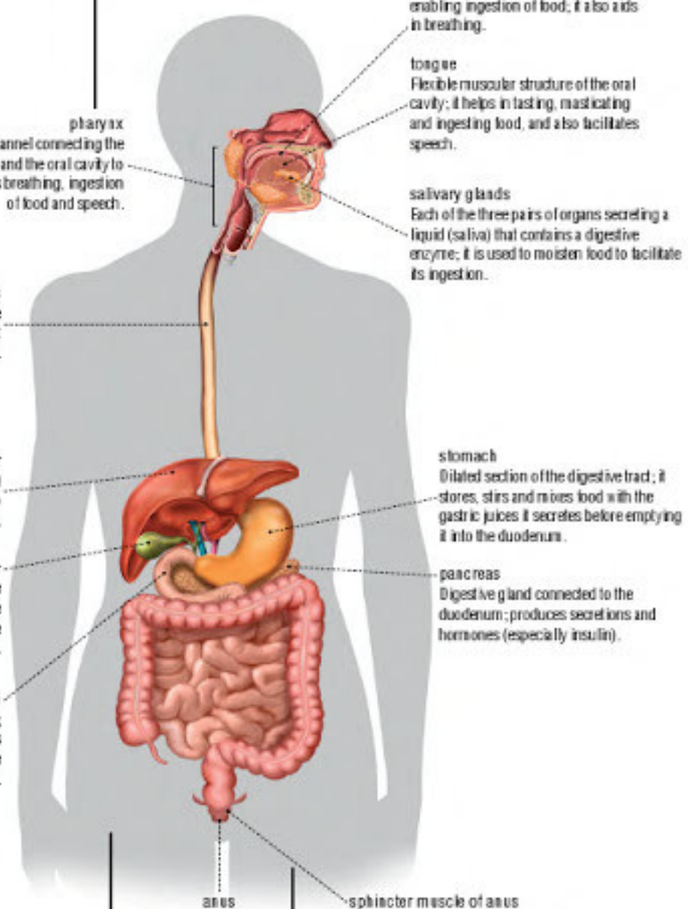
Each term appears in the index with a reference to the pages on which it appears.

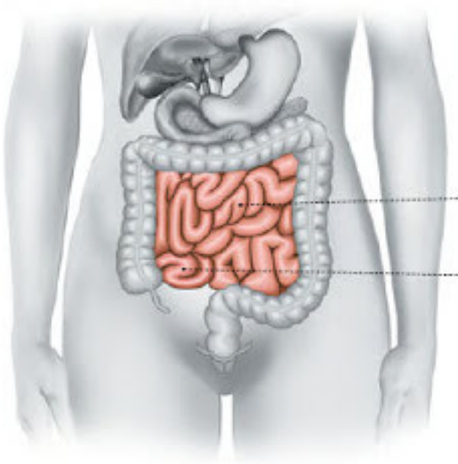
SUB-THEME

These are shown at the end of the preliminary pages along with their definitions. They are then repeated on each page of a section, but without the definition.

digestive system

Formed of the mouth, digestive tract and appended glands, it converts ingested food so that it can be assimilated by the organism.



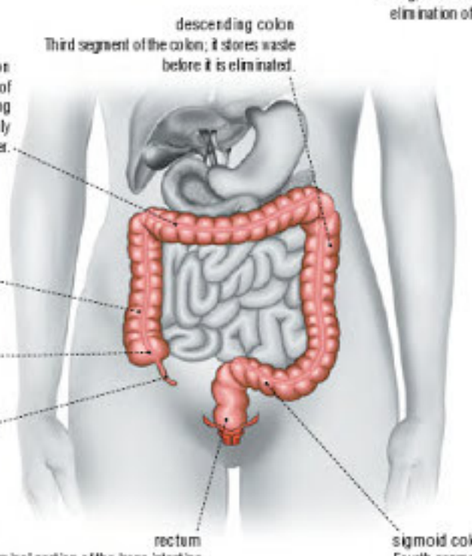


small intestine
Narrow section of the digestive tract, about 20 ft long, between the stomach and cecum, where a part of digestion and food absorption occurs.

jejunum
Middle section of the small intestine between the duodenum and the ileum; the majority of nutrients are absorbed here.

ileum
Terminal part of the small intestine between the jejunum and cecum.

large intestine
Last wide section of the digestive tract, about 5 ft long, where the final stage of digestion and elimination of waste occurs; it includes the colon and the rectum.



ILLUSTRATION

It is an integral part of the visual definition for each of the terms that refer to it.

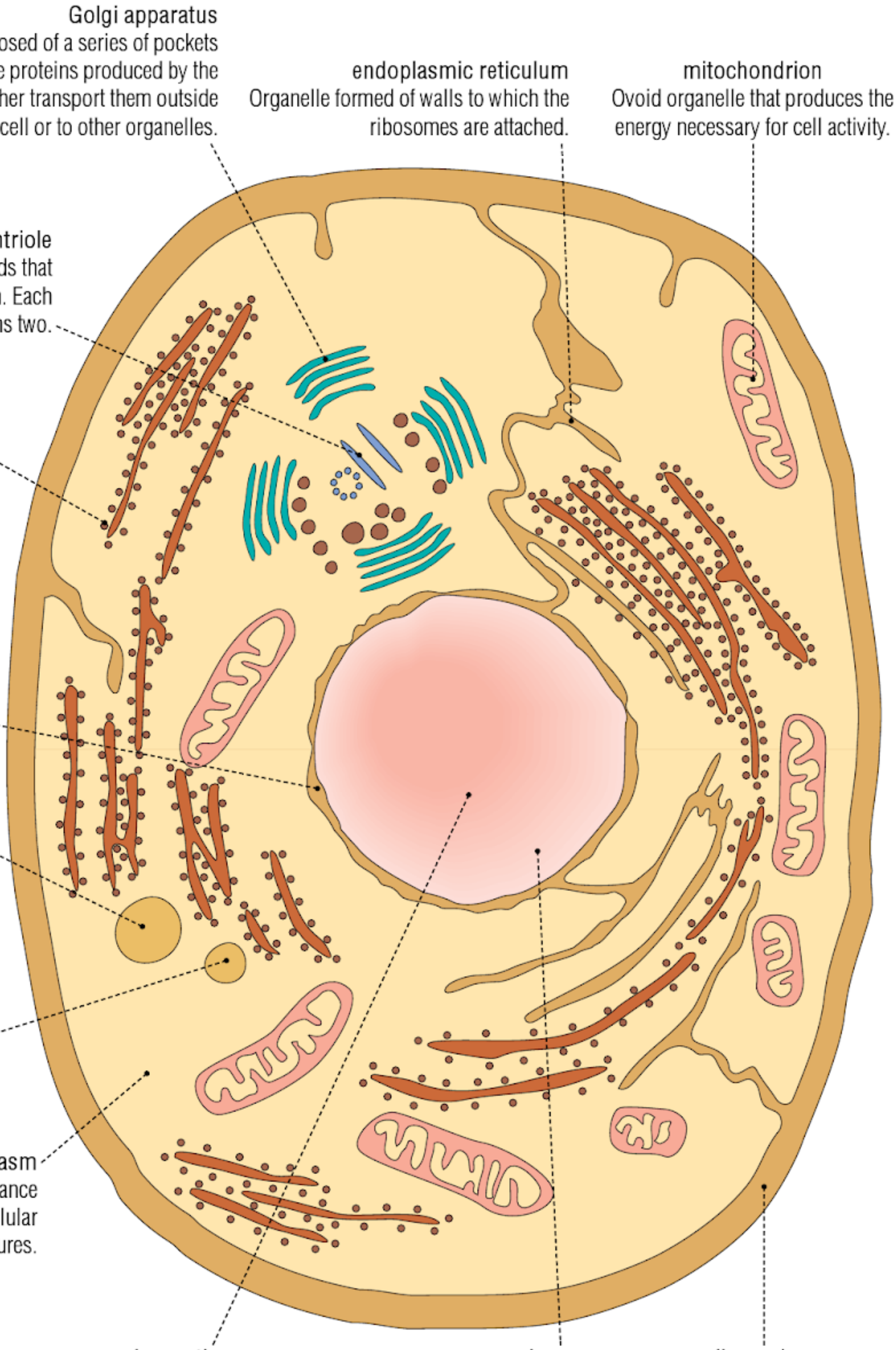
NARROW LINES

These link the word to the item indicated. Where too many lines would make reading difficult, they have been replaced by color codes with captions or, in rare cases, by numbers.

CONTENTS

human cell

Smallest living structure and constituent unit of human beings; the sizes and shapes of cells vary according to their function.



Golgi apparatus
Organelle composed of a series of pockets that receive proteins produced by the ribosomes and either transport them outside the cell or to other organelles.

endoplasmic reticulum
Organelle formed of walls to which the ribosomes are attached.

mitochondrion
Ovoid organelle that produces the energy necessary for cell activity.

centriole
Structure consisting of small rods that play a major role in cell division. Each cell usually contains two.

ribosome
Organelle, free or attached to the endoplasmic reticulum, producing proteins essential to the constitution and functioning of living beings.

nuclear envelope
Envelope formed of two layers surrounding the nucleus and pierced with small holes, which allow exchanges between the cytoplasm and the nucleus.

lysosome
Small spheroid organ containing enzymes that break down food, spent cell components and other harmful substances that have been absorbed.

vacuole
Spherical cavity containing water, waste and various substances required by the cell.

cytoplasm
Clear gelatinous substance surrounding the various cellular structures.

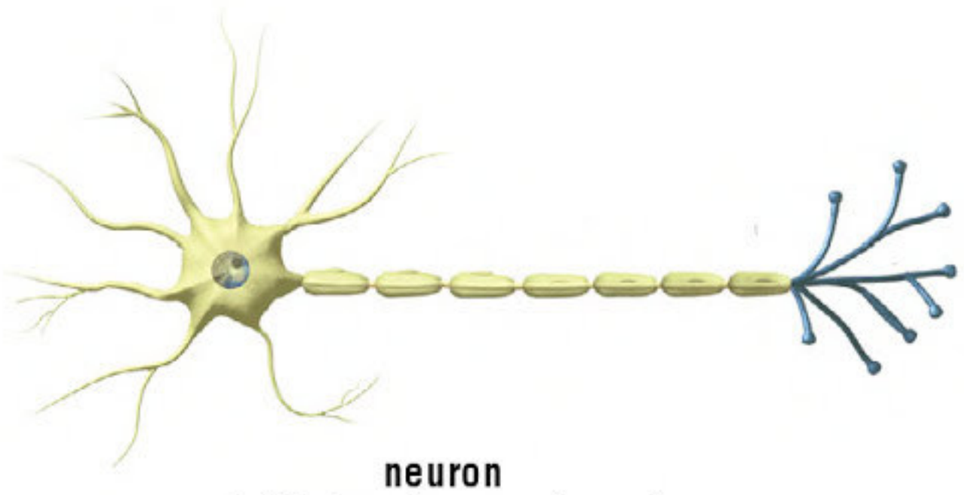
chromatin
Mass of very fine filaments of DNA, the genetic material of the cell; it is compressed into chromosomes during cell division.

nucleus
Organelle containing a cell's genes and controlling its activities.

cell membrane
The cell's flexible outer casing; it separates the cell from the surrounding environment and works as a filter to control the entry and exit of certain substances.

examples of cells

The human body contains some 200 types of cells. All cells have the same general structure but are adapted according to their function in the body.



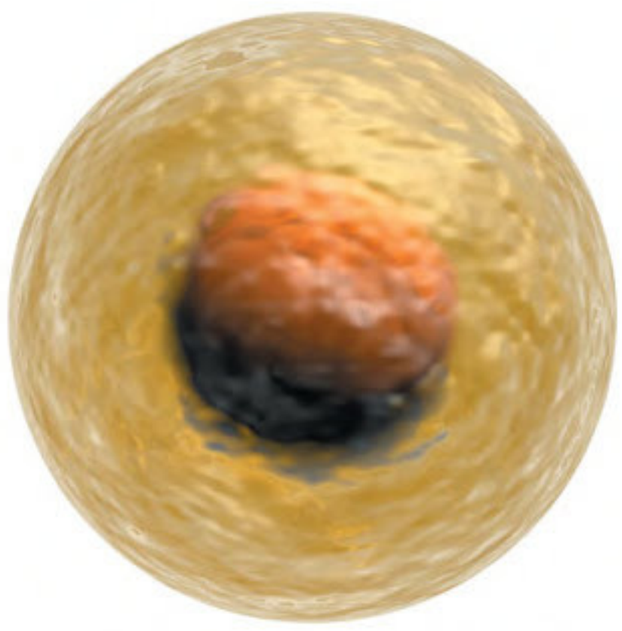
neuron
Cell that receives, carries, and transmits messages in the form of nerve impulses.

photoreceptor
Nerve cell in the retina that converts light into nerve impulses; these are transmitted to the cerebrum, which decodes them and forms an image.

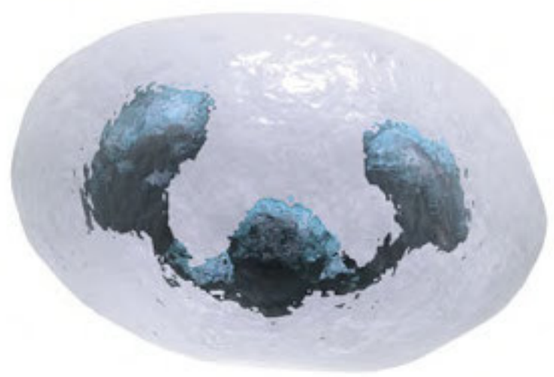
spermatozoon
Mature and mobile reproductive male cell produced by the testicle; the main constituent of the sperm used to fertilize an egg.

osteocyte
Irregularly shaped cell making up bony tissue.

red blood cell
Blood cell that transports oxygen and contains a pigment (hemoglobin); red blood cells are the most numerous.



egg
Mature female reproductive cell produced by the ovary, which, after fertilization by a spermatozoon, enables the embryo to develop.



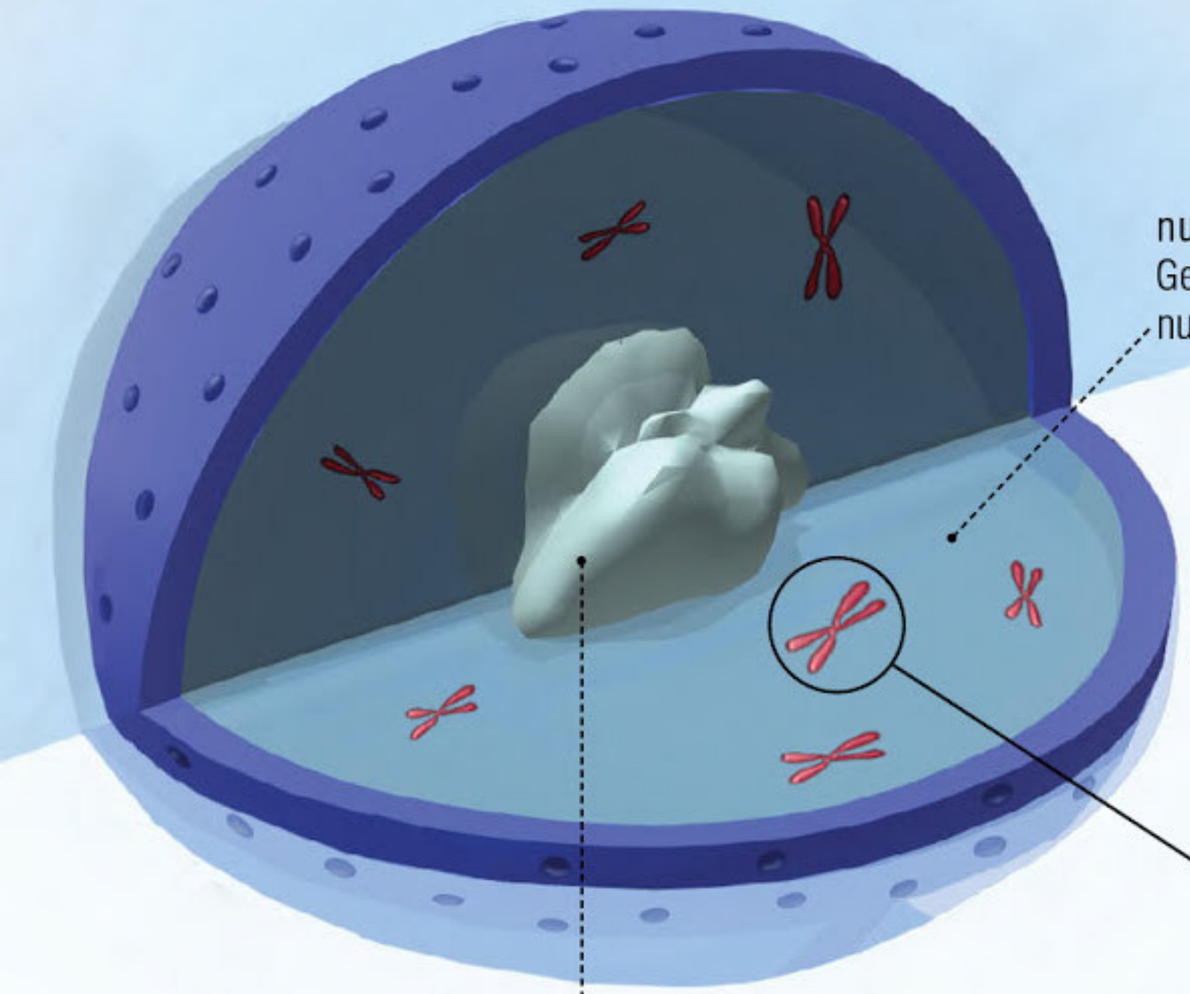
neutrophil
Blood cell that plays an essential role the body's defense, characterized by a nucleus with several lobes and a granular cytoplasm.

muscle fiber
Component tissue of the muscle; it includes several nuclei and numerous parallel filaments that can contract themselves.

DNA

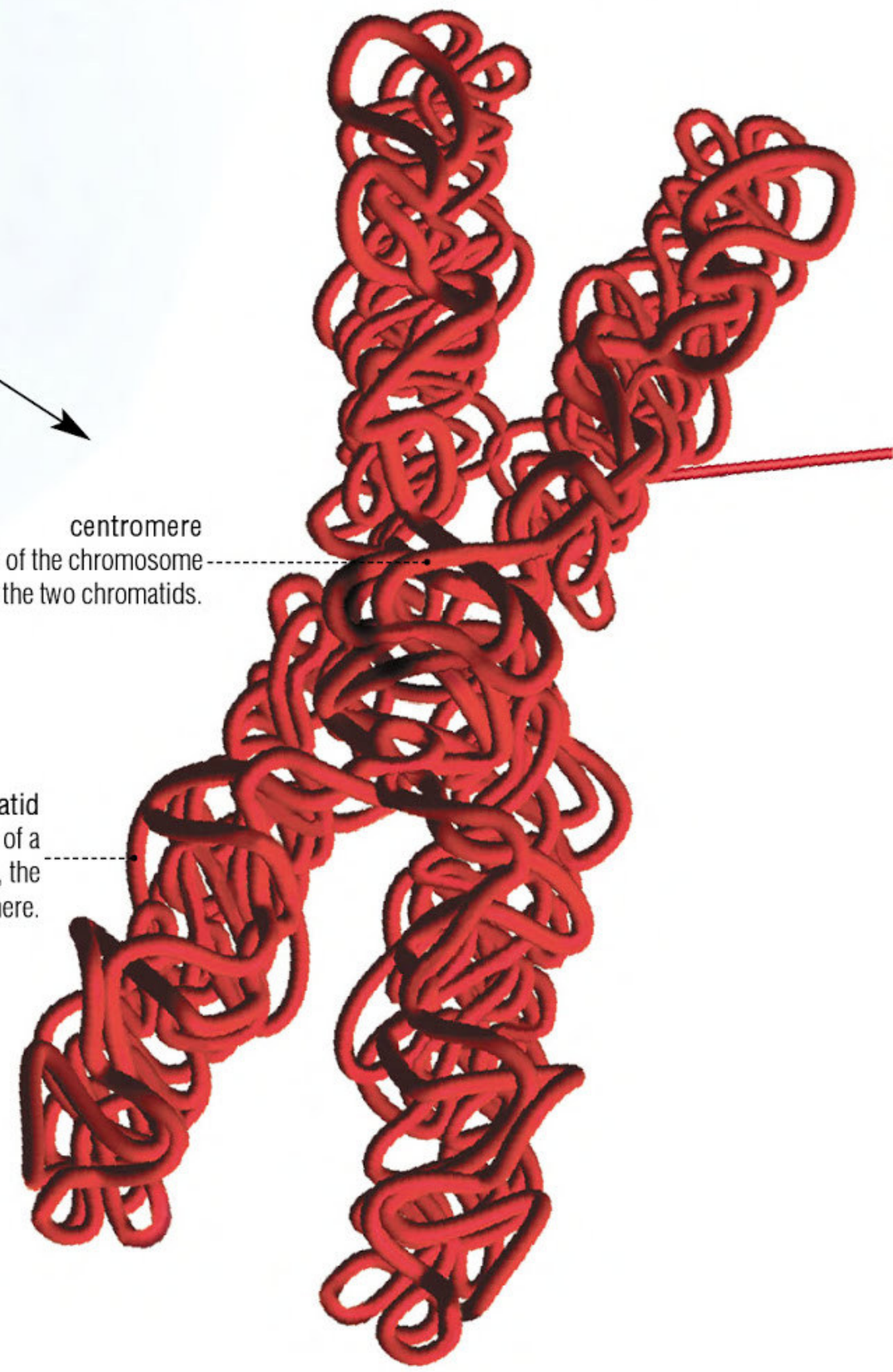
Complex molecule containing genes, contained in cell nuclei and formed of strands of nucleotides arranged in a double helix.

nucleus
Organelle containing a cell's genes and controlling its activities.



nucleoplasm
Gelatinous substance in which the nucleolus and chromatin float.

chromosome
Element, composed of DNA and proteins, that carries genetic information. Human cells have 46, which can be observed only during cell division.



nucleolus
Small spherical body located inside the nucleus, within which the ribosomes, or protein-synthesizing structures, are produced.

centromere
Short section of the chromosome joining the two chromatids.

chromatid
Each of the two strands of a chromosome. During cell division, the two strands separate at the centromere.

nucleotide
The basic unit of DNA molecules, composed of a phosphate group and a sugar, linked to a nitrogenous base.

nitrogenous base
Molecule forming a nucleotide. The four nitrogenous bases assemble in the DNA molecule to form a sequence that is specific to each individual.

chromatin
Mass of very fine filaments of DNA, the genetic material of the cell; it is compressed into chromosomes during cell division.

thymine
Nitrogenous base complementary to adenine.

adenine
Nitrogenous base that can pair up only with the thymine in the DNA molecule.

cytosine
Nitrogenous base complementary to guanine.

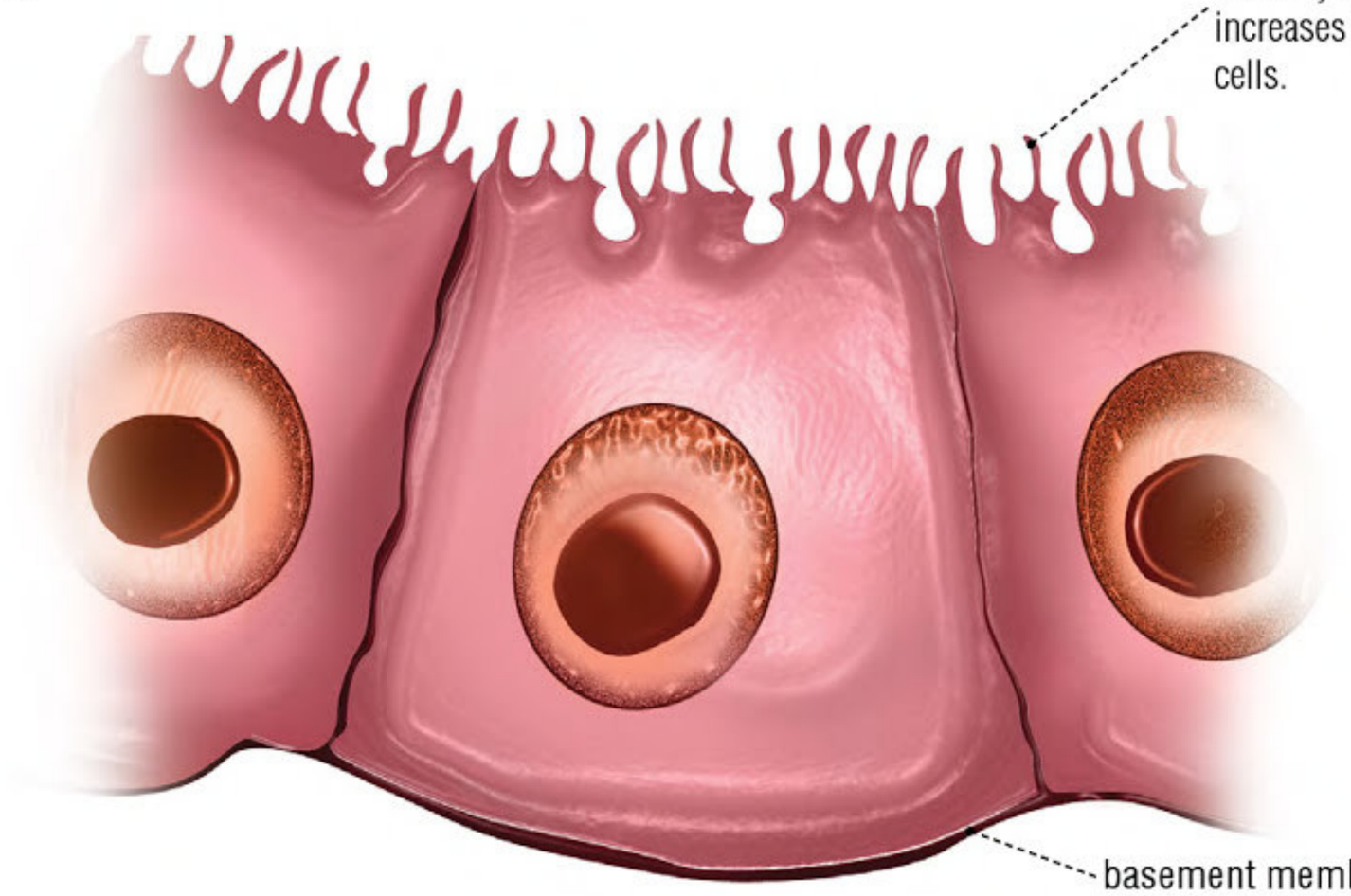
guanine
Nitrogenous base that can pair up only with the cytosine in the DNA molecule.

nucleosome
Mass formed of part of a DNA molecule coiled around a core of eight histone molecules.

tissues

Combinations of cells and molecules making up the organs of the human body.

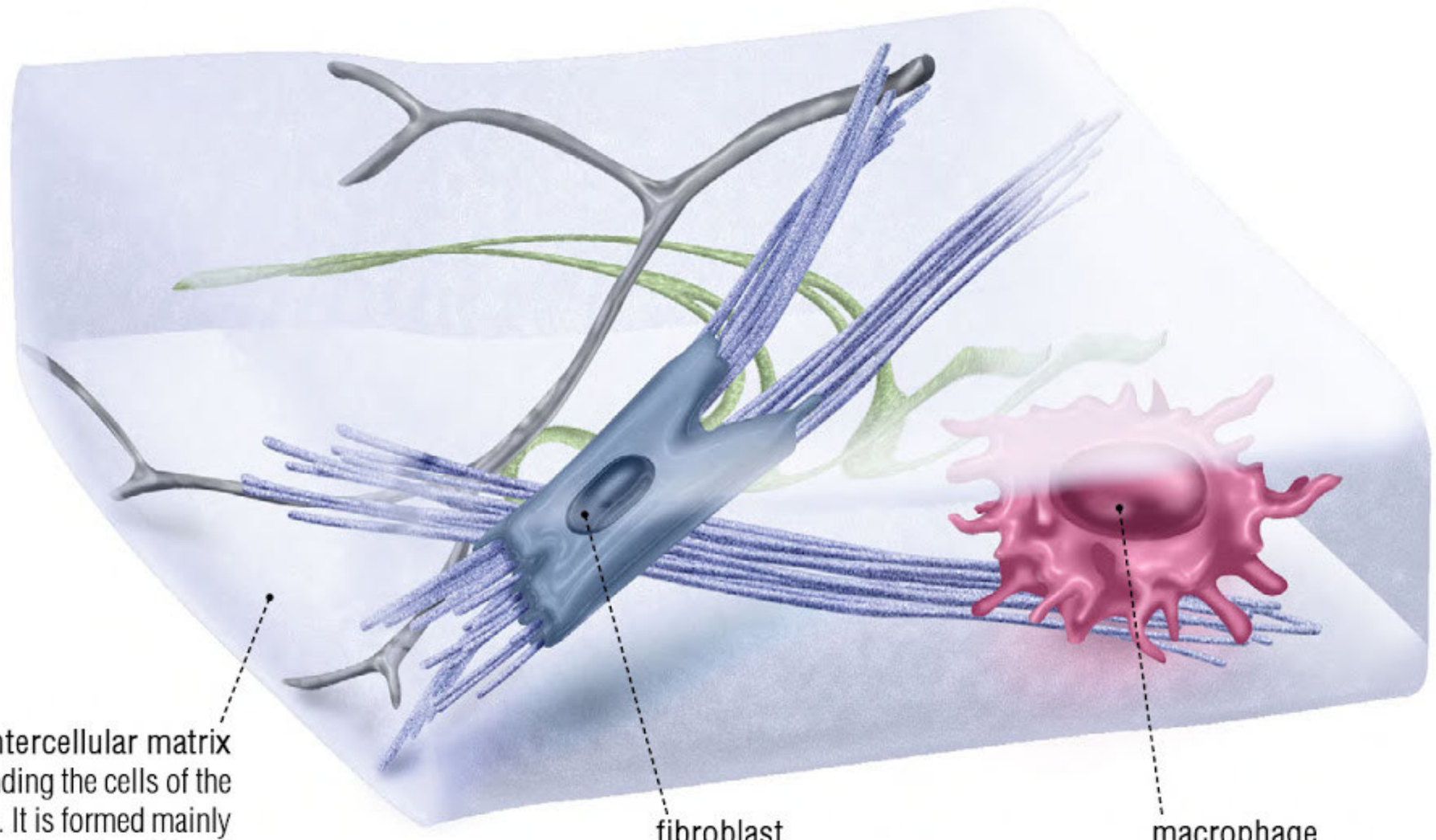
epithelial tissue
Tissue, formed of closely packed cells, that lines most of the internal and external surfaces of the body.



microvillus
Small cytoplasmic protuberance that increases the exchange surface of cells.

basement membrane
Membrane on which epithelial cells sit and that connects them with the underlying vascular tissues.

connective tissue
Tissue formed of cells floating in an abundant matrix. Cartilage, bone tissue, and most of the tissues that make up the organs are connective tissues.

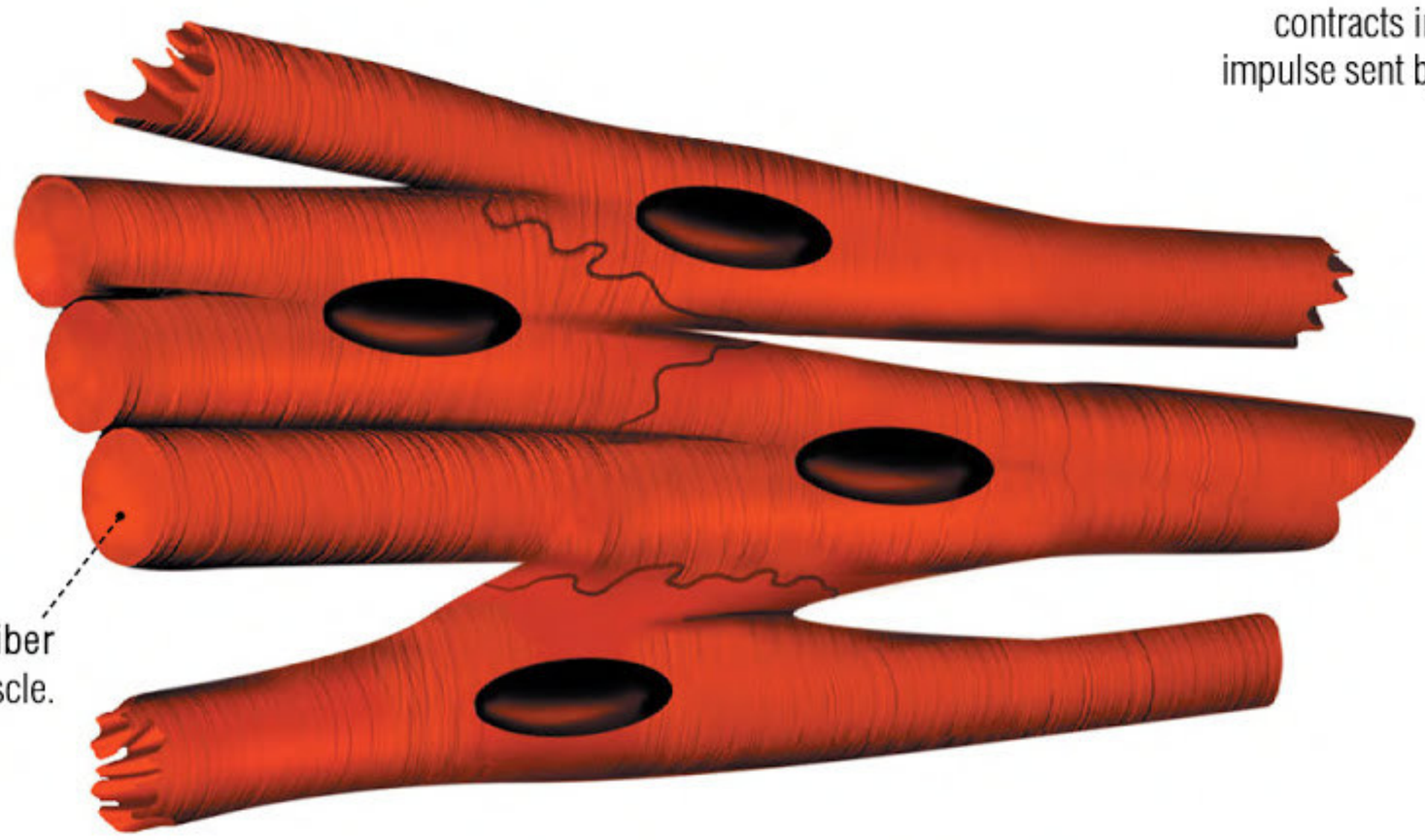


intercellular matrix
Substance surrounding the cells of the connective tissue. It is formed mainly of liquid and fibers.

fibroblast
Cell that manufactures the fibers in connective tissue.

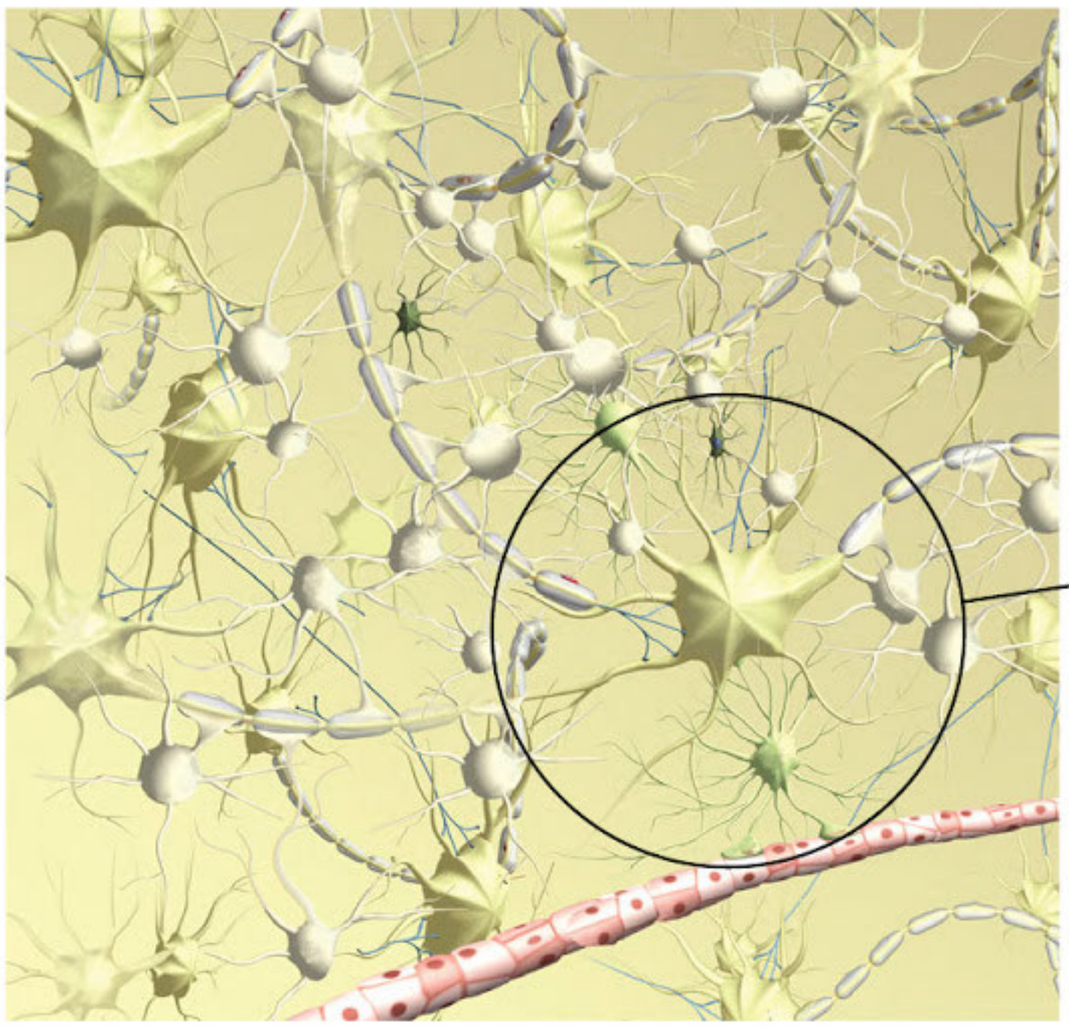
macrophage
Cell whose main function is to destroy undesirable elements (foreign bodies, debris, dead cells).

muscle tissue
Tissue forming muscles, which contracts in response to a nerve impulse sent by the central nervous system.



muscle fiber
Component tissue of the muscle.

nerve tissue
Tissue specializing in transmission of nerve impulses. It is composed of neurons and glial cells, which protect and nourish the neurons.



neuron
Nerve cell that receives, carries, and transmits messages in the form of nerve impulses.

microgliocyte
Very small glial cell that rids the nerve tissue of foreign bodies and dead cells.

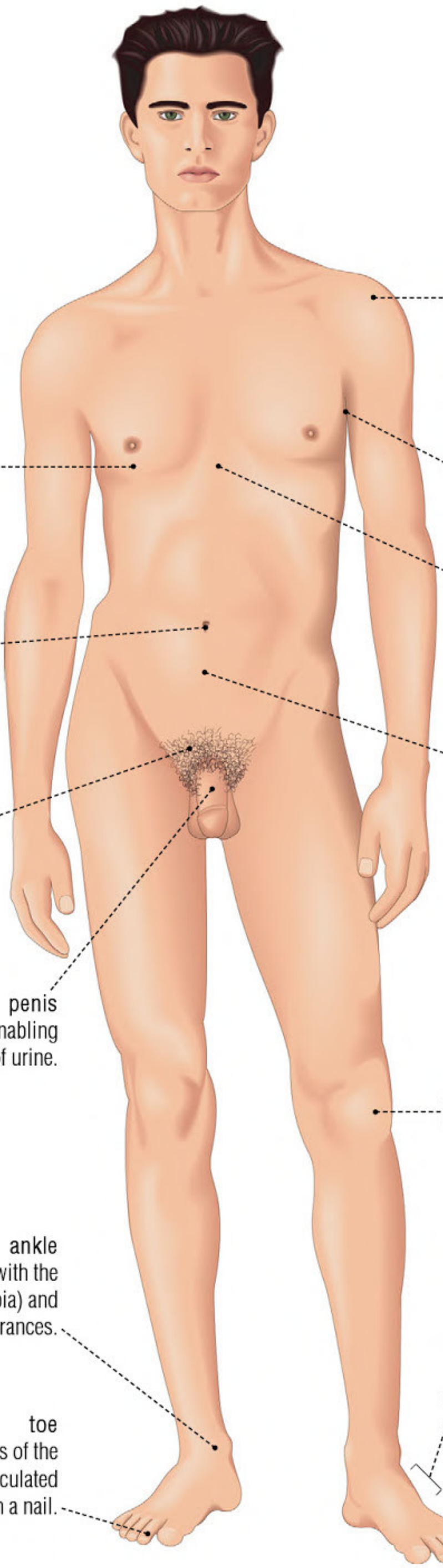
astrocyte
Glial cell whose numerous extensions terminate in feet that form barriers between neurons and blood capillaries.

oligodendrocyte
Glial cell that plays a role in formation of the myelin sheath of the neurons in the central nervous system.

man

Male human being producing cells able to fertilize the ovum (egg); the male's skeleton is generally larger and heavier than that of the female.

anterior view



shoulder
Upper limb joint articulating with the thorax; extremely mobile, the shoulder is capable of a wide range of movements.

breast
Anterior section of the thorax containing the nipple; unlike in the female, the breast plays no role in the male.

armpit
Depression located beneath the shoulder between the arm and the thorax and covered with hair at puberty.

navel
Scar in the shape of a small round depression, the result of severing the umbilical cord that connected the fetus to the mother.

thorax
Bony cage forming the upper portion of the trunk and containing the major respiratory and circulatory organs (lungs, heart).

pubis
Triangular protuberance of the lower abdomen; it is covered with hair at puberty.

abdomen
Soft part forming the lower portion of the trunk and containing various organs of the digestive, urinary and reproductive systems.

penis
Male erectile organ enabling copulation and excretion of urine.

knee
Joint that articutes the thighbone (femur) with the lower section of the leg (tibia).

ankle
Joint of the foot articulating with the leg, forming internal (tibia) and external (ulna) lateral protuberances.

instep
Upper portion of the foot between the metatarsus and the ankle.

toe
Each of the five terminal parts of the foot formed of various articulated bones and ending in a nail.

face
Front portion of the head bounded by the hair, ears and chin.

skull
Bony structure enclosing and protecting the brain.

forehead
Upper portion of the face between the eyebrows and the hair roots and extending between the temples.

hair
Hair of the head mainly protecting the skin of the skull; its appearance and color vary with each individual.

temple
Lateral portion of the head between the forehead, eye, cheek and ear.

nose
Mid-facial protuberance having two orifices (nostrils); it has an olfactory and respiratory function.

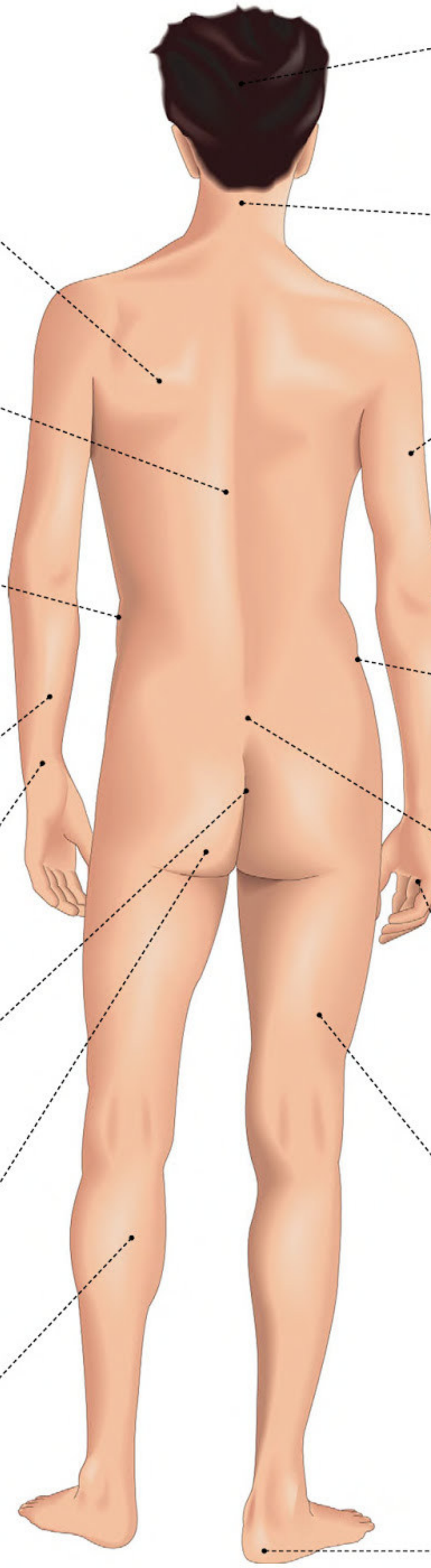
ear
Organ of hearing that collects sounds; the inner ear is also the organ of equilibrium.

mouth
Anterior cavity of the digestive tract bounded by the lips; it enables the digestion of food, among other functions.

chin
Protruding portion of the face that varies in shape; it corresponds to the lower jawbone.

Adam's apple
Protuberance of a man's neck formed by the juncture of two strips of cartilage from the larynx.

posterior view



hair
Hair of the head mainly protecting the skin of the skull; its appearance and color vary with each individual.

shoulder blade
Slender flat back bone articulating especially with the humerus (arm bone) and forming the posterior section of the shoulder.

nape
Posterior section of the neck formed mainly of vertebrae and muscles.

back
Posterior portion of the trunk extending from the shoulders to the kidneys on each side of the vertebral column.

arm
Section of the upper limb between the shoulder and the elbow and articulating especially with the scapula.

waist
Narrowed section of the body between the base of the thorax and the hips.

elbow
Arm joint (humerus) articulating with the forearm (radius and ulna); it protrudes when the limb is flexed.

hip
Leg joint articulating with the pelvis (base of the trunk).

forearm
Section of the upper limb between the elbow and the wrist; its muscles control the movements of the hand and fingers.

wrist
Joint of the hand (carpus) articulating with the forearm (radius).

loin
Lower portion of the back; it is located on each side of the vertebral column.

posterior rugae
Deep slender ridge between the two buttocks through which the anus opens.

hand
Terminal part of the upper limb having a tactile and prehensile function, with a thumb opposable to the other fingers.

buttock
Fleshy section made up mostly of muscles; it is located at the base of the back.

thigh
Section of the leg between the hip and the knee; it contains many powerful muscles.

calf
Fleshy section formed by the muscles at the back of the leg between the knee and the ankle.

heel
Posterior section of the foot; it rests on the ground when walking.

head
Upper portion of the body supported by the neck and made up essentially of the main sensory organs and the brain.

neck
Portion of the body connecting the head to the trunk; the respiratory tract, nerve centers and blood vessels, in particular, pass through it.

trunk
Portion of the body to which the head and limbs are attached; it is made up of the thorax, abdomen and pelvis.

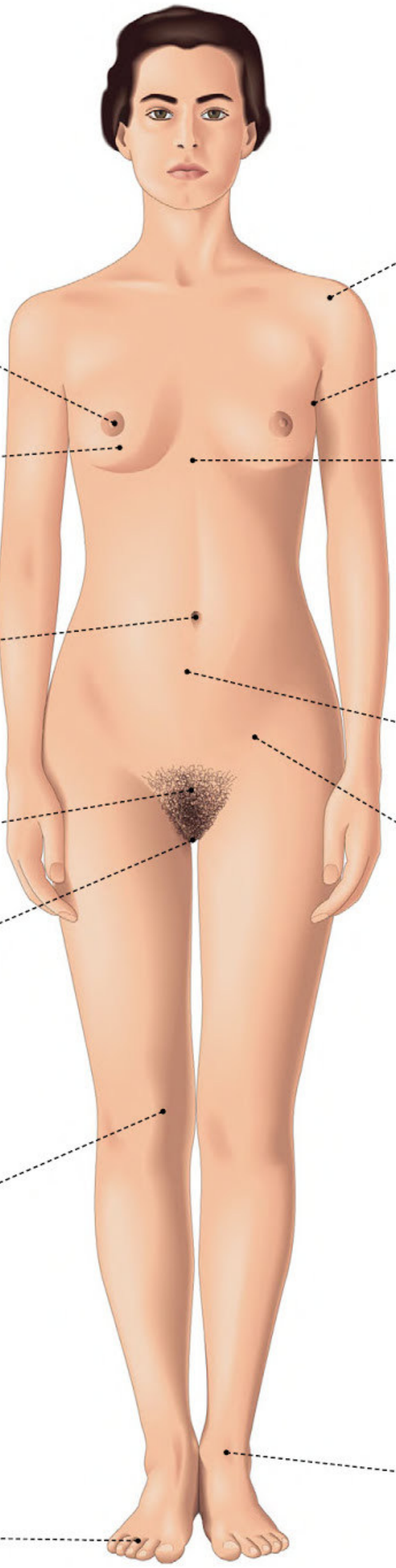
leg
Lower limb attached to the trunk; it supports the body in an upright position and during locomotion.

foot
Terminal part of the lower limb enabling upright stance and walking.

woman

Human being of the female sex capable of conceiving children from an ovum (egg) fertilized by a spermatozoon (sperm, the reproductive male cell).

anterior view



shoulder
Upper limb joint articulating with the thorax; extremely mobile, the shoulder is capable of a wide range of movements.

armpit
Depression located beneath the shoulder between the arm and the thorax and covered with hair at puberty.

nipple
Cone-shaped or cylindrical erectile protuberance of the breast surrounded by the areola; the lactiferous ducts open into it.

breast
Female milk-secreting glandular organ; it develops at puberty and increases in size during pregnancy.

thorax
Bony cage making up the upper portion of the trunk; it contains the major respiratory and circulatory organs (lungs, heart).

navel
Scar in the shape of a small round depression, the result of severing the umbilical cord that connected the fetus to the mother.

abdomen
Soft part forming the lower portion of the trunk and containing various organs of the digestive, urinary and reproductive systems.

pubis
Triangular protuberance of the lower abdomen; it is covered with hair at puberty.

groin
Depression resulting from the juncture of the lower abdomen and the thigh.

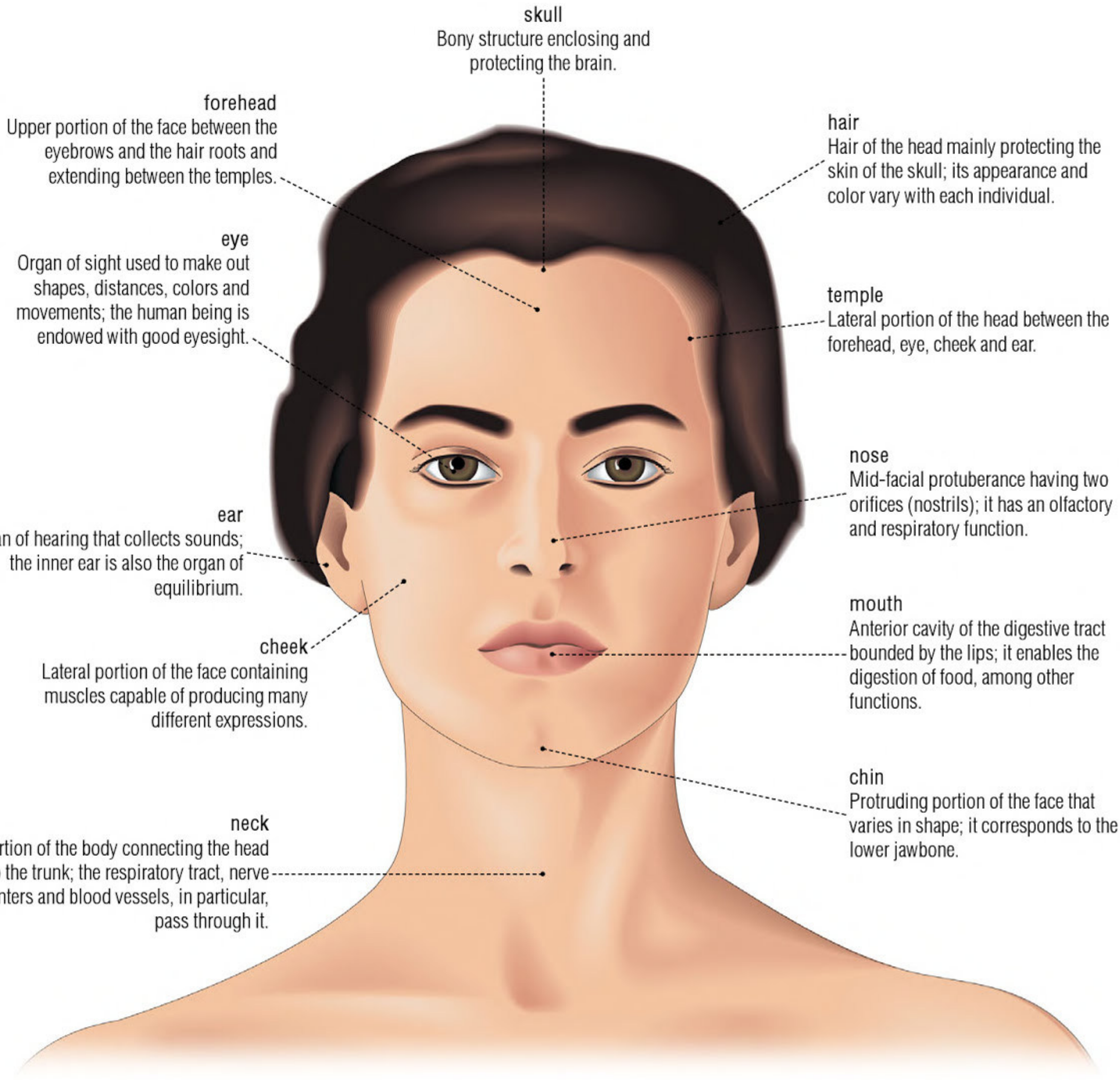
vulva
All the external female genital organs enabling functions such as copulation (vaginal orifice) and the evacuation of urine.

knee
Joint that articutes the thighbone (femur) with the lower section of the leg (tibia).

toe
Each of the five terminal parts of the foot formed of various articulated bones and ending in a nail.

ankle
Joint of the foot articulating with the leg, forming internal (tibia) and external (ulna) lateral protuberances.

face
Front portion of the head bounded by the hair, ears and chin.



skull
Bony structure enclosing and protecting the brain.

forehead
Upper portion of the face between the eyebrows and the hair roots and extending between the temples.

hair
Hair of the head mainly protecting the skin of the skull; its appearance and color vary with each individual.

eye
Organ of sight used to make out shapes, distances, colors and movements; the human being is endowed with good eyesight.

temple
Lateral portion of the head between the forehead, eye, cheek and ear.

nose
Mid-facial protuberance having two orifices (nostrils); it has an olfactory and respiratory function.

ear
Organ of hearing that collects sounds; the inner ear is also the organ of equilibrium.

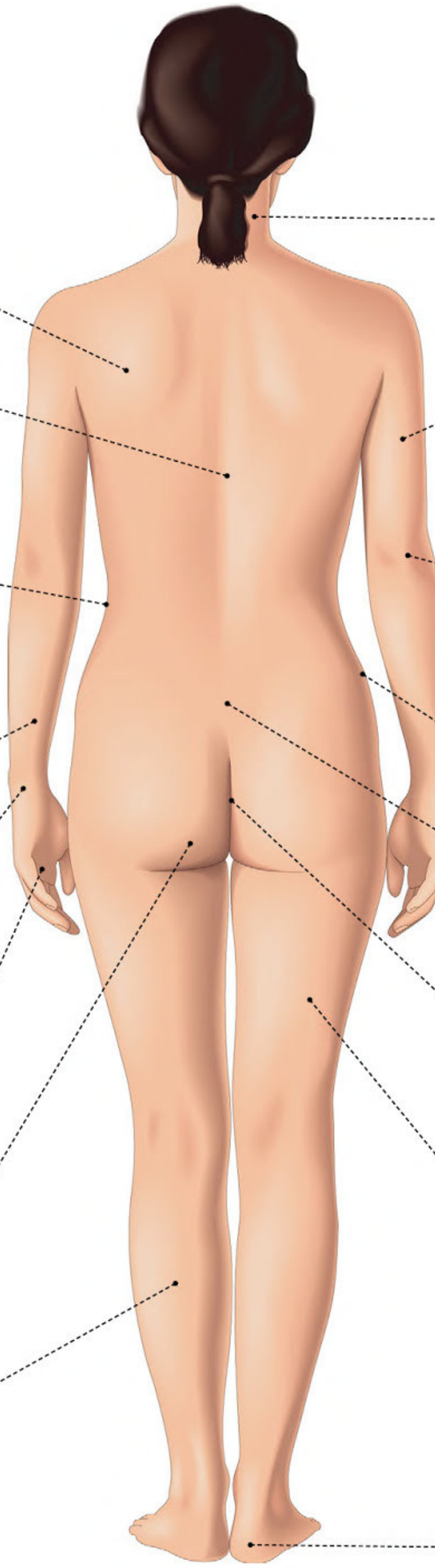
mouth
Anterior cavity of the digestive tract bounded by the lips; it enables the digestion of food, among other functions.

cheek
Lateral portion of the face containing muscles capable of producing many different expressions.

chin
Protruding portion of the face that varies in shape; it corresponds to the lower jawbone.

neck
Portion of the body connecting the head to the trunk; the respiratory tract, nerve centers and blood vessels, in particular, pass through it.

posterior view



shoulder blade
Slender flat back bone articulating especially with the humerus (arm bone) and forming the posterior section of the shoulder.

back
Posterior portion of the trunk extending from the shoulders to the kidneys on each side of the vertebral column.

waist
Narrowed section of the body between the base of the thorax and the hips.

forearm
Section of the upper limb between the elbow and the wrist; its muscles control the movements of the hand and fingers.

wrist
Joint of the hand (carpus) articulating with the forearm (radius).

hand
Terminal part of the upper limb having a tactile and prehensile function, with a thumb opposable to the other fingers.

buttock
Fleshy section made up mostly of muscles; it is located at the base of the back.

calf
Fleshy section formed by the muscles at the back of the leg between the knee and the ankle.

nape
Posterior section of the neck formed mainly of vertebrae and muscles.

arm
Section of the upper limb between the shoulder and the elbow and articulating especially with the scapula.

elbow
Arm joint (humerus) articulating with the forearm (radius and ulna); it protrudes when the limb is flexed.

hip
Leg joint articulating with the pelvis (base of the trunk).

loin
Lower portion of the back; it is located on each side of the vertebral column.

posterior rugae
Deep slender ridge between the two buttocks through which the anus opens.

thigh
Section of the leg between the hip and the knee; it contains many powerful muscles.

heel
Posterior section of the foot; it rests on the ground when walking.

head
Upper portion of the body supported by the neck and made up essentially of the main sensory organs and the brain.

neck
Portion of the body connecting the head to the trunk; the respiratory tract, nerve centers and blood vessels, in particular, pass through it.

trunk
Portion of the body to which the head and limbs are attached; it is made up of the thorax, abdomen and pelvis.

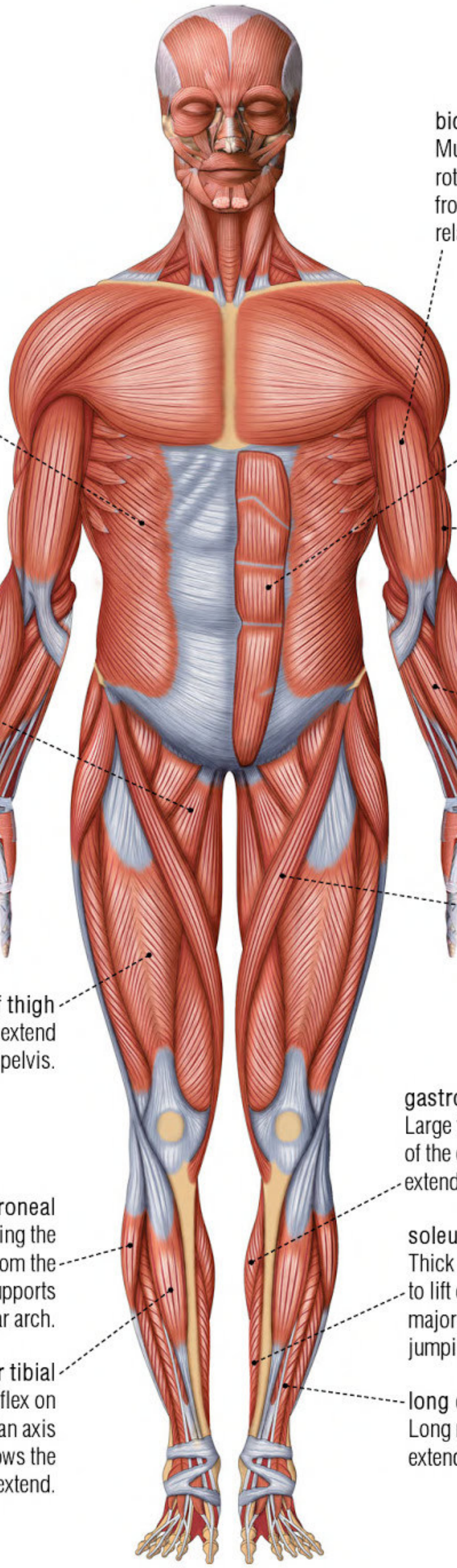
leg
Lower limb attached to the trunk; it supports the body in an upright position and during locomotion.

foot
Terminal part of the lower limb enabling upright stance and walking.

muscles

Contractile organs made of fibers allowing the body to move and maintain its posture; the human body has over 600 muscles.

anterior view



biceps of arm
Muscle allowing the forearm to flex and to rotate outwardly (palm of the hand toward the front); the biceps contracts while the triceps relaxes.

external oblique
Large thin muscle enabling the trunk to flex and to rotate on the pelvis and the internal organs to compress; it also aids in expiration.

abdominal rectus
Flat muscle enabling the trunk to flex frontward; it protects and enables compression of the internal organs, and aids in expiration.

brachial
Powerful muscle enabling the forearm to flex on the arm.

brachioradialis
Muscle mainly enabling the forearm to flex on the arm.

long adductor
Long muscle enabling the thigh to draw near the median axis of the body; it also allows it to rotate outwardly (outside the median axis) and to flex.

long palmar
Muscle enabling various hand movements, including flexing it and drawing it away from the median axis of the body; it also helps to stabilize the wrist.

sartorius
Long narrow ribbon-shaped muscle enabling the thigh to flex and to rotate outwardly (outside the median axis); it also allows the leg to flex.

straight muscle of thigh
Powerful muscle enabling the knee to extend and the thigh to flex on the pelvis.

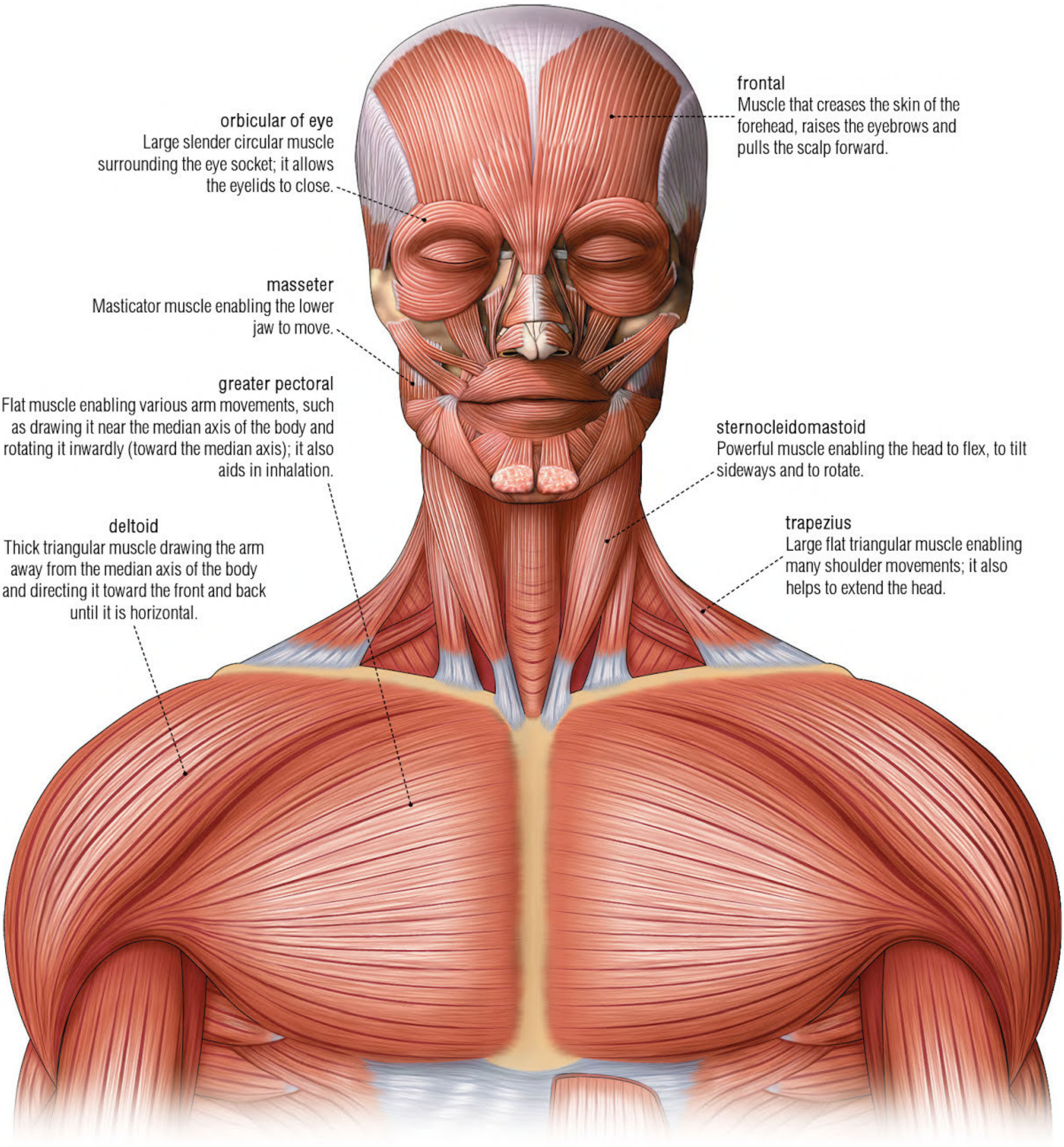
gastrocnemius
Large thick muscle forming the curve of the calf and allowing the foot to extend; it also helps the knee to extend.

long peroneal
Muscle attached to the fibula enabling the foot to extend and to draw away from the median axis of the body; it also supports the plantar arch.

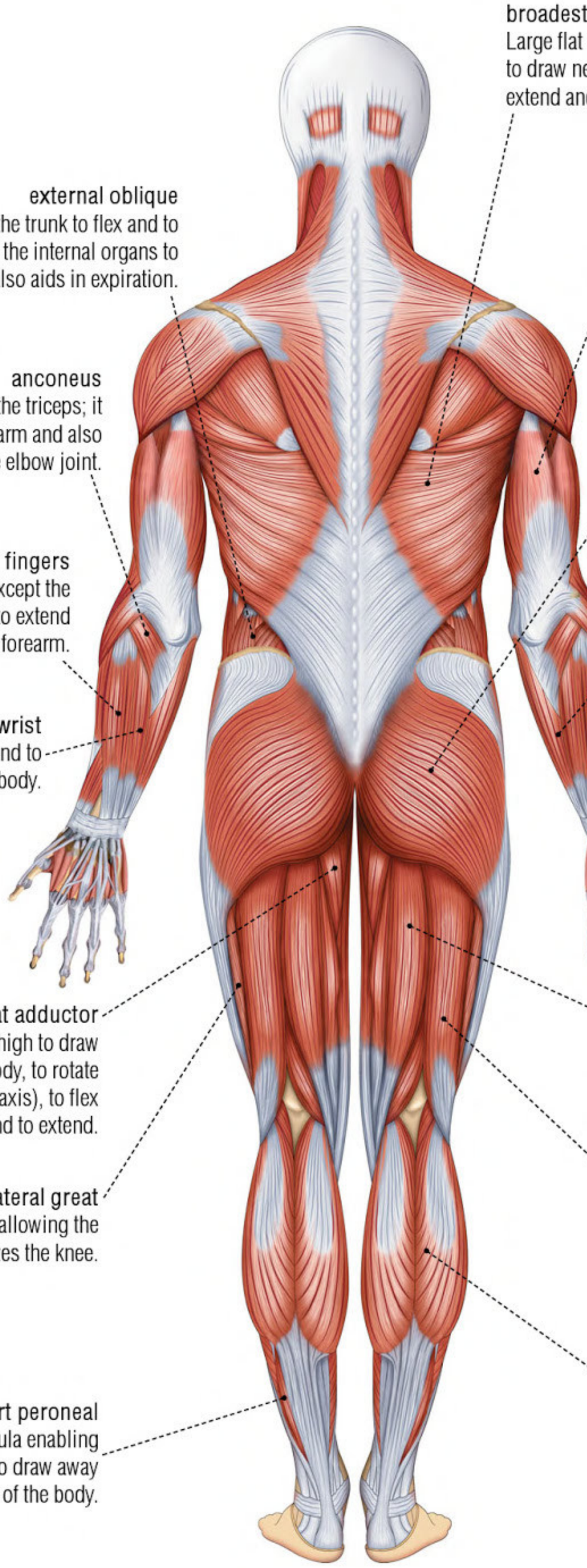
soleus
Thick muscle enabling the foot to extend, the heel to lift off the ground and the body to rise; it is a major muscle involved in walking, running and jumping.

anterior tibial
Thick muscle enabling the foot to flex on the leg and to draw near the median axis of the body; the posterior tibial allows the foot to extend.

long extensor of toes
Long muscle allowing all the toes, except the big toe, to extend; it also helps the foot to flex on the leg.



posterior view



broadest of back
Large flat muscle especially enabling the arm to draw near the median axis of the body, to extend and to rotate inwardly.

external oblique
Large thin muscle enabling the trunk to flex and to rotate on the pelvis and the internal organs to compress; it also aids in expiration.

triceps of arm
Powerful muscle enabling the forearm to extend on the arm; it contracts whereas the biceps relaxes.

greatest gluteal
Thick muscle enabling the hip to extend and to rotate outwardly (outside the median axis); it also allows the trunk to return to a vertical position.

anconeus
Short muscle reinforcing the action of the triceps; it allows the forearm to extend on the arm and also stabilizes the elbow joint.

common extensor of fingers
Muscle enabling all the fingers, except the thumb, to extend; it also helps the hand to extend on the forearm.

ulnar flexor of wrist
Muscle enabling the hand to flex and to draw near the median axis of the body.

ulnar extensor of wrist
Muscle enabling the hand to extend and to draw near the median axis of the body.

great adductor
Powerful muscle enabling the thigh to draw near the median axis of the body, to rotate outwardly (outside the median axis), to flex and to extend.

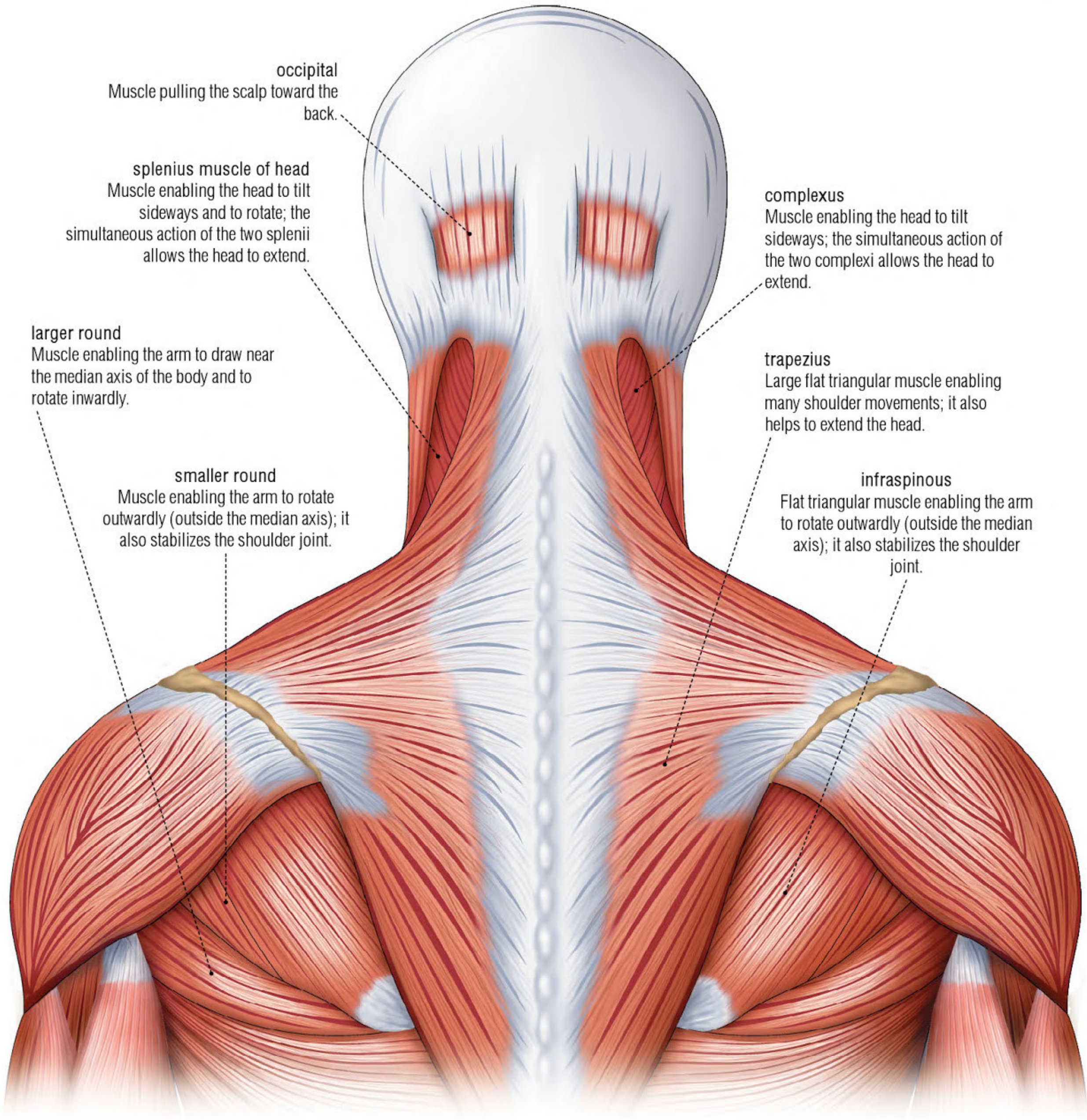
semitendinous
Long muscle enabling the thigh to extend on the pelvis, the knee to flex, and the thigh and the leg to rotate inwardly (toward the median axis).

lateral great
Large outer thigh muscle mainly allowing the knee to extend; it also stabilizes the knee.

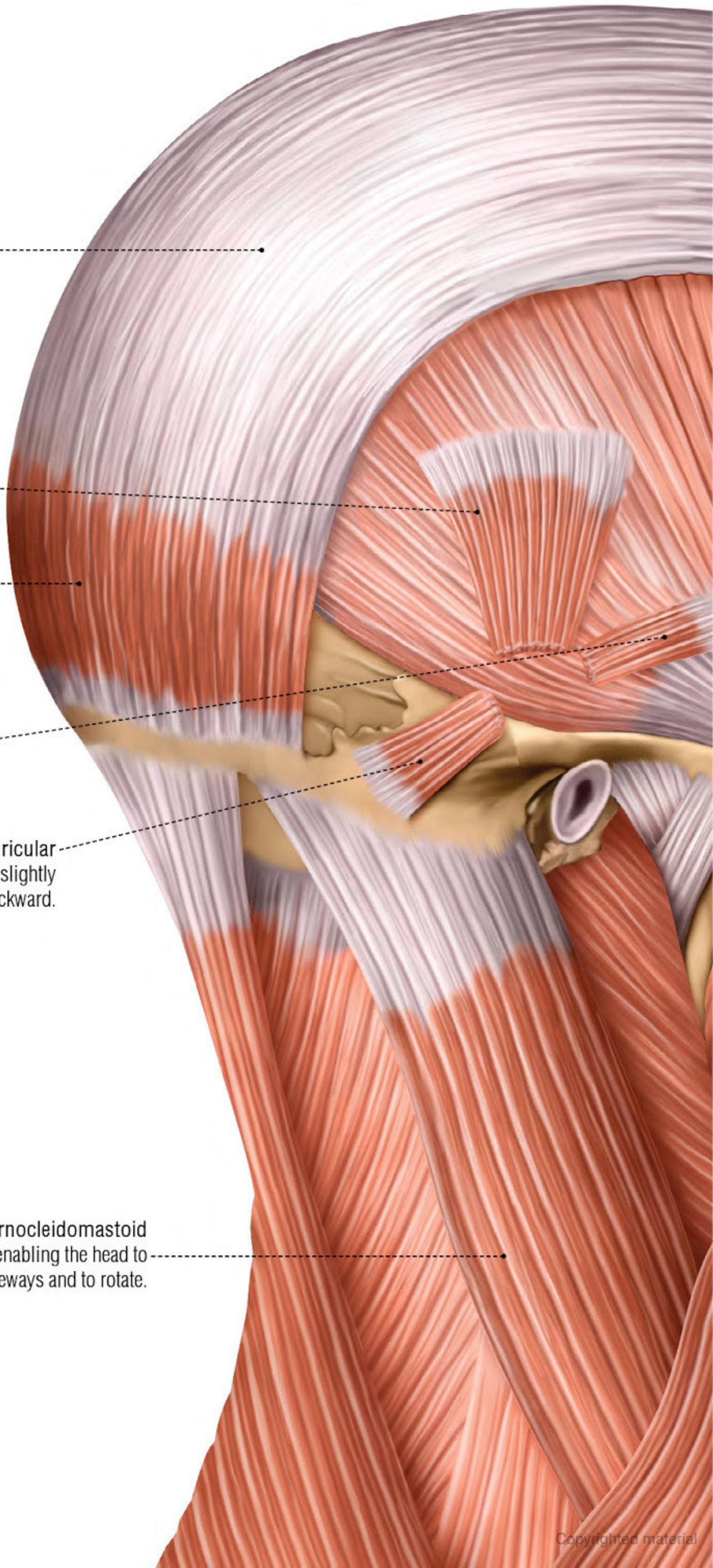
biceps of thigh
Large muscle enabling the leg to flex on the thigh and to rotate outwardly (outside the median axis) and the thigh to extend on the pelvis.

short peroneal
Muscle attached to the fibula enabling the foot to extend and to draw away from the median axis of the body.

slender
Muscle enabling the thigh to draw near the median axis of the body, and the leg to flex on the thigh and to rotate inwardly (toward the median axis).



muscles of head: lateral view



epicranial aponeurosis
Fibrous membrane covering the top of the skull, which links the frontal and occipital lobes.

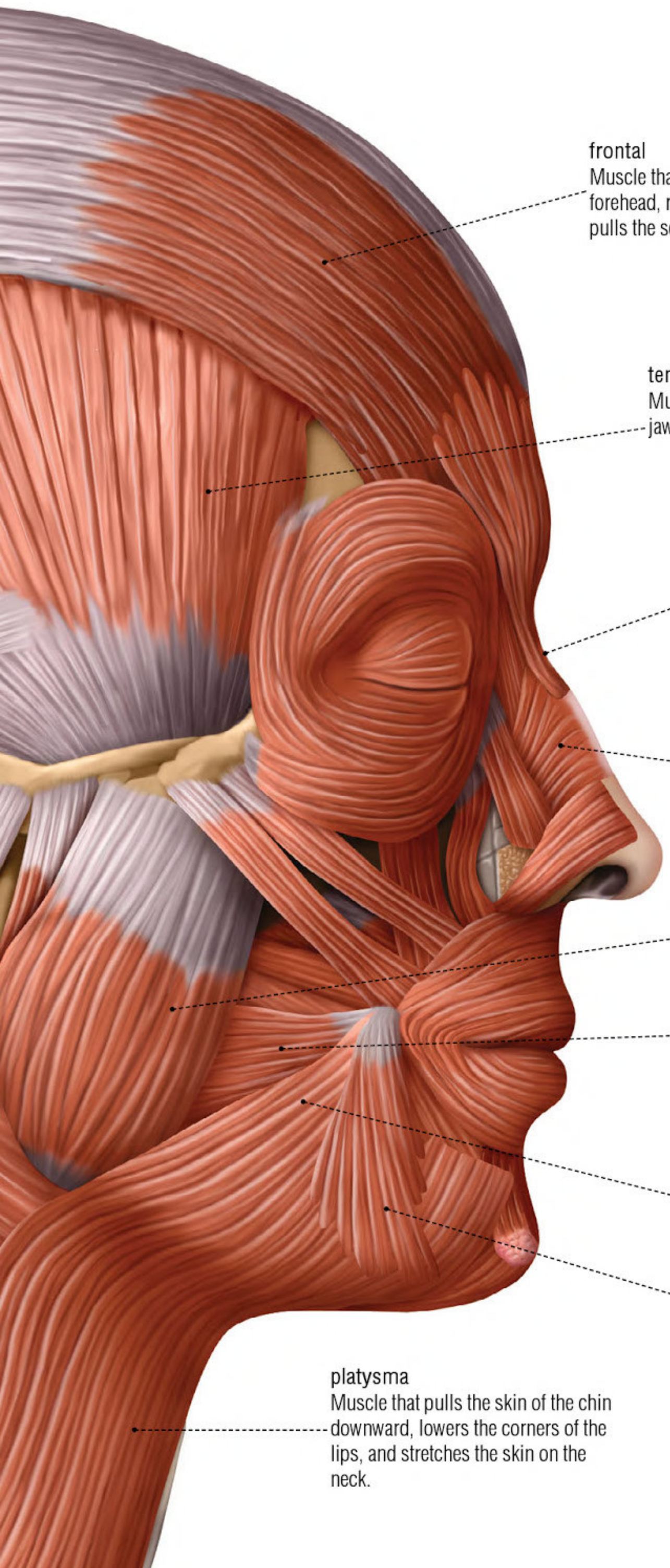
superior auricular
Muscle that pulls the ear slightly upward.

occipital
Muscle pulling the scalp toward the back.

anterior auricular
Muscle that pulls the ear slightly upward and forward.

posterior auricular
Muscle that pulls the ear slightly backward.

sternocleidomastoid
Powerful muscle enabling the head to flex, to tilt sideways and to rotate.



frontal
Muscle that creases the skin of the forehead, raises the eyebrows and pulls the scalp forward.

temporal
Muscle that lifts and retracts the lower jaw.

procerus
Muscle that lowers the eyebrows.

nasalis
Muscle that contracts to narrow the nasal orifices.

masseter
Masticator muscle enabling the lower jaw to move.

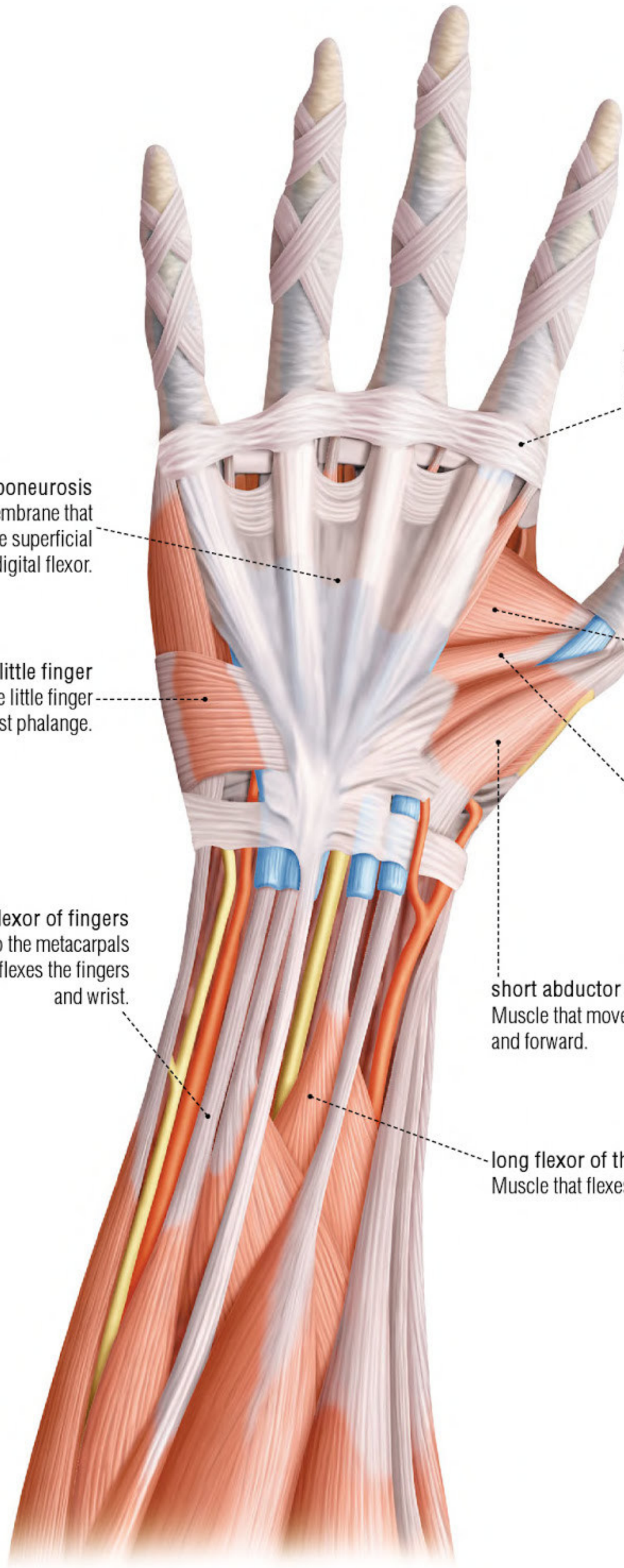
buccinator
Principal muscle of the cheek, which widens the corners of the lips. With other muscles, it is used for blowing and whistling.

risorius
Muscle that pulls the corners of the lips back. It is used in smiling.

depressor of angle of mouth
Muscle that lowers the corners of the lips.

platysma
Muscle that pulls the skin of the chin downward, lowers the corners of the lips, and stretches the skin on the neck.

muscles of hand



transverse metacarpal ligament
Thick fibrous band stretched between the second and fifth metacarpals.

palmar aponeurosis
Connective tissue membrane that protects the tendons of the superficial digital flexor.

abductor of little finger
Muscle that moves the little finger outward and flexes its first phalange.

superficial flexor of fingers
Wide muscle that extends to the metacarpals and phalanges via tendons. It flexes the fingers and wrist.

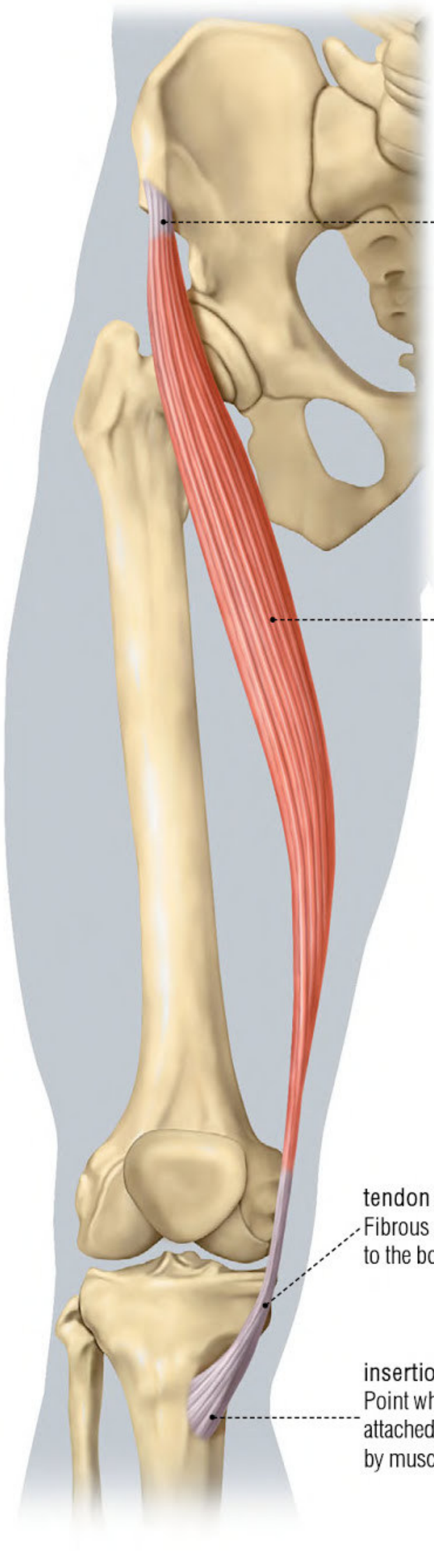
adductor of thumb
Triangular muscle that brings the thumb toward the palm of the hand.

short flexor of thumb
Muscle that moves the thumb forward and inward.

short abductor of thumb
Muscle that moves the thumb outward and forward.

long flexor of thumb
Muscle that flexes the thumb.

parts of a striated muscle



origin
Point where a striated muscle is attached to a bone that is not set in motion by muscle contraction.

belly
Central part of the muscle between the origin and the insertion. A muscle may have one or several bellies.

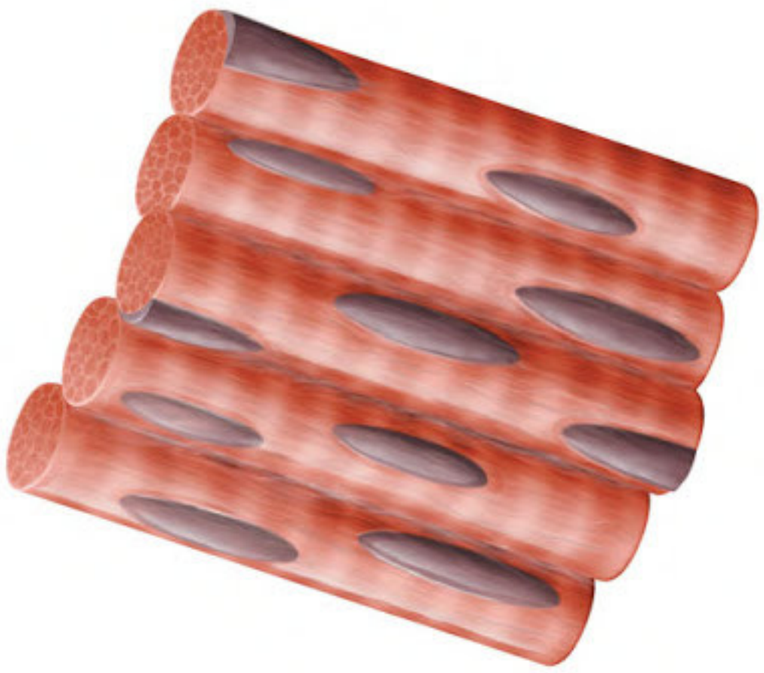
tendon
Fibrous tissue connecting the muscle to the bone.

insertion
Point where a striated muscle is attached to a bone that is set in motion by muscle contraction.

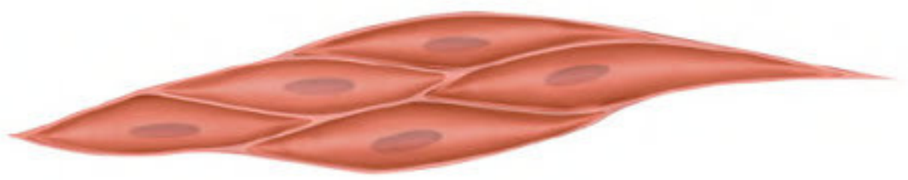
types of muscles

There are three main types of muscles, each with specific anatomical and functional characteristics.

cardiac muscle
Muscle formed of branching strands of muscle fibers with one or two nuclei. Cardiac muscles control the heartbeat.

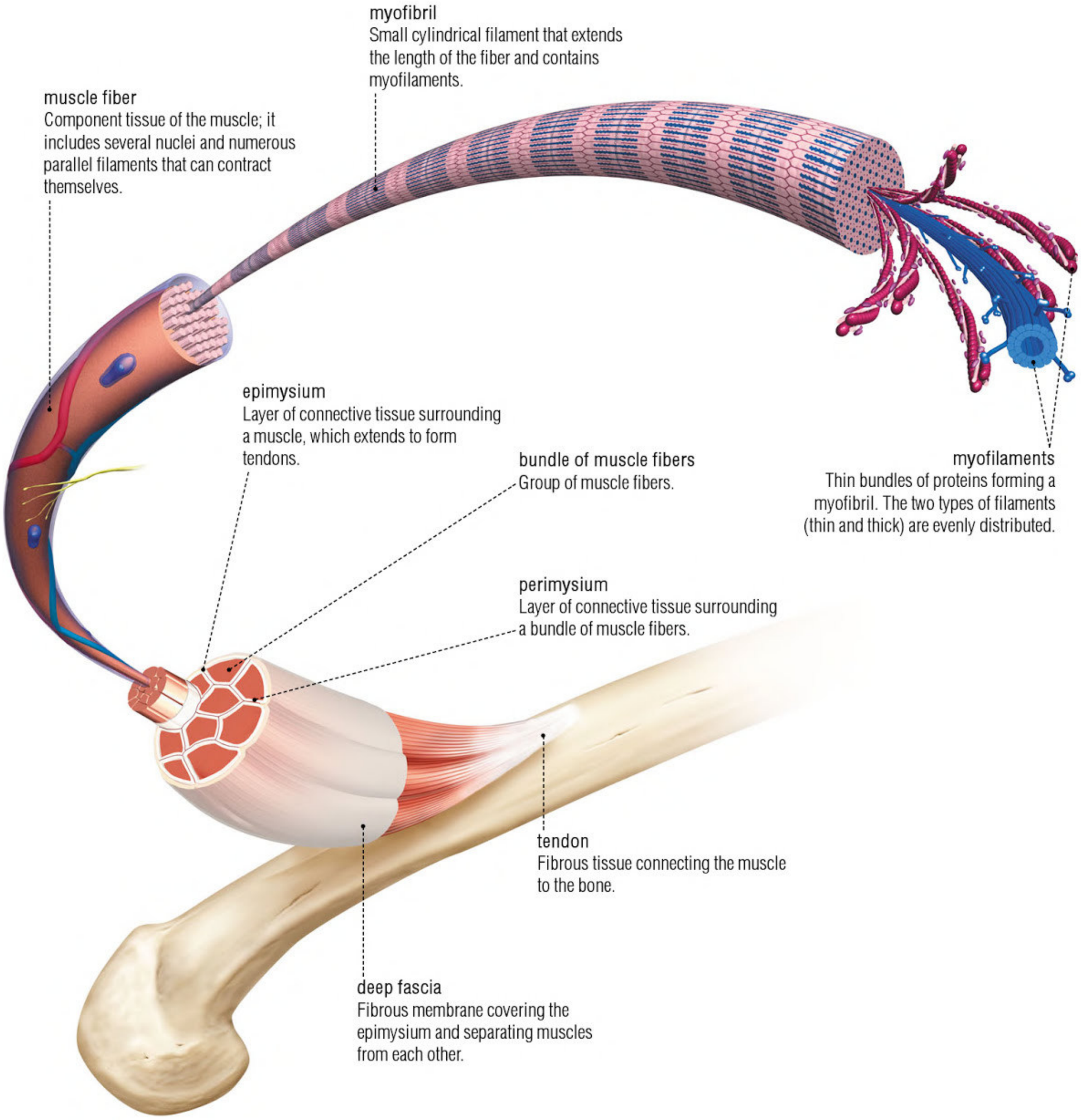


striated muscle
Muscle composed of muscle fibers with multiple nuclei grouped in dense bundles. Striated muscles control the skeleton's voluntary movements.



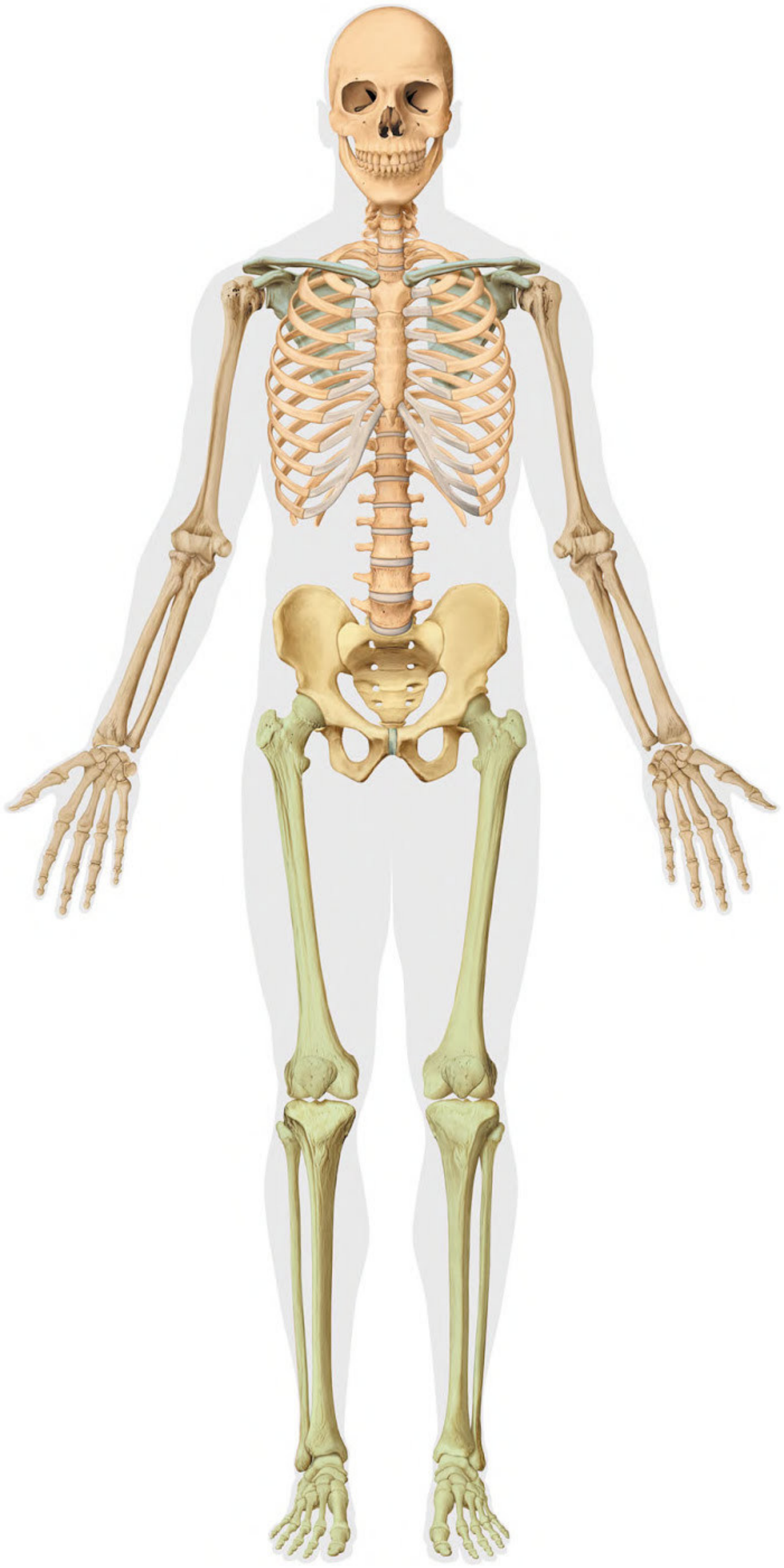
smooth muscle
Muscle composed of small muscle fibers with a single nucleus. Smooth muscles control the involuntary movements of internal organs.

structure of a striated muscle



skeleton

All the articulated bones (about 200), of varying sizes and shapes, forming the frame of the body, supporting the muscles and protecting the vital organs.



axial skeleton
The group of bones that support the body and protect the vital organs.

upper limbs
The group of bones forming the shoulders, upper arms, forearms, and hands, and which are involved, among other things, in prehension.

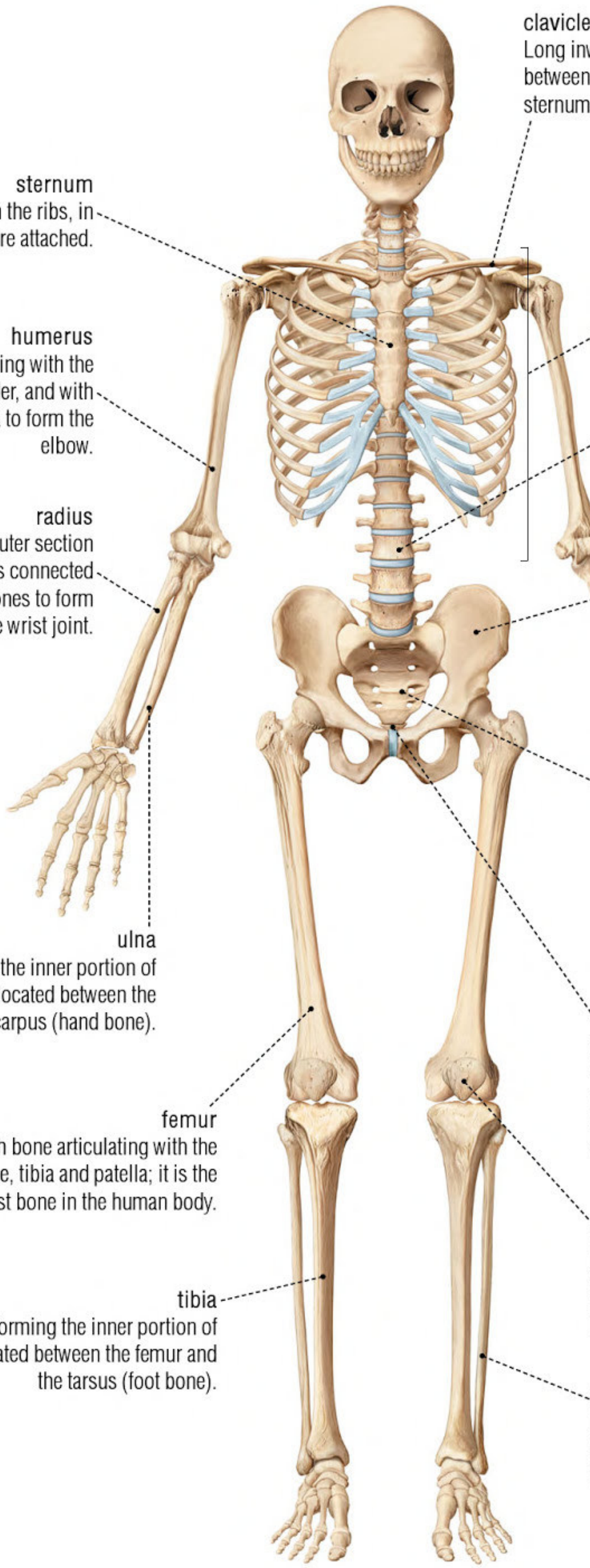
shoulder girdle
Group of bones linking the upper limbs to the axial skeleton.

pelvis
Group of bones linking the lower limbs to the axial skeleton.

lower limbs
Group of bones forming the thighs, lower legs, and feet, and which make it possible to walk.

skeleton

anterior view



clavicle
Long inward-curving bone located between the acromion and the sternum.

sternum
Long flat bone to which the ribs, in particular, are attached.

ribs
Slender curved bones articulating with the dorsal vertebrae and the sternum; the 12 pairs of ribs make up the lateral walls of the thorax.

humerus
Long arm bone articulating with the scapula to form the shoulder, and with the radius and the ulna to form the elbow.

vertebral column
Movable bony axis made up of various parts articulating with each other (vertebrae); it supports the skeleton and contains the spinal cord.

radius
Long bone making up the outer section of the forearm; it is connected especially to the carpal bones to form the wrist joint.

ilium
Large flat bone made up of three fused bones that attach the lower limb to the trunk; the ilium, sacrum and coccyx form the pelvis.

sacrum
Bone made up of five fused vertebrae located between the lumbar and coccyx vertebrae.

ulna
Long bone forming the inner portion of the forearm located between the humerus and the carpus (hand bone).

coccyx
Bone made up of four to six fused vertebrae in the lower terminal part of the vertebral column, and articulating with the sacrum.

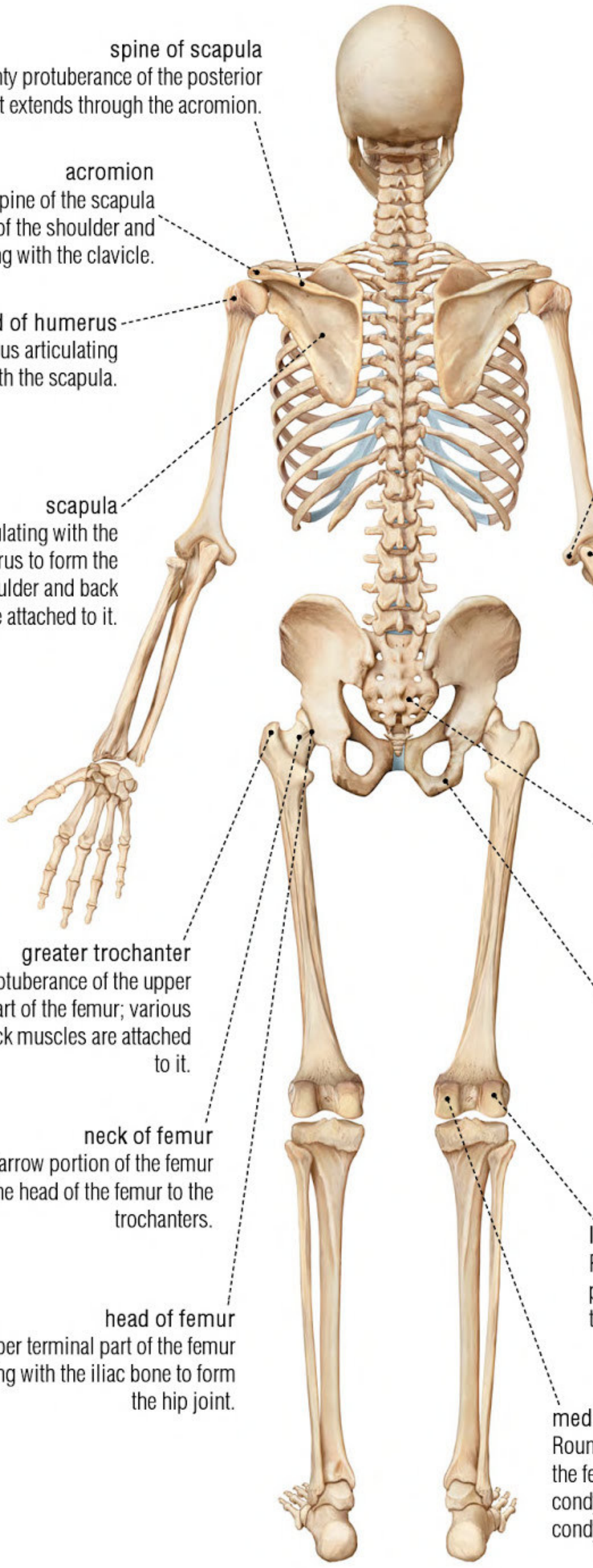
femur
Long thigh bone articulating with the iliac bone, tibia and patella; it is the longest bone in the human body.

patella
Flat triangular slightly bulging and mobile bone articulating mainly with the femur; this knee bone allows the lower limb to flex and extend.

tibia
Long bone forming the inner portion of the leg located between the femur and the tarsus (foot bone).

fibula
Long bone forming the outer portion of the leg located between the femur and the tarsus (foot bone).

posterior view



spine of scapula
Pointy protuberance of the posterior scapula that extends through the acromion.

acromion
Extension of the spine of the scapula forming the point of the shoulder and articulating with the clavicle.

head of humerus
Upper terminal part of the humerus articulating very freely with the scapula.

scapula
Large thin flat bone articulating with the clavicle and the humerus to form the shoulder; numerous shoulder and back muscles are attached to it.

greater trochanter
Large protuberance of the upper terminal part of the femur; various thigh and buttock muscles are attached to it.

neck of femur
Narrow portion of the femur connecting the head of the femur to the trochanters.

head of femur
Upper terminal part of the femur articulating with the iliac bone to form the hip joint.

epitrochlea
Inner protuberance of the lower terminal part of the humerus; various flexor muscles of the hand and fingers are attached to it.

epicondyle
Outer protuberance of the lower terminal part of the humerus; various extensor muscles of the hand and fingers are attached to it.

olecranon
Upper terminal part of the ulna articulating with the humerus; it forms the protuberance of the elbow.

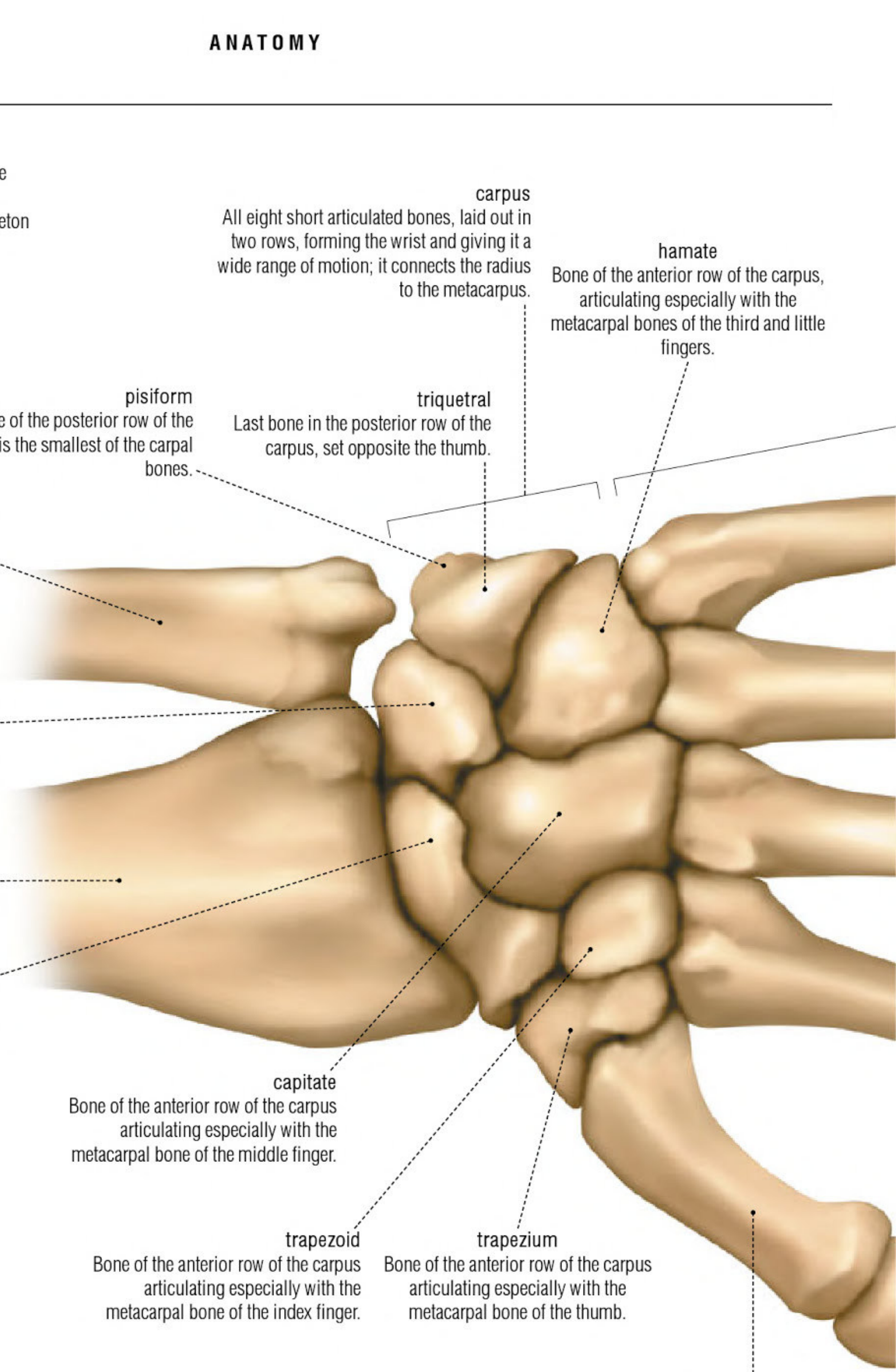
sacrum
Bone made up of five fused vertebrae located between the lumbar and coccyx vertebrae.

ischium
Constituent portion of the iliac bone supporting the body's weight when seated.

lateral condyle of femur
Round protuberance of the lower terminal part of the femur enabling articulation with the tibia.

medial condyle of femur
Round protuberance of the lower terminal part of the femur enabling articulation with the tibia; this condyle is longer and narrower than the lateral condyle.

hand
Terminal part of the forearm with a tactile and prehensile function and a thumb opposable to the other fingers. The skeleton of the hand has 27 bones.



carpus
All eight short articulated bones, laid out in two rows, forming the wrist and giving it a wide range of motion; it connects the radius to the metacarpus.

hamate
Bone of the anterior row of the carpus, articulating especially with the metacarpal bones of the third and little fingers.

pisiform
Bone of the posterior row of the carpus; it is the smallest of the carpal bones.

triquetral
Last bone in the posterior row of the carpus, set opposite the thumb.

ulna
Long bone forming the inner portion of the forearm, and articulating especially with the radius.

lunate
Bone of the posterior row of the carpus articulating especially with the radius to form the wrist.

radius
Long bone making up the outer section of the forearm; it is connected especially to the carpal bones to form the wrist joint.

scaphoid
The largest bone in the posterior row of the carpus articulating with the radius to form the wrist.

capitate
Bone of the anterior row of the carpus articulating especially with the metacarpal bone of the middle finger.

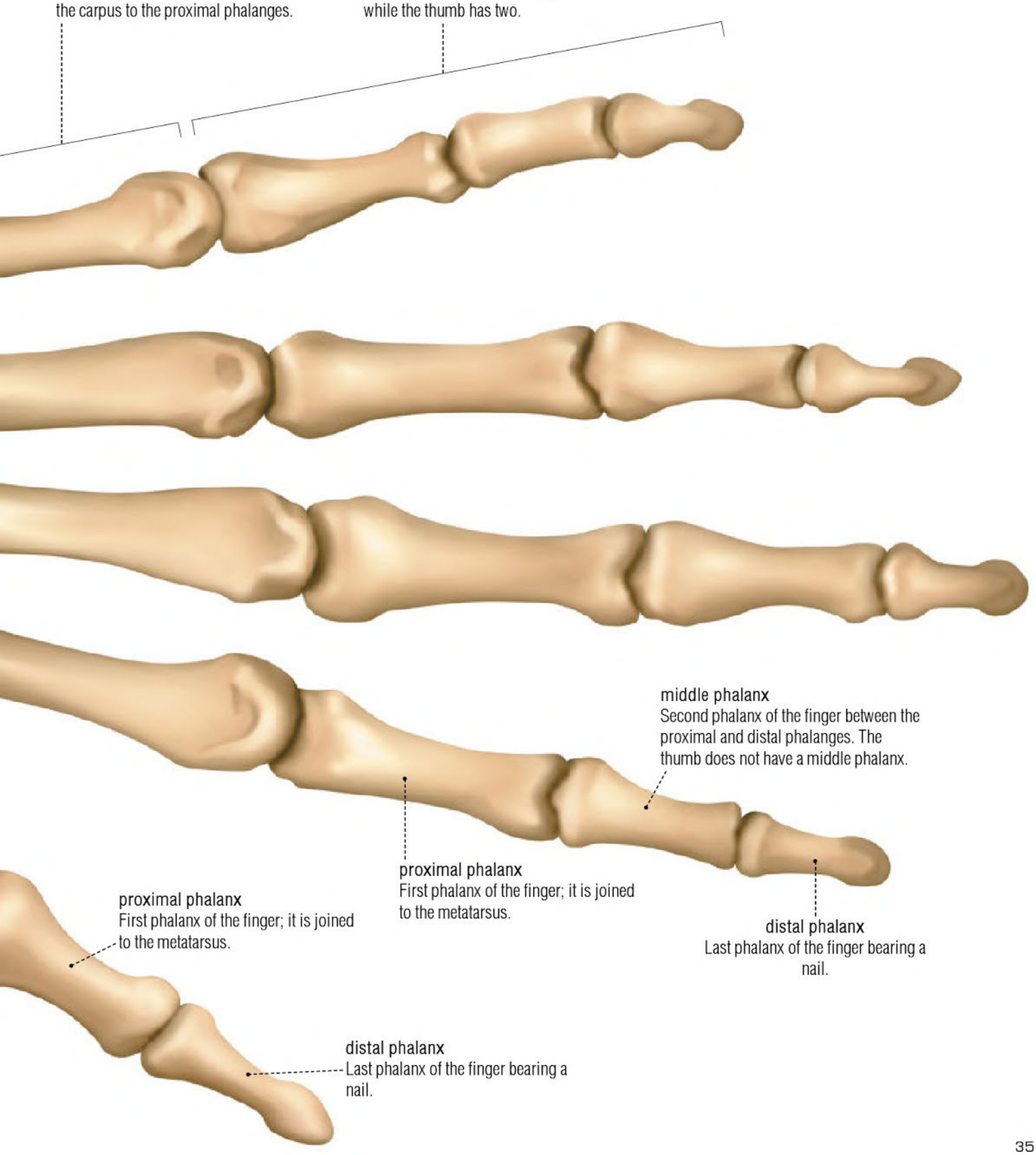
trapezoid
Bone of the anterior row of the carpus articulating especially with the metacarpal bone of the index finger.

trapezium
Bone of the anterior row of the carpus articulating especially with the metacarpal bone of the thumb.

metacarpal
Each of the five bones forming the metacarpus. The metacarpal bone of the thumb is very mobile.

metacarpus
All five long bones forming the palm of the hand; they link the anterior row of the carpus to the proximal phalanges.

phalanges
Articulated bones forming the skeleton of the fingers; each finger has three, while the thumb has two.



middle phalanx
Second phalanx of the finger between the proximal and distal phalanges. The thumb does not have a middle phalanx.

proximal phalanx
First phalanx of the finger; it is joined to the metatarsus.

distal phalanx
Last phalanx of the finger bearing a nail.

proximal phalanx
First phalanx of the finger; it is joined to the metatarsus.

distal phalanx
Last phalanx of the finger bearing a nail.

foot
Terminal part of the leg enabling upright stance and walking. The skeleton of the foot is made up of 26 bones.

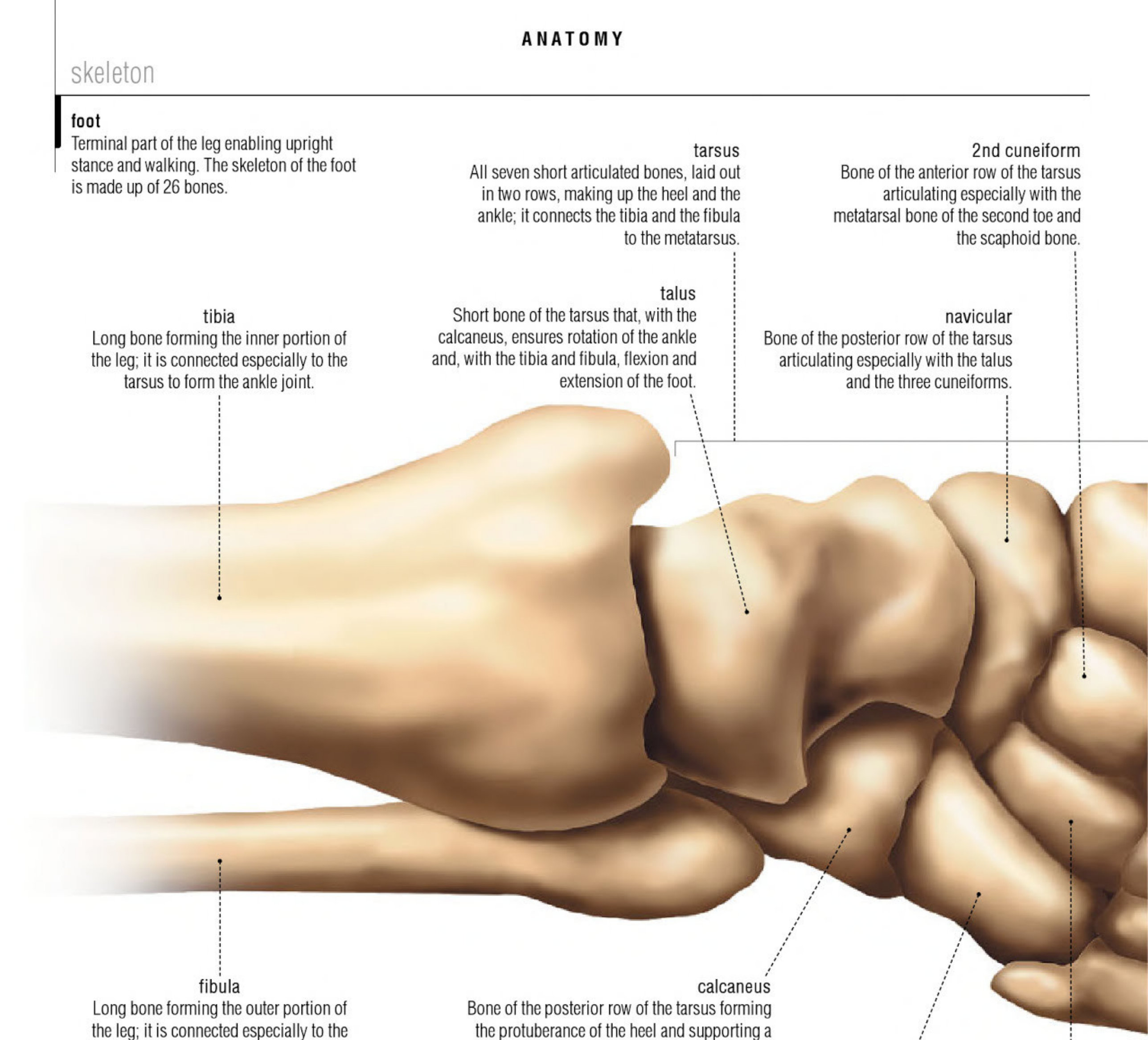
tarsus
All seven short articulated bones, laid out in two rows, making up the heel and the ankle; it connects the tibia and the fibula to the metatarsus.

2nd cuneiform
Bone of the anterior row of the tarsus articulating especially with the metatarsal bone of the second toe and the scaphoid bone.

talus
Short bone of the tarsus that, with the calcaneus, ensures rotation of the ankle and, with the tibia and fibula, flexion and extension of the foot.

navicular
Bone of the posterior row of the tarsus articulating especially with the talus and the three cuneiforms.

tibia
Long bone forming the inner portion of the leg; it is connected especially to the tarsus to form the ankle joint.



fibula
Long bone forming the outer portion of the leg; it is connected especially to the bones of the tarsus to form the ankle joint.

calcaneus
Bone of the posterior row of the tarsus forming the protuberance of the heel and supporting a large portion of the body's weight; the Achilles tendon is attached to it.

cuboid
Bone of the anterior row of the tarsus articulating especially with the metatarsal bones of the two last toes.

lateral cuneiform
Bone of the anterior row of the tarsus articulating especially with the metatarsal bone of the third toe.

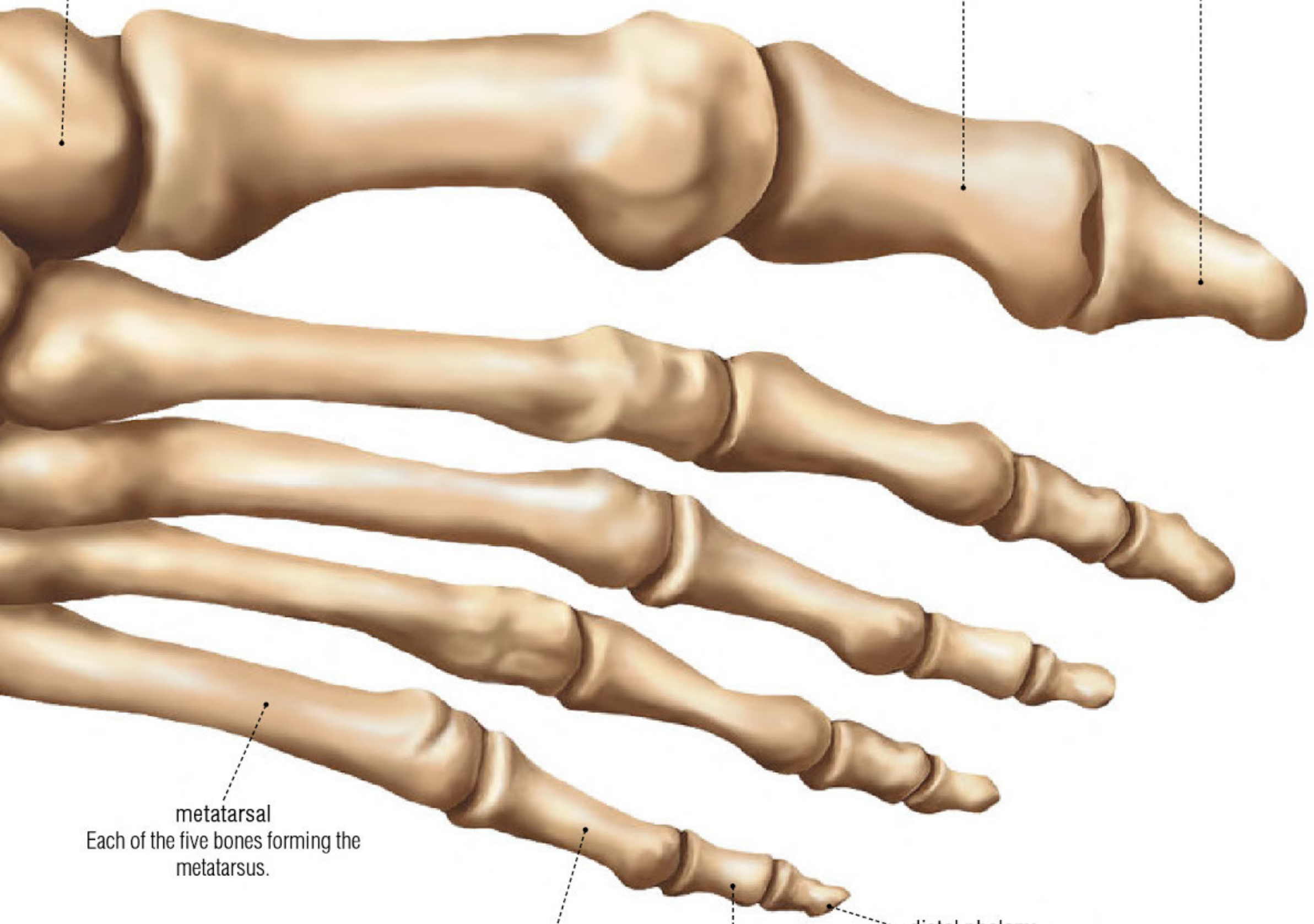
metatarsus
All five long bones that make up the sole of the foot; it connects the anterior row of the tarsus to the proximal phalanges.

proximal phalanx
First phalanx of the toe; it is joined to the metatarsus.

1st cuneiform
Bone of the anterior row of the tarsus articulating especially with the metatarsal bone of the big toe and the scaphoid bone.

phalanges
Articulated bones forming the skeleton of the toes. Each toe has three, while the big toe has only two.

distal phalanx
Last phalanx of the toe bearing a nail.



metatarsal
Each of the five bones forming the metatarsus.

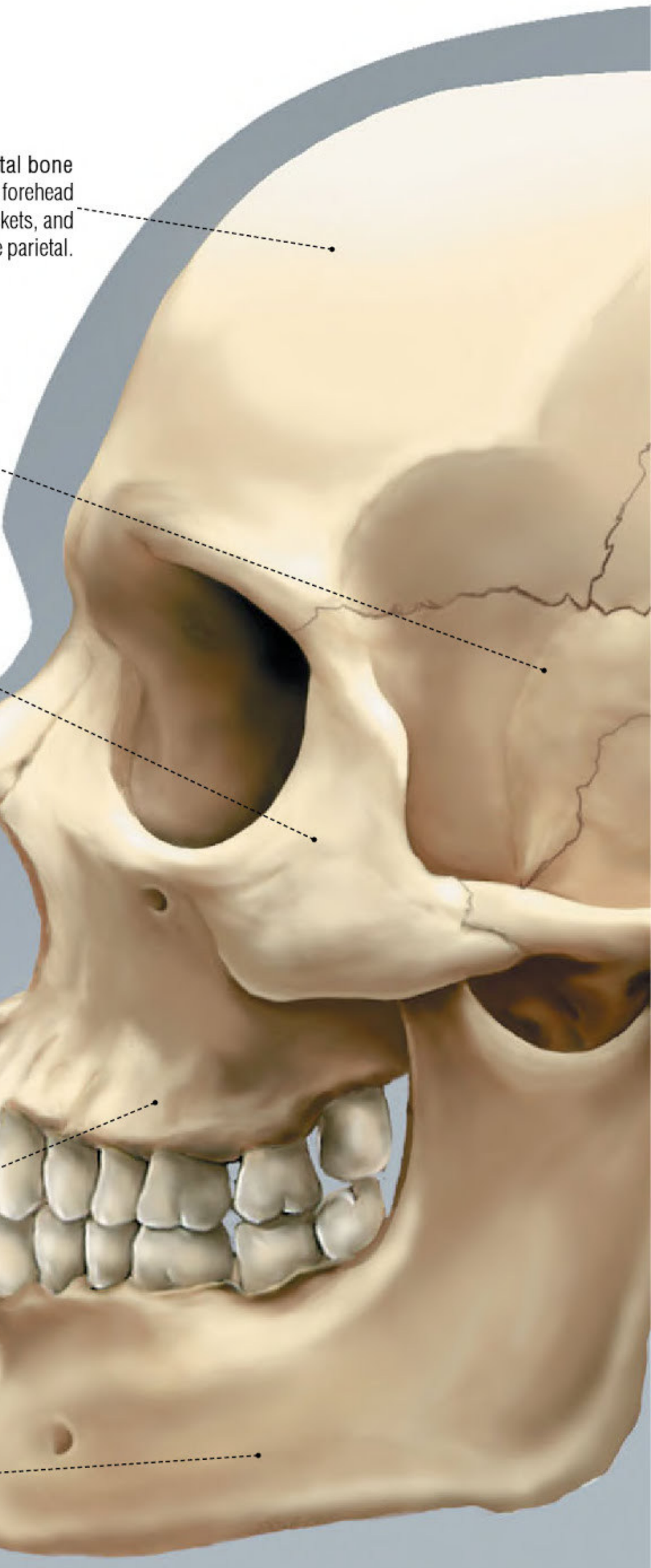
proximal phalanx
First phalanx of the toe; it is joined to the metatarsus.

middle phalanx
Second phalanx of the toe between the proximal and distal phalanges. The big toe does not have a middle phalanx.

distal phalanx
Last phalanx of the toe bearing a nail.

lateral view of skull

Skull: bony structure enclosing and protecting the brain. The eight cranial bones in an adult are fused to each other by means of sutures.



frontal bone
Flat skull bone forming the forehead and top of the eye sockets, and articulating especially with the parietal.

sphenoid bone
Bone located behind the nasal fossae; it articulates with all the cranial bones.

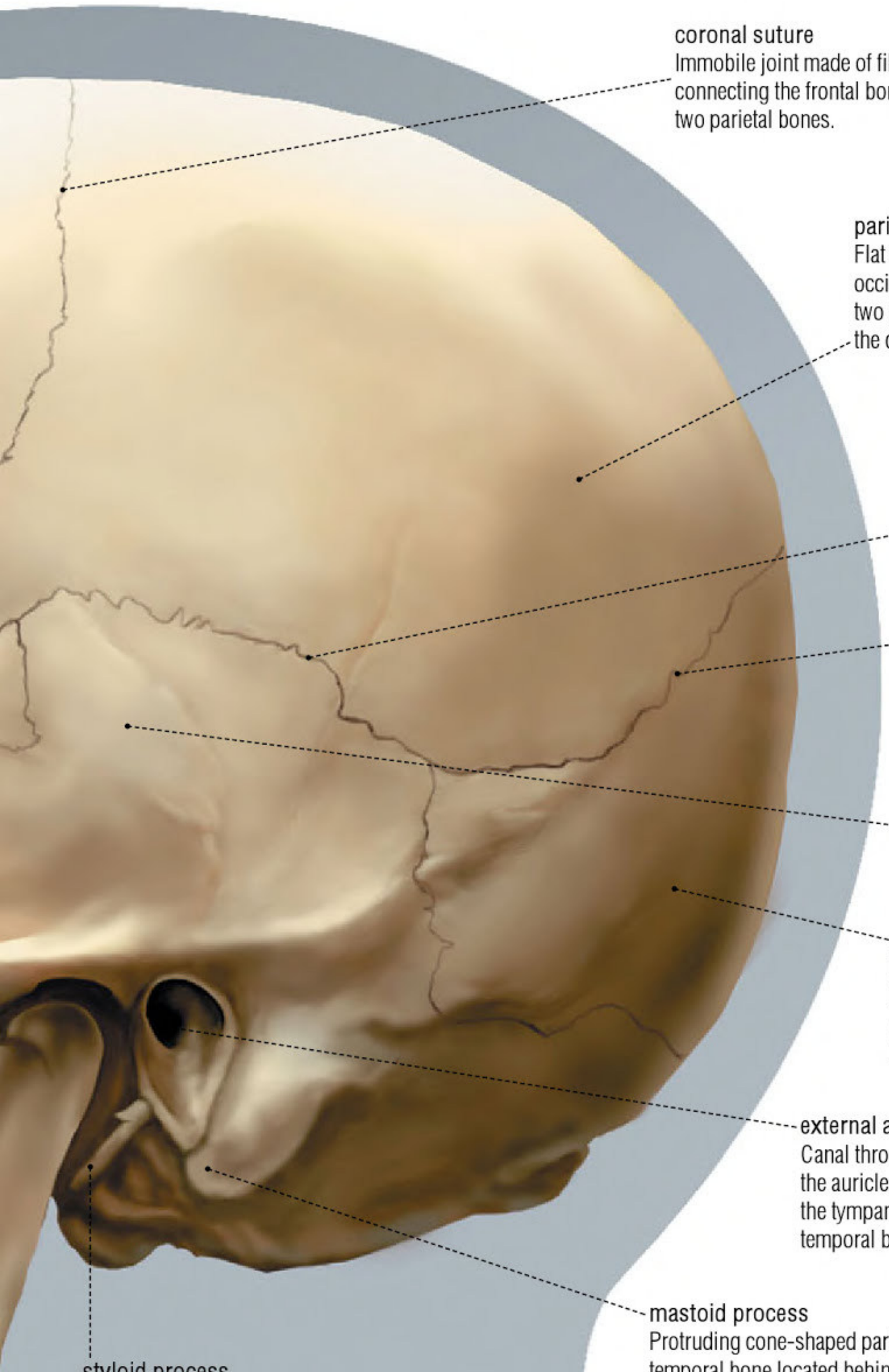
zygomatic bone
Bone forming the cheek pouch and the outer edge of the eye socket.

nasal bone
Small flat bone making up the skeleton of the nose; the two nasal bones are joined along the bridge of the nose.

anterior nasal spine
Bony middle protuberance of the jawbone beneath the nasal fossae; it supports the cartilage of the dividing wall of the nose.

maxilla
Toothed bone forming the upper jaw; it helps to form the palate, eye sockets and nasal fossae.

mandible
Movable toothed bone forming the lower jaw; it is the only movable bone in the head and its articulation with the temporal bone allows the jaw to move.



coronal suture
Immobile joint made of fibrous tissue connecting the frontal bone and the two parietal bones.

parietal bone
Flat cranial bone articulating with the frontal, occipital, temporal and sphenoid bones; the two parietal bones form the largest portion of the dome of the skull.

squamous suture
Immobile joint made of fibrous tissue connecting the parietal and temporal bones.

lambdoid suture
Immovable joint made of fibrous tissue connecting the occipital and the two parietal bones.

temporal bone
Flat skull bone that protects mainly the organs responsible for hearing and equilibrium.

occipital bone
Flat skull bone articulating with the parietal bone and atlas (first cervical vertebra), among others; it makes up the largest portion of the base of the skull.

external auditory meatus
Canal through which sounds collected by the auricle (outer section of the ear) reach the tympanic cavity, a hollow in the temporal bone.

mastoid process
Protruding cone-shaped part of the temporal bone located behind the outer ear. Certain neck muscles, such as the sternocleidomatoid, are attached to it.

styloid process
Elongated protuberance of the temporal bone; several tongue muscles are attached to it.