

**UNIT 3.****THE SKELETAL SYSTEM**

The skeletal system consists of bones, joints, ligaments, tendons and cartilages. It serves many functions. It supports the body and protects vital organs. It allows body movement and provides the shape to our bodies. Also, it stores minerals and produces blood.

Disorders of the skeletal system include fractures, postural deformities (hyperkyphosis, hyperlordosis, scoliosis) and many other skeletal conditions such as osteoporosis, arthritis, rickets or osteomalacia.

**The skeleton**

The adult human skeleton is composed of 206 bones. It is divided into two sections: the axial skeleton and the appendicular skeleton. The axial skeleton consists of the skull, the rib cage and the vertebral column. The appendicular skeleton is made up of the upper limbs, the lower limbs, the shoulder girdle and the pelvic girdle.

The skull consists of cranial bones and facial bones. There are 8 cranial bones: the frontal bone, two temporal bones, two parietal bones, the occipital bone, the sphenoid bone and the ethmoid bone. These 8 bones comprise the cranium, which protects the brain. The facial bones include the mandible, the maxilla, the nasal bone and two zygomatic bones (commonly called the cheekbones).

The rib cage contains 24 ribs arranged in 12 pairs. The first seven pairs of ribs are connected directly to the sternum (commonly called the breast bone). These ribs are referred to as the true ribs. The next three pairs of ribs are called the false ribs. These bones are not attached directly to the sternum, but to the costal cartilage of the lowest true ribs. The last two pairs of ribs, called the floating ribs, are unattached in front.

The vertebral column consists of 33 vertebrae. A single bone is called a vertebra. The 33 vertebrae are divided into 5 regions: the 7 cervical vertebrae, 12 thoracic vertebrae, 5 lumbar vertebrae, 5 sacral and 4 coccygeal vertebrae fused together to form the sacrum and the coccyx. The intervertebral

**WORDLIST**

appendicular skeleton /ə.pən'dɪkjʊlə  
'skelɪtən/ – szkielet obwodowy  
arthritis /a:'θraɪtɪs/ – zapalenie stawów  
axial skeleton /'æksɪəl 'skelɪtən/ –  
szkielet osiowy

breast bone /'brest ,bəʊn/ – mostek

carpal bone /'kɑ:pəl ,bəʊn/ – kość  
nadgarstka

cartilage /'kɑ:təlɪdʒ/ – chrząstka

cervical vertebra /'sɜ:vɪkəl 'vɜ:tɪbrə/ –  
kręgosłup szyjny

cheekbone /'tʃi:kbeɪn/ – kość  
policzkowa

clavicle /'klævɪkəl/ – obojczyk

coccygeal vertebra /kɒk'sɪdʒiəl  
'vɜ:tɪbrə/ – kręgosłup krzyżowy

coccyx /'kɒksɪks/ – kość krzyżowa

collarbone /'kɒləbəʊn/ – obojczyk

costal cartilage /'kɒstəl 'kɑ:təlɪdʒ/ –  
chrząstka żebrowa

cranial bone /'kreɪniəl ,bəʊn/ – kość  
mózgoczaszki

cranium /'kreɪniəm/ (pl. crania  
'kreɪniə/) – mózgoczaszka

ethmoid bone /'eθmɔɪd ,bəʊn/ – kość

sitowa

facial bone /'feɪʃəl ,bəʊn/ – kość  
twarzoczaszki

false rib /'fɔ:ls ,rɪb/ – żebro rzekome

femur /'fi:mə/ – kość udowa

fibula /'fɪbjʊlə/ (pl. fibulae /'fɪbjʊli:/,  
fibulas /'fɪbjʊləz/) – kość

strzałkowa

floating rib /'flaʊtɪŋ ,rɪb/ – żebro  
wolne

frontal bone /'frʌntəl ,bəʊn/ – kość  
czołowa

fused /'fju:zd/ – zrośnięty, zespolony

hip bone /'hɪp ,bəʊn/ – kość miednicza

## Unit 3. The skeletal system

discs, which are found between the vertebrae, allow the spine to move.

The shoulder girdle, also called the pectoral girdle, is made up of 2 bones, the clavicle and the scapula. The clavicle, or the collarbone, is connected medially to the sternum and laterally to the scapula. The scapula is commonly called the shoulder blade.

The upper extremity is made up of the bones of the arm, the forearm, the wrist and the hand. The arm consists of a single bone called the humerus. The forearm contains 2 bones, the radius and the ulna. The wrist consists of 8 carpal bones. The hand is made up of 5 metacarpals and 14 finger bones referred to as phalanges. A single finger bone is called a phalanx. Each finger has three phalanges, except the thumb, which has two phalanges.

The pelvic girdle is composed of two hip bones. Each hip bone is made up of three fused bones: the ilium, the ischium and the pubis.

The lower extremity is made up of the bones of the thigh, the leg, the ankle, and the foot. The thigh contains one bone, the femur, which is the longest and the heaviest bone in the body. The leg consists of 2 bones, the tibia and fibula. The ankle is composed of 7 tarsal bones. The foot contains 5 metatarsals and 14 phalanges. The toes, like the fingers, have three phalanges, except the big toe, which has two phalanges.

## EXERCISES

## I. Answer the questions.

1. What is the function of the skeletal system?
2. What conditions and disorders affect the skeletal system?
3. Which bones does the cranium contain?
4. What does the term "false ribs" mean?
5. What are vertebrae? How are they divided?
6. What does the appendicular skeleton consist of?
7. What is the shoulder girdle composed of?
8. What are phalanges? Where are they found?

## II. Decide whether the following sentences are true or false. Correct the false ones.

1. The terms "pelvic girdle" and "pectoral girdle" are synonymous.
2. The sternum is found within the axial skeleton.
3. Each finger and toe has three phalanges including the thumb and the big toe.
4. Each hip bone contains the ilium, the ischium and the sacrum.

humerus /'hju:mərəs/ (pl. humeri /'hju:məraɪ/) – kość ramienna

ilium /'ɪliəm/ (pl. ilia /'ɪliə/) – kość biodrowa

intervertebral disc /,ɪntə'veɪ:tɪbrəl 'dɪsk/ – krążek międzykręgowy

ischium /'ɪskiəm/ (pl. ischia /'ɪskiə/) – kość kulszowa

ligament /'lɪgəmənt/ – więzadło

lumbar vertebra /'lʌmbə 'vɜ:tɪbrə/ – kręgi lędźwiowy

mandible /'mændɪbəl/ – żuchwa

maxilla /mæk'sɪlə/ (pl. maxillae /mæk'sɪli:/) – szczęka

metacarpal /metə'kɑ:pəl/ – kość śródreżca

metatarsal /metə'tɑ:səl/ – kość śródstopia

nasal bone /'neɪzəl ,bəʊn/ – kość nosowa

occipital bone /'ɒkɪpɪtəl ,bəʊn/ – kość potyliczna

osteomalacia /,ɒstɪəʊmə'leɪʃɪə/ – rozmięknienie kości, demineralizacja kości

osteoporosis /,ɒstɪəʊpə:'rəʊsɪs/ – osteoporoza

parietal bone /pə'riətəl ,bəʊn/ – kość ciemieniowa

phalanx /'fæləŋks/ (pl. phalanges /fə'lændʒɪ:z/) – paliczek

pubis /'pjʊ:bɪs/ (pl. pubes /'pjʊ:bɪ:z/) – kość łonowa

radius /'reɪdiəs/ (pl. radius /'reɪdiəl/, radiuses /'reɪdiəsɪz/) – kość promieniowa

rib cage /rɪb keɪdʒ/ – klatka piersiowa

rickets /'rɪkɪts/ – krzywica

sacral vertebra /'seɪkrəl 'vɜ:tɪbrə/ – kręgi krzyżowy

sacrum /'seɪkrəm/ (pl. sacra /'seɪkrə/) – kość krzyżowa

scapula /'skæpjʊlə/ (pl. scapulae /'skæpjʊli:/, scapulas /'skæpjʊləz/) – łopatką

5. The cranium contains two parietal bones and two occipital bones.
6. There are five metatarsal bones in each hand.

### III. Complete the sentences with the appropriate anatomical terms.

1. The bones of the forearm include the ..... and the .....
2. The bones of the ankle and the foot comprise the ..... , the ..... and the .....
3. The axial skeleton consists of the ..... and the .....
4. The leg is composed of the ..... and the .....
5. The term "shoulder blade" is given to the .....
6. The bone of the arm is known as the .....
7. The 2 pairs of ribs that are unattached in front are referred to as the .....
8. The vertebral column is made up of 7 ..... vertebrae, 12 ..... vertebrae, 5 ..... vertebrae, 5 ..... vertebrae and 4 ..... vertebrae.

### IV. Give the plural form to the following nouns.

1. vertebra – .....
2. phalanx – .....
3. scapula – .....
4. radius – .....
5. cranium – .....
6. tibia – .....

### V. Replace the terms with their medical equivalents.

1. thigh bone = .....
2. shoulder blade = .....
3. collarbone = .....
4. cheekbone = .....
5. finger bone = .....
6. lower jaw = .....
7. breast bone = .....
8. central skeleton = .....

shoulder blade /'ʃəʊldə ,bleɪd/ –	łopatka
skull /skʌl/ –	czaszka
sphenoid bone /'sfi:nɔɪd ,bəʊn/ –	kość klinowa
sternum /'stɜ:nəm/ (pl. sterna /'stɜ:nə/)	– mostek
store /stɔ:/ –	przechowywać, magazynować, składować
tarsal bone /'ta:səl ,bəʊn/ –	kość stępu
temporal bone /'tempərəl ,bəʊn/ –	kość skroniowa
tendon /'tendən/ –	ścięgno
thoracic vertebra /θɔ:'ræsɪk 'vɜ:tɪbrə/ –	kręgi piersiowy
tibia /'tɪbiə/ (pl. tibiae /'tɪbi:/, tibiae /'tɪbiəz/) –	kość piszczelowa
true rib /tru: ,rɪb/ –	żebro prawdziwe
ulna /'ʌlnə/ (pl. ulnae /'ʌlni:/, ulnas /'ʌlnəz/) –	kość łokciowa
vertebra /'vɜ:tɪbrə/ (pl. vertebrae /'vɜ:tɪbreɪ/, vertebrae /'vɜ:tɪbrəz/)	– kręgi
vertebral column /'vɜ:tɪbrəl 'kɒləm/ –	kręgosłup
zygomatic bone /,zaɪgəʊ'mætɪk bəʊn/ –	kość jarzmowa