

CHAPTER XII
ORTHOPEDICS

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VOCABULARY

Ankylosis: (arthroclisis, arthroklesis) (adj: ankylotic)	Immobility and consolidation of a joint due to disease, injury, or surgical procedure (pl. ankyloses)
Aponeurosis: (adj: aponeurotic)	A white, flattened or ribbon-like tendinous expansion (pl.: aponeuroses)
Bunion:	Abnormal prominence of the inner aspect of the first metatarsal head, accompanied by bursal formation and resulting in a lateral or valgus displacement of the great toe
Bursa: (adj: bursal)	A sac or sac-like cavity filled with a viscid fluid and situated at places in the tissues at which friction would otherwise develop. (pl.: bursae)
Cast:	A rigid dressing molded to the body while pliable, and hardening as it dries, to give firm support
Closed fracture: (Simple fracture)	A fracture that does not produce an open wound in the skin
Colles' fracture:	Fracture of the lower end of the radius in which the lower fragment is displaced posteriorly
Comminuted fracture:	One in which the bone is splintered or crushed
Coxa valga:	Coxa = hip; valga = valgus (bent outward, i.e. displaced laterally) A deformity of the hip in which the angle formed by the axis of the head and neck of the femur and of its shaft is increased
Coxa vara: (Coxa adducta) (Coxa flexa)	A deformity of the hip in which the angle formed by the axis of the head and neck of the femur and of its shaft is decreased
Ewing's sarcoma:	A highly malignant bone tumor of children or adolescents (5-15 years old)
Fontanelle: (Fontanel; fonticulus) (pl: fonticuli)	Membranous-covered space remaining in the incompletely ossified skull of a fetus or infant

Fracture:	A break of bone
Ganglion:	A benign cystic tumor occurring on a tendon (pl.: ganglia)
Genu valgum: (Knock knee)	Genu = knee; valgum = valgus = bent outward A deformity in which the knees are abnormally close together and the space between the ankles is increased
Genu varum: (Bowleg)	A deformity in which the knees are abnormally separated and the lower extremities are bowed inwardly
Gout:	Recurrent inflammatory arthritis induced by crystals of monosodium urate monohydrate leading to crippling destruction of joints (adj: gouty)
Greenstick fracture:	Fracture in which one side of a bone is broken, the other being bent
Impacted fracture:	Fracture in which one fragment is firmly driven into the other
Kyphosis: (Hunchback)	Abnormally increased convexity of the curvature of the thoracic spine as viewed from the side (adj: kyphotic)
Lamina: (adj: laminar) (pl. laminae)	Flat plate of bone forming part of the vertebral arch
Ligament: (ligamentum) (adj: ligamentous)	A band of tissue that connects bones
Lordosis:	The anterior concavity in the curvature of the lumbar and cervical spine as viewed from the side (adj: Lordotic)
Meniscus: (pl: menisci) (adj: meniscal)	A wedge-shaped crescent of fibrocartilage found inside some synovial joints
Metastatic bone lesions: (Metastasis)	Malignant tumors from other parts of the body spreading to bones

Open fracture: (compound fracture)	One in which there is an external wound leading to the break of the bone
Ossification: (adj: ossific)	Formation of bone Ossific: forming or becoming like bone
Osteodystrophy: (Osteodystrophia) (adj: osteodystrophic)	Defective bone formation
Osteogenic sarcoma: (Osteosarcoma)	Malignant tumor arising from bone
P.T.	Physical Therapy
Pathologic fracture: (secondary fracture; spontaneous fracture)	One due to weakening of the bone structure by pathologic processes e.g. neoplasia, osteomalacia, osteomyelitis
Plaster Cast: Plaster of Paris	Gypsum material which hardens when mixed with water and then used to immobilize a body part.
Reduction:	Correction of a fracture or of a dislocation; closed reduction: without incision; open reduction with incision
Sciatica: (Sciatic neuralgia; sciatic neuritis)	A syndrome characterized by pain radiating from the back into the buttock and into the posterior or lateral aspect of the lower extremity
Scoliosis:	Lateral deviation in the vertical line of the spine (adj: Scoliotic)
Talipes equinovalgus:	A deformity of the foot in which the heel is elevated and turned outward from the midline of the leg
Talipes equinovarus:	A deformity of the foot in which the heel is elevated and turned inward from the midline of the leg
Talipes equinus:	A deformity in which the foot is plantar flexed.
Talipes valgus:	A deformity of the foot in which the heel is turned outward from the midline of the leg
Talipes varus:	A deformity of the foot in which the heel is turned inwards from the midline of the leg

Talipes: (Clubfoot; reel foot) (adj: talipedic)	Congenital deformity of the foot, which is twisted out of shape and position Taliped: a clubfooted person
Tendon: (adj: tendinous)	A fibrous cord of connective tissue by which a muscle is attached
Valgus:	Bent outward, twisted. It is an adjective and should be used with the noun it describes
Varus:	Bent inward; angulation of the part is towards the midline of the body. It is an adjective and should be used with the noun it describes

COMBINING FORMS

COMBINING FORM	DENOTING RELATIONSHIP TO	COMBINED WITH	MEANING	TERM	MEANING
Arthro__	Joint	__lysis	Breakdown	Arthrolysis (arthroclasia)	The operative loosening of adhesions in an ankylosed joint
Arthro__	Joint	__lithiasis	stone formation	Arthrolithiasis	Gout
Arthro__	Joint	__algia	Pain	Arthralgia (arthrodynia)	Pain in a joint
Arthro__	Joint	Neuralgia	Nerve pain	Arthroneuralgia	Pain arising in or around a joint
Arthro__	Joint	__pathy	Disease	Arthropathy (Arthropathia; arthrosis)	Any joint disease (adj: arthropathic)
Arthro__	Joint	Pathology	Study of structural and functional manifestations of disease	Arthropathology	The study of the structural and functional changes produced in the joints by disease
Arthro__	Joint	__phyma	Skin growth produced by exudation into the subcutaneous tissues	Arthropphyma (arthroncus)	A swelling of a joint
Arthro__	Joint	Dysplasia	Abnormality of development	Arthrodysplasia	A hereditary condition marked by deformity of various joints
Arthro__	Joint	Pyosis	Pus formation	Arthropyosis (arthroempyesis)	The formation of pus in a joint cavity
Arthro__	Joint	Endoscopy	Visual inspection of a cavity by an endoscope	Arthroendoscopy (arthroscopy)	Examination of the interior of a joint with an arthroscope
Arthro__	Joint	__stomy	Opening	Arthrostomy	Creation of an opening into a joint for drainage
Arthro__	Joint	Synovitis	Inflammation of a synovial membrane	Arthrosynovitis (arthromeningitis)	Inflammation of the synovial membrane of a joint
Arthro__	Joint	Gryposis	Abnormal curvature	Arthrogryposis	Persistent flexure or contracture of a joint
Arthro__	Joint	__plasty	Surgical repair	Arthroplasty	Plastic surgery of a joint

COMBINING FORM	DENOTING RELATIONSHIP TO	COMBINED WITH	MEANING	TERM	MEANING
Arthro__	Joint	Pneumoradiography	Radiography after injection of air	Arthropneumoradiography (arthropneumography)	Radiography of a joint after injection into it of air, oxygen or carbon dioxide
Arthro__	Joint	Ereisis	Limiting the motion	Arthroereisis (arthrorisis)	Operative limiting of the motion in a joint that is abnormally mobile from paralysis
Arthro__	Joint	Sclerosis	Hardening	Arthrosclerosis	Stiffening of a joint
A.thro__	Joint	__phyte	Abnormal growth	Arthrophyte (adj: arthrophytic)	An abnormal growth in a joint cavity
A.thro__	Joint	__tome	A knife	Arthrotome	A knife for incising a joint
A.thro__	Joint	__tomy	Incision	Arthrotomy	Incision of a joint
Arthro__	Joint	__xesis	Scraping	Arthroxesis	The scraping of diseased tissue from an articular surface
Hemo__	Blood	Arthrosis	Disease of a joint	Hemoarthrosis	Presence of blood in a joint cavity

PREFIXES

PREFIX	MEANING	COMBINED WITH	MEANING	TERM	MEANING
Dis__	Separation	Location	Place	Dislocation (luxation) (luxatio)	Displacement of a bone
Sub__	Partial	Luxation	Dislocation	Subluxation	Incomplete or partial dislocation
Ex__	Outside	Ostosis	Osteogenesis	Exostosis	A benign bony growth projecting outward from the surface of a bone
Peri__	Around	Arthritis	Inflammation of a joint	Periarthritis	Inflammation of the tissues around a joint
Peri__	Around	Arthric	Pertaining to a joint	Periarthric	Around a joint
Hyper__	Excess	Lordosis	The anterior concavity of the lumbar spine	Hyperlordosis	Extremely marked lordosis
Hyper__	Excess	Calcemia	Calcium in the blood	Hypercalcemia (Hypercalcinemia)	Excess of calcium in the blood
Hyper__	Excess	Calciuria (calcinuria)	Calcium in urine	Hypercalciuria (hypercalcinuria)	Excess of calcium in the urine
Hyper__	Excess	Uricemia	Uric acid in the blood	Hyperuricemia (adj: hyperuricemic)	Excess of uric acid in the blood
Hyper__	Excess	Uricuria	Uric acid in the urine	Hyperuricuria (Hyperuricaciduria)	Excess of uric acid in the urine
Anti__	Against	Pyrexia	Fever	Antipyretic (antifebrile) (antithermic)	Relieving or reducing fever
Pre__	Before	Patella (adj: patellar)	A sesamoid bone situated in front of the knee	Prepatellar	In front of the patella
Infra__	Below	Patella (adj: patellar)	A sesamoid bone in front of the knee	Infrapatellar	Below the patella
Poly__	Many	Arthralgia	Pain in joint	Polyarthralgia	Pain in several joints
Poly__	Many	Myositis	Inflammation of muscles	Polymyositis	A chronic progressive inflammatory disease of skeletal muscles
Poly__	Many	Myopathy	Disease of muscle	Polymyopathy	Disease affecting several muscles simultaneously
Poly__	Many	Myalgia	Muscle pain	Polymyalgia	Pain affecting several muscles
Dys__	Disordered; abnormal	__trophy	Nourishment	Dystrophy	Any disorder arising from defective or faulty nutrition
Epi__	Upon	__physis	Growth cartilage	Epiphysis (adj: epiphyseal; epiphysial)	The expanded articular end of a long bone (pl. epiphyses)
Meta__	Next After	__physis	Growth cartilage	Metaphysis (adj: metaphyseal; metaphysial)	The part of the shaft adjacent to the epiphysial disc

SUFFIXES

SUFFIX	MEANING	COMBINED WITH	MEANING	TERM	MEANING
__dynia	Pain	Lumbo__	Lumbar (loins)	Lumbodynia (lumbago)	Pain in the lumbar region
__ectomy	Excision	Menisco__	Meniscus	Meniscectomy	Excision of an intra-articular meniscus
__ectomy	Excision	Lamina	Flat part of the vertebral arch	Laminectomy	Excision of the posterior arch of a vertebra
__ectomy	Excision	Tarso__	Tarsus	Tarsectomy	Excision of the tarsus
__itis	Inflammation of	Menisco__	Meniscus	Meniscitis	Inflammation of a meniscus of the knee joint
__itis	Inflammation of	Spondylo__	Vertebra	Spondylitis (rachitis)	Inflammation of the vertebrae (single: vertebra)
__itis	Inflammation of	Myelo__	Bone marrow Spinal cord	Myelitis	Inflammation of bone marrow / or spinal cord
__itis	Inflammation of	Teno__	Tendon	Tendonitis (Tenonitis) (Tenonitis) (Tendinitis)	Inflammation of a tendon
__malacia	Softening	Spondylo__	Vertebra	Spondylomalacia (adj: spondylomalacic)	Softening of vertebrae
__malacia (adj: malacic)	Softening	Chondro__	Cartilage	Chondromalacia (adj: chondromalacic)	Softening of cartilage
__olisthy (adj: olisthetic) __ (olisthe)	Slipping; displacement	Spondylo__ (adj: spondylous)	Vertebra	Spondylolisthesis (spondyloptosis) Spondyl + olisthe + sis	Forward displacement of one vertebra over another (adj: Spondylolisthetic)
__osis	Disease process	Spondylo__	Vertebra	Spondylosis (adj: spondylotic)	Ankylosis of a vertebral joint; osteoarthritic changes of the spine
__opathy	Disease	Spondylo__	Vertebra	Spondylopathy (rachioopathy)	Any disorder of the vertebrae
__poiesis	Formation	Myelo__	Marrow	Myelopoiesis	Formation of bone marrow or bone marrow cells
__porosis	Cavity Formation	Osteo__	Bone	Osteoporosis (osteopenia)	Reduction in the bone mass leading to fractures after minimal trauma
__pyosis	Suppuration	Spondylo__	Vertebra	Spondylopyosis	Suppuration of a vertebra or vertebrae
__orrhaphy	Suturing	Teno__	Tendon	Tenorrhaphy (tenosuture)	The union of a divided tendon by a suture

SUFFIX	MEANING	COMBINED WITH	MEANING	TERM	MEANING
__schisis	Fissure	Spondylo__	Vertebra	Spondyloschisis (Rachischisis)	Congenital fissure of the vertebral column
__syndesis	Fusion	Spondylo__	Vertebra	Spondylosyndesis	Spinal fusion
__tomy	Incision	Teno__	Tendon	Tenotomy (Tenontotomy) (Tendotomy)	The surgical cutting of a tendon

ACRONYMS & ABBREVIATIONS

ACL:	Anterior cruciate ligament
C1-C7	Cervical vertebrae
Ca:	Calcium
CPK:	Creatinine Phosphokinase
CTS:	Carpal Tunnel Syndrome
DTR:	Deep Tendon Reflexes
EMG:	Electromyography
ESR:	Erythrocyte Sedimentation Rate
IM:	Intramuscular
L1-L5:	Lumbar vertebrae
Ortho:	Orthopedics; orthopaedics
P:	Phosphorus
RA:	Rheumatoid arthritis
RF:	Rheumatoid Factor
ROM:	Range of Motion
T1-T12:	Thoracic vertebrae
TMJ:	Temporomandibular joint

ASSIGNMENT # 17

SUFFIXES = MEANING	COMBINING FORMS = DENOTING RELATIONSHIP TO
__algia; dynia = pain	Arthro__ = joint
__cele = swelling (phyma)	Electro__ = electricity
__centesis = aspiration	Myo__ = muscle
__clasia = surgical breaking down	Osteo__ = Bone
__clisis = immobility	Rhabdo__ = rod
__desis = binding; fusion	Tendino__
__genesis = production	Teno__ = } Tendon
__graphy = recording	Tenonto__
__itis = inflammation	
__oma = tumor	
__pathy = disease	
__plasty = repair	
__rrhagia = bleeding	
__rrhaphy = suture; repair	
__scopy = viewing with a scope	
__tomy = cutting into	

Use the above combining forms and suffixes to produce the medical term for each of the following meanings:

1. Radiography of a joint after injection of opaque contrast material: _____
2. The surgical fixation of a joint: _____
3. Any joint disease: _____
4. A swollen joint: _____
5. Puncture and aspiration of a joint: _____
6. Immobility and consolidation of a joint: _____
7. Examination of the interior of a joint with a scope: _____
8. Surgical breaking down of an ankylosis: _____
9. Electrodiagnostic technique for recording activity of skeletal muscles _____
10. A benign tumor derived from striated muscle: _____
11. A non-inflammatory degenerative joint disease: _____

- 12. The absorption and destruction of bone tissue: _____
- 13. Any disease of joints and bones: _____
- 14. Excision of an articular end of a bone: _____
- 15. The suturing or wiring of bone: _____
- 16. Surgical cutting of a bone: _____
- 17. Hemorrhage from bone: _____
- 18. Formation of bone: _____
- 19. Any disease of bone: _____
- 20. Pain in a tendon: _____
- 21. Plastic surgery of tendons: _____

ASSIGNMENT # 18

A. Give the meaning for each of the following actions. In the last column write the term for the muscle that produces the action:

ACTION	MEANING	TERM FOR THE EFFECTOR MUSCLE
1. Flexion :		
2. Extension:		
3. Abduction:		
4. Adduction:		
5. Rotation:		
6. Dorsiflexion:		
7. Plantar flexion:		
8. Palmar flexion:		
9. Supination:		
10. Pronation:		

B. Give the meaning and adjective/s for each of the following terms:

TERM	MEANING	ADJECTIVE
11. Fascia: (pl: fasciae)		
12. Muscle:		
13. Skeleton:		
14. Tendon		
15. Articulatio (Articulation)		
16. Ligament:		

Answers to Assignment 17

1. Arthrography
2. Arthrodesis (Syndesis)
3. Arthropathy
4. Arthrocele; (anthrophyma)
5. Arthrocentesis
6. Arthroclisis; (ankylosis)
7. Arthroscopy
8. Arthroclasia
9. Electromyography
10. Myoma; Rhabdomyoma
11. Osteoarthritis (osteoarthrosis)
12. Osteoclasia; osteoclasis
13. Osteoarthropathy
14. Osteoarthrotomy (Ostearthrotomy)
15. Osteorrhaphy
16. Osteotomy
17. Osteorrhagia
18. Osteogenesis
19. Osteopathy; osteopathia
20. Tenalgia; tendodynia; tenontodynia
21. Tenoplasty; tenontoplasty

Answers to Assignment 18

A.

ACTION	MEANING	TERM FOR THE EFFECTOR
1. Flexion:	Bending of a joint	Flexor
2. Extension:	Straightening a bent joint	Extensor
3. Abduction:	Movement away from the midline of the body	Abductor
4. Adduction:	Movement towards the midline of the body	Adductor
5. Rotation:	Circular movement around an axis	Rotator
6. Dorsiflexion:	Upward bending of the foot or backward bending of the hand at the wrist joint	Dorsiflexor
7. Plantar flexion:	Downward bending of the foot	Plantar flexor
8. Palmar flexion:	Forward bending of the hand at the wrist joint	Palmar flexor
9. Supination:	Rotating the forearm such that the palm of the hand faces forward	Supinator
10. Pronation:	Rotating the forearm such that the palm of the hand faces backward	Pronator

B.

TERM	MEANING	ADJECTIVE
11. Fascia: (pl: fasciae)	Fibrous membrane surrounding and separating muscles	Fascial
12. Muscle:	An organ which contracts to produce movement	Muscular
13. Skeleton:	The bony framework of the body	Skeletal
14. Tendon	A fibrous cord of connective tissue by which a muscle is attached	Tendinous
15. Articulatio (Articulation)	Junction between two or more bones	Articular
16. Ligament:	A band of connective tissue that connects bones	Ligamentous