

PHYSIOTHERAPY TECHNIQUES

PART-II

SPECIAL PHYSIOLOGY

- 1-6.A Physical principles of resting membrane potential in nerve & muscle, action potential and Physiology of nerve impulse Synaptic Transmission.
- 7-8 Sympathetic and parasympathetic system.
- 9-10 Sensory system various types of sensations, their pathways and brain centers.
- 11-12 Special senses.
Eye, ear, taste, olfaction.
- 15-16 Motor system pyramidal and Extrapyramidal.
- 17-20 Cerebellum RAS. Sleep, higher brain functions, EEG,
- 21-28 Functions of Hypothalamus.
Physiology skeletal muscle, smooth, cardiac muscle Neuromuscular Physiology. EMG, myo neural junctions.
- 29-32 Physiology of respiration, cardiovascular system, Endocrine GIT, urinary system, blood, immune system.
- 33-34 Physiology of bones and Ca^{++} metabolism.
- 35-36 Physiology of Exercise.
- 37-38 Metabolism. Diet & Nourishment especially in handicapped & paralysed individuals.
- 39-40 Electrolyte physiology, water & Electrolyte balance PH regulation.

Special Anatomy

41-44 Skeletal system

- (i) Classification and general features of bones & joints
- (ii) Bones of upper limb
- (iii) Bones of Lower limb
- (iv) Joints of upper & lower limbs, classification of joints and Bones.
■ Essential features of each type.

45-46 Kind of mov permitted in joint institution of movements structure of each joint chief relations.

47-50 Skull - general features, bone and position of bone.

- Vertebral column
- Sternum & Ribs.
- Foot
- Description of Carpus, metacarpus and phalangeal bones and their movements

51-56 Muscles: General anatomy of muscles, their classification and action. Nerve supply & actions of various limbs & body muscles including diagrams, their nerve supply with special emphasis on their group action as against antagonist, synergist. Mechanism and action of muscles acting on joints and movements they produce.

57-62 C.N.S. - General Orientation of CN.S.

- Brain & Spinal cord.
- Sympathetic & para sympathetic system.
- Cranial and peripheral nerves.

- Distribution of 5,7,10,11. Name, & functions only of the other nerves.
- 63-66 C.V.S. Heart – aorta, major arteries of limbs, head, neck, brain, abdomen & thorax
- Veins of body
- Lymphatic
- 67. Digestive System:
 - iii) Mouth
 - iv) Pharynx esophagus
 - v) Gastrointestinal tract
 - vi) Associated glands, salivary glands, liver, pancreas
- 68. Endocrines Pituitary thyroid & parathyroid suprarenal etc.

SURFACE ANATOMY

- a. Knowledge of various bony and soft land marks on body.
- b. Correlation of these marks with deep structures.
- c. Surface marking of various deep structures in body.
- d. Measurements in limbs –recognition of various parts in limbs, abdomen, thorax, head & neck.

Practical

1. Excretory System / Uro-genital

To demonstrate the Kidney, urinary Bladder gonads, Urethra, genital system and reproductive system

2. Demonstration of all the above systems on

- i. Charts
- ii. Equipments
- iii. Slides / Projectors
- iv. Dummy's
- v. Skeleton 1. Individual bones 2. Whole

KINESIOLOGY

1. **CLASSIFICATION OF PASSIVE MOVEMENTS.**
 - Relaxed Passive Movements.
 - Forced Passive Movements.
 - Its technique and effects.
2. **CLASSIFICATION OF ACTIVE MOVEMENTS.**
 - Assisted active movement its technique and effect.
 - Resisted movement its technique and effect.
 - Free active movements technique and effect.
3. **BREATHING EXERCISES:**
 - Its effect and technique.
4. **Posture Drainage and control:**
 - Maintenance of correct posture.
5. **SUSPENSION THERAPY:**
 - Introduction to suspension therapy. Simple methods of suspension.
 - Effects and uses.
6. **Pulley Circuits:**
 - Introduction to pulley and weight circuits.
 - Effects and uses of pulley circuits.
7. **DIFFERENT POSTURES:** Effects, uses and Muscle work;
 - Standing.
 - Kneeling.
 - Sitting.
 - Lying.
 - Hanging.
 - Pelvic Tilt.
8. **RELAXATION:**
 - Definition, Methods of promoting relaxation, effects and uses.
9. **P. N. F. TECHNIQUES**
 - Basic technique, its effects and uses.
10. **Re education of walking / Gait Training**
 - Without aids.
 - With Crutches
 - Wheel Chair
 - Stick and Braces.

PHYSIOTHERAPY TREATMENT AND TECHNIQUE NERVOUS SYSTEM

- Classification of Nervous Diseases.
- Upper Motor Neurone Diseases.
 - Hemiplegia
 - Cerebral Palsy.
- Lower Motor neurone Diseases:
 - Acute Aneroid Poliomyelitis.
 - Progressive Muscular Atrophy.

- Chorea and Parkinsonism.
 - Peripheral nerve Injuries.
 - Facial Paralysis.
2. **DISEASES OF MUSCLES.**
 - The Dystrophies.
 - Myasthenia Gravis.
 3. **DISEASES OF JOINTS.**
 - Osteoarthritis.
 - Ankylosing Spondylitis.
 - Rheumatoid Arthritis.
 - Septic Arthritis
 - Gout
 4. **DISEASES OF RESPIRATORY TRACT.**
 - Bronchitis
 - Bronchi - actasis.
 - Pneumonia - Lobar.
 - Bronchial
 - Tuberculosis.
 - Asthma.
 - Pleurisy.
 - Pl. effusion
 5. **FRACTURES.**
 - Types, sites and its physiotherapy management.
 6. **DEFORMITIES:**
 - Acquired and congenital, General Principles of physiotherapy treatment.
 7. **GENERAL PRE OPERATIVE AND POST OPERATIVE CARE OF PATIENTS IN PHYSIOTHERAPY.**
 - Lobotomy
 - Pneumonectomy.
 - DVT (Deep Vein Therapy)
 - Implanted Patients (Total Hip Joint Replacement)
 8. **PHYSIOTHERAPY IN CHEST SURGERY**
 - Lobectomy - Pneumonectomy
 9. **PHYSIOTHERAPY IN TRAUMATIC CONDITIONS**
 - Joint Sprains.
 - Synovitis.
 - Bursitis.
 - Tendinitis.
 10. **INTRODUCTION TO HYDROTHERAPY, OUTLINE OF METHODS. USED, TECHNIQUES, TYPES OF BATHS EFFECTS AND USES.**
 11. **Introduction to paraffin baths, its application, effects and uses.**
- MANUAL THERAPY:-**
 Post operative physiotherapy.
 Chest physiotherapy
 Physiotherapy in orthopedics.

Complications in manual therapy.

Physiotherapy in peripheral nerve therapy.

Physiotherapy for hemiplegic patient.

Mobilization and gait training.

Physiotherapy for paraplegic patients, exercises, bed positioning, complication, loss of sensations and management.

Wax therapy

Uses of wax therapy

Combination, diagram of the tub, and contraindication.

Temperature setting and preparation of the patient.

Alternative of wax therapy.

MECHANICAL SYSTEMS IN PHYSIOTHERAPY:-

Study the diagram of pulley and rope system.

Study and uses of Captain wheel.

User of ladders in gymnasium.

Study with diagrams required in various exercises.

Study with diagram of quadriceps drill, its uses and types of exercises.

EXERCISE THERAPY:-

1. Study of design, apparatus, equipment for passive and active exercise therapy.
2. Usage of manual exercise therapy.
3. Indications or conditions for use.
4. To study the role of exercises in hemiplegia and paraplegia.
5. Conditions for use of massage.
6. Contraindications of massage.

CHEST PHYSIOTHERAPY

1. To study Conditions, effects and diagram showing trachea, bronchi and lungs.
2. To study the effects of physiotherapy regarding expectoration and oxygenation.
3. Applications in post-operative thoracotomy.
4. Uses of chest therapy in ICU & CCU.

TRACTION APPARATUS

1. Uses of traction apparatus.
2. Study of manual traction.
3. Advantages and disadvantages
4. Study of mechanical traction.
5. Diagram for manual cervical traction.
6. Design mechanical traction apparatus.
7. Electrical apparatus diagram.
8. Pre and post therapy precautions.
9. Time and duration the treatment required.

MYOLOGY

- demonstration of muscles (different groups with their function)
- Demonstration of ligaments
- Exercises – Physiotherapy of Sensory organs especially skin, briefly other organs, to demonstrate on flip charts or projectors.
- Surface Marking (surface anatomy / General anatomy)