Curriculum

DNB Broad Specialty

Orthopaedics

- Objectives of the Programme
- Teaching and Training Activities
- Syllabus
- Competencies
- Log Book
- Recommended Text Books and Journals

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I. OBJECTIVES OF THE PROGRAMME:

1. PROGRAMME GOAL

- Patient care Ability: A postgraduate in orthopedics surgery at the end of its three year course should develop proper clinical acumen to interpret diagnostic results and correlate them with symptoms from history taking and become capable to diagnose the common clinical conditions/ disease in the specialty and to manage them effectively with success without making any serious complications and sincerely to take such accurate decision, for the patient's best interest including making a referral to consultation with a more experienced colleague/professional friend while dealing with any patient with a difficult condition.

- Teaching ability: DNB Student also should be able to teach a student about the commonly encountered conditions in orthopedics pertaining to their diagnostic features, basic patho-physiological aspect and the general and basic management strategies.

- Research Ability: Should also acquire elementary knowledge about research methodology, including record-keeping methods, and be able to conduct a research inquiry including making a proper analysis and writing a report on its findings. Data analysis and Use of basic statistical methods require for publication.

- Team work: Should be capable to work as a team member. He/she should develop general human approach to patient care with communication skills with the patient's relatives especially in emergency situation such as in casualty department while dealing with cancer patients and victims of accident. He/she should also maintain human values with ethical consideration.

2. PROGRAMME OBJECTIVES

- **Cognitive knowledge:** Embryology, applied anatomy, physiology, pathology, clinical features, diagnostic procedures and the therapeutics including preventive methods, (medical/surgical) pertaining to musculo-skeletal system.

- **Clinical decision-making ability & management expertise:** Diagnose conditions from history taking, clinical evaluation and investigations and develop expertise to manage medically as well as surgically the commonly encountered, disorders and disease in different areas as follows:

i. **Pediatric orthopedics-** The student should be exposed to all aspects of congenital and developmental disorders such as CTEV(Club-Foot), developmental dysplasia of hip, congential deficiency of limbs, Perthe's disease and infections, and also to acquire adequate knowledge about the principles of management of these disorders.

ii. **Orthopedic oncology-** The resident is expected to be familiar with the tumors encountered in orthopedic practice. The recent trends towards limb salvage procedures and the advances in chemotherapy need to be familiar to him.

iii. **Management of Trauma-** Trauma in this country is one of the main causes of morbidity and mortality in our demographic statistics. The student is expected to be fully conversant with trauma in its entirety. In any type of posting after qualification the orthopedic surgeon would be exposed to all varieties of acute trauma. Hence, it is his responsibility to be able to recognize, assess and manage it including the medico legal aspects.

iv. **Orthopedics Sports Injuries-** A lot of importance is being given to orthopedics sports injuries especially in view of the susceptibility of the athlete to injury and his failure to tide over them. It not only encompasses diagnostic and therapeutic aspects of athletic injuries but also their prevention, training schedules of personnel & their selection.

v. **Physical Medicine and Rehabilitation-** The student is expected to be familiar with this in all its aspects. Adequate exposure in the workshop manufacturing orthotics and prosthetics is mandatory, as is the assessment of the orthopedically handicapped.

vi. **Orthopedic Neurology-** The student should be exposed to all kinds of nerve injuries as regards their recognition & management cerebral palsy and acquired neurologic conditions such as post-polio residual paralysis also need to be emphasized in their entirety.

vii. **Spine Surgery-** The student is expected to be familiar with various kinds of spinal disorders such as scoliosis, kypho-scoliosis, spinal trauma, PIVD, infections (tuberculosis and pyogenic), & tumours as regards their clinical presentations and management.

viii. **Basic sciences in Orthopedics-** This deals with some of the fundamentals in orthopaedics such as the structure and function of bone cartilage etc., and their metabolic process. In addition, the student learns about implants in orthopaedics and their metallurgy.

ix. **Radiology**-Acquire knowledge about radiology/imaging and to interpret different radiological procedures and imaging in musculo-skeletal disorders. There should be collaboration with Radiology department for suchactivities.

x. **Psychologic and social aspect-** Some elementary knowledge in clinical Psychology and social, work management is to be acquired for management of patients, especially those terminally ill and disabled- persons and interacting with their relatives.

- Teaching: Acquire ability to teach an MBBS student in simple and straightforward language about the common orthopedic ailment/disorders especially about their signs/symptoms for diagnosis with their general principles of therapy.

- Research: Develop ability to conduct a research enquiry on clinical materials available in Hospital and in the community.

- Patient doctor relation: Develop ability to communicate with the patient and his/her relatives pertaining to the disease condition, its severity and options available for the treatment/therapy.

- Preventive Aspect: Acquire knowledge about prevention of some conditions especially in children such as poliomyelitis, congenital deformities, cerebral palsy and common orthopedic malignancies.

- Identification of a special areas within the subject: To further develop higher skills within the specialty in a specialized are such as Arthroplasty, Neurology,

Arthroscopy oncology, spine surgery, hand surgery and Rheumatology, identify some area of interest during the residency and do fellowship/ senior residency program in one of such areas.

- Presentation of Seminar/paper: Should develop public speaking ability and should be able to make presentation on disease-conditions/research topics to fellow colleagues in a Seminar/meeting/ conference using audiovisual aids.

- Research writing: Should be capable to write case-reports and research papers for publication in scientific journals.

- Team work: Team spirit in patient management, working together in OPD, OT, ward and sharing responsibility with colleagues such as doctor, nurses and other staff are essential. Resident has to develop these attributes through different mechanism of infection

- **Disaster Management**

- **Rural community clinic for orthopedics**

II. TEACHING AND TRAINING ACTIVITIES:

The fundamental components of the teaching programme should include:

1. Case presentations & discussion- once a week
2. Seminar – Once a week
3. Journal club- Once a week
4. Grand round presentation (by rotation departments and subspecialties)- once a week
5. Faculty lecture teaching- once a month
6. Clinical Audit-Once a Month
7. A poster and have one oral presentation at least once during their training period in a recognized conference.

The rounds should include bedside sessions, file rounds & documentation of case history and examination, progress notes, round discussions, investigations and management plan) interesting and difficult case unit discussions.

The training program would focus on knowledge, skills and attitudes (behavior), all essential components of education. It is being divided into theoretical, clinical and practical in all aspects of the delivery of the rehabilitative care, including methodology of research and teaching.

- **Theoretical:** The theoretical knowledge would be imparted to the candidates through discussions, journal clubs, symposia and seminars. The students are exposed to recent advances through discussions in journal clubs. These are considered necessary in view of an inadequate exposure to the subject in the undergraduate curriculum.

- **Symposia:** Trainees would be required to present a minimum of 20 topics based on the curriculum in a period of three years to the combined class of teachers and students. A free discussion would be encouraged in these symposia. The topics of the symposia would be given to the trainees with the dates for presentation.

- **Clinical:** The trainee would be attached to a faculty member to be able to pick up methods of history taking, examination, prescription writing and management in rehabilitation practice.

- **Bedside**: The trainee would work up cases, learn management of cases by discussion with faculty of the department.

- **Journal Clubs:** This would be a weekly academic exercise. A list of suggested Journals is given towards the end of this document. The candidate would summarize and discuss the scientific article critically. A faculty member will suggest the article and moderate the discussion, with participation by other faculty members and resident doctors. The contributions made by the article in furtherance of the scientific knowledge and limitations, if any, will be highlighted.

- **Research:** The student would carry out the research project and write a thesis/ dissertation in accordance with NBE guidelines. He/ she would also be given exposure to partake in the research projects going on in the departments to learn their planning, methodology and execution so as to learn various aspects of research.

Methods of Training and Teaching: The following learning methods are to be used for the teaching of the postgraduate students:

- **Journal Club:** One-hour duration, once per week. It should cover recent papers published in reputed journals on a particular topic.

- **Seminar:** One-hour duration, once per week. The topic should be prepared by the resident under supervision of faculty.

- **Case presentation:** Clinical case presentations by the postgraduate student before faculty. Should preferably involve one long case or two short cases in each class.

- **X-Ray Classes**- Held twice weekly in morning in which the radiological features of various problems are discussed.

- **Surgical- pathological – radiological conference:** Cases with relevant surgical pathology and radiology should be discussed in detail with help of other departments.

- **Death and Complication Meet:** The whole department should organize a death and complication meet at the last working day of every month. All deaths occurred in emergency and wards, all complications occurred during the management process should be discussed in necessary details and the necessary steps to prevent them may be outlined wherever possible.

- **Exposure of Special clinics like Scoliosis Clinic-** Held once a week. Residents work up the cases of spinal deformity and present them to a faculty member and management plan recorded in case file.

- **Hand Clinic-** Held once a week. All the cases of hand disorders are referred to the clinic and discussed in detail.

- **CTEV Clinic**- Held once a week corrective casts are given and the technique learnt by the residents. Surgical management in also planned & recorded in case file.

- **Polio- Clinic-** Held once a week, various braces & Calipers are prescribed and surgical management planned.

- **Combined Round/Grand Round:** These exercises are to be done once or twice per week involving presentation of all inpatient cases. The work up and management plan should be discussed.

- **Post Emergency Day Round:** The resident should collect the overall data of all patients attending to the orthopedic emergency. He should collect relevant radiographs and clinical data of all patients admitted in emergency. Any important patient not admitted should also be included. All these data should be briefed (in necessary details) to the faculty in- charge.

- **Instruments, Orthosis, Prosthesis, walking Aids etc**.

- **Surgical Audit**

- **Preoperative planning for surgical cases to be operated**

- **Clinical teaching:** In OPD, ward rounds, emergency and the operation theatres: the resident should make discussion on clinical diagnosis/surgical procedures/treatment modalities with senior resident or faculty on duty. The resident should get well versed in preoperative planning, postoperative care and subsequent follow up, maintenance of case records and preparation of discharge slip and other necessary paper work. The resident should also interact with physiotherapist pertaining to management of patients.

- **Clinical interaction with physiotherapist:** Clinical interaction with physiotherapist pertaining to management of the patients in post-op mobilization.

- **Research methodology:** A course on research methodology, ethical issues in patient care, biostatistics, evidence-based medicine and language proficiency etc. are to be arranged by the institute.

III. SYLLABUS:

1. Basic Sciences:

- Development of skeleton & mineralization of bone
- Soft tissue anatomy, histology, physiology, injury and repair: meniscus, articular cartilage, muscle, tendon, ligament, nerve
- Bone: histology & histopathology of bone, physiology of fracture healing, delayed and non-union of bones, biophysical properties of bone, bone grafting, bone graft extenders and substitutes
- Biomechanics: gait, hip & knee arthroplasty, cerebral palsy
- Pathological tests for orthopedic disorders, tissue diagnosis, synovial fluid analysis, molecular diagnostic methods
- Imaging: application of USG, CT scan, MRI, nuclear medicine in Orthopaedics Ethics in Orthopaedics, evidence based practice, outcome assessment, use of biostatistics
- Clinical examination: hip, spine, knee, shoulder, elbow, wrist and hand, ankle and foot, deformity, neurological examination
- Orthoses for orthopaedic disorders
- Surgical approaches
- Electro diagnosis
- Biomaterials in orthopedics, Plaster of paris and metals
- Minimal access surgery, computer assisted surgery &Navigation
- Peripheral nerve injuries
- Electro diagnosis
- Vascular Injuries
- • Fluid Management & Nutrition in traum atized patient
- Bone Bank
- Wound Healing
- OT Descipline and Ethics

2. Infections:

- Pyogenic – osteomyelits- acute and chronic, septic arthritis, infection in presence of implant and prosthesis, Necrotizing fasciitis, Gas gangrene, Toxic shock syndrome, Septic Arthritis and its sequel
- Tuberculosis – spine, hip, knee and other sites, medical, non-operative and operative treatment, paraplegia care with care of bladder, late onset paraplegia;
- Syphilis, mycotic infections, salmonella & brucellaosteomyelitis,

3. Metabolic bone disorders:
    - Calcium, phosphate and vitamin Dmetabolism
    - Rickets, osteomalacia, renal bone disease, hyperparathyroidism
    - Scurvy
    - Osteoporosis
    - Osteopetrosis
    - Paget's disease
    - Various storage disorders

4. Musculoskeletal oncology:
    - Evaluation and staging
    - Benign and malignant bone and soft tissue tumors
    - Methods and principle of Biopsy
    - Principles of surgical treatment, options of limb salvage surgery
    - Chemotherapy and radiotherapy
    - Metastatic bone disease-diagnosis

5. Arthritis:
    - Osteoarthritis
    - Rheumatoidarthritis
    - Ankylosingspondylitis
    - Noninfectious Arthritis
    - Sero-negativespondyloarthropathy
    - Crystal arthropathy- gout andpseudogout
    - Neuropathicjoints
    - Traumaticarthritis
    - Others

6. Joint reconstruction:
    - Corrective Osteotomies around joints like hip, knee, shoulder, elbow etc.
    - Arthrodesis: shoulder, hip, knee, elbow, wrist, ankle, subtalar; indications and technique
    - Arthroplasty: Tribology, total hip, shoulder & knee replacement, basics of replacement of other joints, partial joint replacement, surface replacement, basics of complications and their treatment

7. Orthopedics Sports Medicine:

- Clinical Examination of
- Principles of arthroscopy
- Shoulder instability: acute, recurrent, surgical stabilization
- Rotator cuff tear
- Shoulder Impingement
- Lateral and medial epicondylitis, elbow injuries
- Ligament and meniscal injuries of knee, diagnosis and management of ACL and PCL deficient knee
- Multi ligamentous knee injury
- Clinical Examination of various knee, shoulder, ankle, elbow pathologies ofjoint
- Chondromalacia
- Management of osteochondraldefects
- Recurrent patellar dislocation
- Ankle ligament injuries
- Tendo achiles rupture, quadriceps tendon rupture, rupture of muscles
- Tendonitis, displacement of tendons
- Stress fracture

8. Pediatric Orthopaedics:

- Congenital and developmental disorders of knee, hip, upper limb, spine, ankle and foot.
- Connective tissue disorder: osteogenesis imperfecta, Marfan syndrome, Ehler Danlos syndrome etc.
- Genetic disorders: Neurofibromatosis, skeletaldysplasias
- Neuromuscular disorders: Myopathy, Cerebral palsy, myelomeningocele, post-polio residualdeformity
- Perthes' disease, slipped capital femoral epiphysis andosteochondritis
- Osteochondritis at varioussites
- Angular and rotational deformities of lower limb and deformity correction and LLD Correction
- Juvenile rheumatoid arthritis. Hemophilicarthropathy
- Obstretic palsy of brachial plexus
- Miscellaneous- Battered baby syndrome, Birth injuries, Obstetric palsyetc.

9. Nontraumatic disorders:

- Muscle contractures: quadriceps, deltoid, gluteusmaximus
- Snapping syndromes: hip, knee, scapula, shoulder
- Tendinitis and bursitis

- Synovitis and synovectomy
- A vascular necrosis of femoral head: etiopathology, diagnosis, management & hip sandwich technique procedure
- Transient osteoporosis of hip.
- protrusionacetabuli

10. Traumatology:

- Polytrauma and multiply injured patientcare
- Basic splint age and transportation techniques, ATLS
- Complications of fracture: especially compartment syndrome, fat mbolism, crush syndrome, neurovascular injury, myositis ossificans, reflex sympathetic dystrophy
- Principles of closed treatment of fractures
- Principles of fracture fixation – external and internal; implants, instruments and prosthesis, plating and nailing
- Open fracture management, common flaps in open tibia fractures
- Pathological fractures
- Amputations and prosthetics
- Fractures and dislocations in children: physical injuries, operative principles in children, fractures around elbow: supracondylar, medial and lateral condyle capitellum; pulled elbow, forearm and distal radius fractures, fracture of neck, shaft and distal femur, proximal and distal tibial physes
- Fractures in adults: scapulothoracic dissociation, fracture clavicle, fractures of proximal humerus, shaft and distal humerus, Monteggiaand
- Galleazi fractures, fractures of capitellum, coronoid, olecranon, radial head, forearm, distal radius, scaphoid, metacarpal and phalanges, fracture of neck, intertrochanteric, subtrochanteric, shaft and distal femur, fracture patella, fracture of tibial plateau, shaft and pilon.
- Pelvic, acetabular and sacral fractures
- Management of malunion (especially cubitus varus and valgus, neglected Monteggia injury, distal radius) and nonunion (especially infected nonunion)
- Management of acute dislocation and fracture dislocations: sternoclavicular and acromioclavicular joint, shoulder, elbow, terrible triad, radial head, perilunate, sacroiliac, hip, knee, floating knee injury, patella, ankle.
- Management of chronic unreduced and recurred dislocations: hip, shoulder, elbow, patels etc.
- Principle and practice of destruction steohistogenesis

11. Spine:

- Fractures and dislocations of spine, non-operative and operative treatment
- Various spinal instrumentations
- Management of Pott'sspine
- Paraplegia care, bladder rehabilitation
- Congenital anomalies of upper cervical spine, Kippel Feilsyndrome
- Scoliosis: infantile, juvenile, adolescent, neuromuscular
- Scheuermann disease
- Spondylolysis, spondylolisthesis
- Low back pain, prolapsed intervertebral disc
- Degenerative cervical and lumbar spine, lumbar canal stenosis
- Spine in ankylosing spondilitis and rheumatoid arthritis
- Tumors of the spine- primary and metastatic

12. Hand:

- Basics of microsurgery
- Flexor and extensor tendon injuries
- Fracture and dislocation in hand
- Diagnosis and management of peripheral nerve injuries
- Reconstruction of upper limb in nerve injuries: brachial plexus, radial, ulnar and median nerves
- Injuries of wrist: scaphoid fracture and nonunion, perilunarinstability
- Disorders of wrist: Keinbock's disease, DRUJ reconstruction, arthritic wrist
- Volkmann is chemiccontracture
- Carpal tunnel syndrome and other compression neuropathies
- Rheumatoid hand management
- Dupuytren's disease
- Tenosynovitis, DeQuervian disease, trigger finger
- Hand infections
- Tumor and tumor like conditions of hand
- Cogenital handanomalies

13. Foot and ankle:

- Fractures of calcaneus, talus, Lisfranc's and Copart's fracture dislocations, metatarsal fractures
- Management of sciatic and peroneal nerveinjury
- Flat foot, tarsalcoalition

- Hallux valgus aand other halluxdisorders
- Claw toe, hammer toe, mallet toe, bunion, bunionette
- Diabetic foot and other neuropathic foot disorders
- Pescavus
- Tarsal tunnel syndrome, Morton'smetatarsalgia
- Painful heal, plantarfascitis
- Ingrown toenail
- Tendonitis: tendo achiles, tibialis anterior and posterior

14. Rehabilitation:

- Orthosis, prosthesis and reconstruction Traction and Splintage

Biostatistics, Research Methodology and Clinical Epidemiology
Ethics
Medico legal aspects relevant to the discipline
Health Policy issues as may be applicable to the discipline

IV. COMPETENCIES:

1. Clinical Program:

During first six months of residency, the student is expected to:

- Attend a basic surgical skill laboratory and resuscitation course Basic and Advances (to be organized by the institution)
- Attend a course of research methodology and how to pursue a thesis (to be organized by the institution)
- Learn bedside history taking and clinical examination in ward and emergency; appropriate use of splints and traction, dressing of infected and surgical wounds etc.
- Learn proper record keeping- clinical examination notes, progress notes, neural charts, interdepartmental referral notes, drug prescription, consent form for various surgeries, tabulation of investigations, medico legal documentation, pre-operative preparation orders, post-operative notes in details, discharge slip preparation, resuscitation and death notes etc.
- Be present in ward rounds and grand rounds, also attend call from other departments with senior colleagues

- Learn and perform closed reduction of common fractures and dislocations under supervision, application of plaster slab and cast, and give necessary advice to patients managed on out-patient basis.
- Attend operation theatre, learn to scrub and assist in cases.
- Attend OPD, examine patients and put clinical notes and advise accordingly, under supervision of faculty.
- Be familiar with digital camera, computer and internet; to take clinical and surgical photographs and videos, to make audiovisual presentations, to search references on internet, to keep data and record in digital format and analyze data for research work.
- Participate regularly in academic activities in the department
- Start thesis work under allotted faculty member.

After 6 months till end of 3 years, the student is expected to:

- Attend OPD, operation theatre, ward rounds, emergency duties, specialty clinics as per departmental schedule
- Attend and / or present seminar, journal club, case conference / difficult case, death and complication meet, surgical – pathological – radiological conference regularly as allotted
- Get actively involved in diagnosis and treatment of patients in ward and emergency
- Assist or perform under supervision surgical work wherever necessary
- Attend/ participate / present scientific paper in national/zonal/state conferences
- Actively participate / help in organization of departmental courses and workshops
- Maintain log book properly and get it verified time to time
- Submit thesis progress report six monthly and complete thesis work in time

2. Practical Training:

A Junior Resident doctor, pursuing a DNB course is expected to perform major and minor surgical procedures independently as well as under supervision of a faculty member/senior resident.

- Student should be able to do many major procedures independently

    i. Closed reduction of fractures
    ii. External fixation of compound fractures
    iii. Debridement of crush injuries
    iv. Amputations
    v. Internal fixation of common simple fractures
    vi. Polio surgery such as TA lingthening, Steindler's procedure etc.
    vii. Intra-articular injections
    viii. Steroid injections for various painful conditions
    ix. Sequestrectomy in chronic osteomyelitis
    x. Corrective POP casts for club foot & other congenital deformities
    xi. Biopsy from amass

- Student should be able to do the complicated surgical procedure under supervision/guidance of senior colleague's/ faculty members

- Should be assisted

    i. Joint Replacement
    ii. Spinal Instrumentation
    iii. Arthroscopy
    iv. Limb salvage surgery

- Humanity/Ethics

- Lectures on humanity including personality development, team spirit and ethical issues in patient care and human relationship including, public relations, by Psychologist and public relation officers are to be arranged by the department/college.

- Should be trained to manage and handle mass casualties and natural disaster

V. LOG BOOK:

A candidate shall maintain a log book of operations (assisted / performed) during the training period, certified by the concerned post graduate teacher / Head of the department / senior consultant.

This log book shall be made available to the board of examiners for their perusal at the time of the final examination.

The log book should show evidence that the before mentioned subjects were covered (with dates and the name of teacher(s) The candidate will maintain the record of all academic activities undertaken by him/her in log book.

1. Personal profile of the candidate
2. Educational qualification/Professional data
3. Record of case histories
4. Procedures learnt
5. Record of case Demonstration/Presentations
6. Every candidate, at the time of practical examination, will be required to produce performance record (log book) containing details of the work done by him/her during the entire period of training as per requirements of the log book. It should be duly certified by the supervisor as work done by the candidate and countersigned by the administrative Head of the Institution.
7. In the absence of production of log book, the result will not be declared.

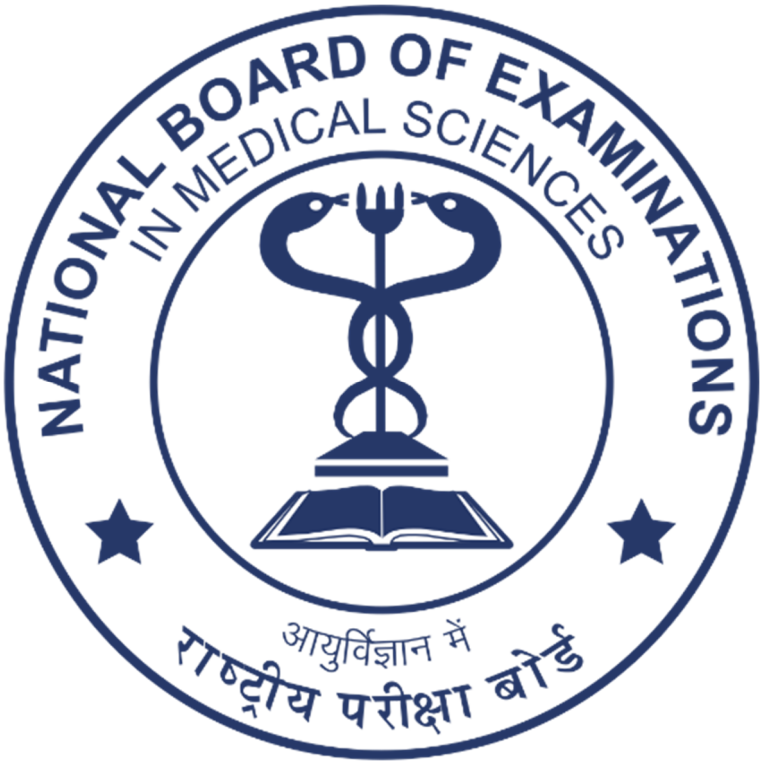
VI. RECOMMENDED TEXT BOOKS AND JOURNALS:

Title of the book	Author	Publisher
Apley's System of Orthopedics and Fracture	Apley	Butterworth Heinemenn
Turek's Orthopedics Principles and application		
Watson Jones-Fractures and Joint Injuries	J.N. Wilson	Churchill Livingstone
Fractures in Adults and Children Outlines of Fractures Livingstone	Rockwood and Green's Crawford Adams	Churchill

Closed Treatment of Fractures Livingstone	H.John Charnley	Churchill
Outlines of Orthopaedics Livingstone	Crawford Adams	Churchill
Mercer's Orthopaedics Surgery	Duthie	Edward Arnold
Fundamentals of Orthopaedic Surgery	Philip Wiles	Churchill Livingstone
Paediatric Orthopaedic And Fractures	Tachdjian	Mosby
Orthopaedic Diseases Tumours and Tumourous	Aegerter and Kirkpatrick	Saunders
Conditions of Bone and Joints	Jaffe	Lea Febiger
Campbell's Operative Orthopaedics	A H Crenshaw	C V Mosby
Evidence Based Orthopedics	Mohit Bhandari	
Tubercolosis of the Skeletal System	S M Tuli	
Surgical Handicraft	Pai	
Tractions and Splintage	Stewart	
Clinical Methods	S Das	
Hand book of Physical		Kottae
Medicine	Krusen	Ellwood
Rehabilitation Medicine	Howard & Rusk	
Electrodiagnosis	Sidney Licht	
Kinesiology	Rach & Bruke	
Basic & Advances Biostatistics	Manju Pandey	
Oxford Handbook of Medical Biostatistics		

JOURNALS

1. Indian Journal of Orthopaedics.
2. Journal of Bone and Joint Surgery (British & American Volumes).
3. Orthopaedic Clinics of North America.
4. Clinical Orthopedics and Related Research
5. Yearbook of Orthopaedics.
6. British journal of Rheumatology and Physical Medicine.
7. Journal of rehabilitation, Bombay.



आयुर्विज्ञान में राष्ट्रीय परीक्षा बोर्ड

स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार

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