

## **Anatomy and Physiology by Central Council of Homeopathy India**

### Study of Normal Man in Pre-Clinical Period

Human economy is the most difficult of all sciences to study. Man is a conscious mentalised, living being and functions as a whole. Human knowledge has become so vast that for precise comprehension of man, as a whole development of different branches of science like anatomy, physiology and psychology was necessary. But such a division is only an expedient; man nevertheless remains indivisible.

Consciousness, life and its phenomena cannot be explained in terms of cell physiology or of quantum mechanics nor by physiological concepts which in their turn are based on chemico - physical concepts.

Though anatomy and physiology are hitherto being taught as entirely different subjects, a water-tight barrier should not be erected between them; structure (anatomy) and function (physiology) are but correlated aspects and the physio-chemical processes are but an external expression of an inexplicable phenomenon which is life.

### **So anatomy and physiology shall be taught with the following aims:**

(i) to provide for the understanding of the morphological, physiological and psychological principles which determine and influence the organism of the living body as a functioning unit;

(ii) to co-relate and interpret the structural organism and normal physiology of the human body and thus to provide the data on which to anticipate disturbance of functions;

(iii) to enable the student to recognise the anatomical, physiological and psychological basis of the clinical signs and symptoms of disorders due to injury, disease and maldevelopment;

(iv) Similarly, to give the student to understand the factors involved in the development of pathological processes and the possible complications which may arise there from;

(v) to give the student such knowledge of pre clinical subjects as will enable him ultimately to employ competently and rationally all the ordinary methods of examination and treatment (including surgery) that may involve such knowledge; and

(vi) for enabling the student to pick out strange, rare and uncommon symptoms for individualization of patients and drugs for the purpose of applying the law of similar in homeopathic practice.

## **ANATOMY**

Instructions in anatomy should be so planned as to present a general working knowledge of the structure of the human body. The amount of detail which he is required to memorise should be reduced to the minimum. Major emphasis should be laid on functional anatomy of the living subject rather than on the static structures of the cadaver, and on general anatomical positions and broad relations of the viscera, muscles, blood-vessels, nerves and lymphatics. Study of the cadaver is only a means to this end. Students should not be burdened with minute anatomical details which have no clinical significance.

Though dissection of the entire body is essential for the preparation of the student of his clinical studies, the burden of dissection can be reduced and much saving of time can be effected, if considerable reduction of the amount of topographical details is made and the following points:-

1. Only such details as have professional or general educational value for medical student should be presented to him.
2. The purpose of dissection is not to create technically expert prosecutors but to give the student an understanding of the body in relation to its functional, and the dissection should be designed to achieve this end, for example, ignoring of small and clinically unimportant blood vessels results in such cleaner dissection and a much clearer picture of the main structure and their natural relationships.
3. Much that is at present taught by dissection could be demonstrated as usefully through prepared dissected specimens.
4. Normal radiological anatomy may also form part of practical training. The structure of the body should be presented linking functional aspect.
5. Actual dissection should be preceded by a course of lectures on the general structure of the organ or the system under discussion and then its function. In this way anatomical and physiological knowledge can be presented to students in an integrated form and the instruction of the whole course of anatomy and physiology and more interesting, lively and practical.
6. A good part of the theoretical lectures on anatomy can be transferred to tutorial classes with the demonstrations.

**A few lectures or demonstrations on the clinical and applied anatomy** should be arranged in the later part of the course. They should preferably be given by a clinician and should aim at demonstrating the anatomical basis of physical signs and the value of anatomical knowledge to the clinician.

Seminars and group discussions to be arranged periodically with a view of presenting different subjects in an integrated manner.

Formal class room lectures to be reduced but demonstrations and tutorials to be increased.

There should be joint teaching-cum-demonstration sessions with clinical materials illustrating applied aspect of Anatomy in relation to clinical subjects. This should be arranged once a fortnight and even form part of series of introductory lectures if be needed.

There should be **joint seminars with the departments of Physiology and Bio-Chemistry** and should be organised once a month. There should be a close correlation in the teaching of gross Anatomy, Histology, Embryology and Genetics. The teaching of areas and systems in Anatomy, Physiology including Bio-chemistry should be integrated as far as possible.

### **Theoretical**

A complete course of human anatomy with general working knowledge of different anatomical parts of the body. Emphasis should be laid down on the general anatomical positions and broad relations of the viscera, muscles, blood vessels, nerves and lymphatics. Candidates should not be burdened with minute anatomical details of every description which has no clinical significance.

Candidates will be required to recognized anatomical specimen and to identify and answer questions on structures displayed in recent dissections, to be familiar with the bones and their articulations including the vertebrae, the skull and with the manner of classification of the long bones.

Emphasis will not be laid on minute details except in so far as is necessary to the understanding of or in their application to medicine and surgery. Candidates are expected to know the attachments of muscles

sufficiently to understand their actions, but not the precise-details of the origin and insertion of every muscles. A knowledge of the minor details of the bones of the hand, foot, their articulations and details of the small bones of the skull will not be required.

The curriculum of anatomy should be divided under the following headings:-

(I) Gross Anatomy-to be dealt under the following categories:-

(a) Introductory lectures with demonstrations.

(b) Systematic series.

The study to be covered by deductive lectures, lecture, demonstration surface and radiological anatomy, by dissection of the cadaver and study of dissected specimen. Knowledge thus obtained together with correlation of facts should be integrated into living anatomy. Details of topographical relation should be stressed for these parts which are of importance in general practice.

(i) Superior extremity, inferior extremity, head, neck, thorax, abdomen and pelvis to be studied regionally and system by system (special reference to be made to development and its anomalies, regional, innervation, functional groups of muscles in relation to joint of otherwise and Applied Anatomy).

(ii) Endocrine organs-with special reference to development and applied anatomy.

(II) Development anatomy-General principles of development and growth and the effect of hereditary and environment factors to be given by lectures, charts, models and slides.

(III) Neuro-anatomy, Gross Anatomy of brain and spinal cord and the main nerve tracts. The peripheral nerves. Cranial nerves their relations course and distributions.

Autonomic nervous system-Development and anomalies, Applied Anatomy. The study to be covered by lectures, lecture-demonstrations, of brain and cord, clinical correlation.

N.B. : The practical study should proceed the study of physiology nervous system. Early correlation with the clinical course desirable.

(IV) Micro-anatomy (Histology)-Modern conceptions of cell, epithelial tissue, connective tissue, muscular tissue, nervous tissue and systematic structure.

(A) Introductory Lectures

(a) Modern conception of cell-components and their functions, why a cell divides, cell division, types with their significance.

(b) Genetic Individuality : (I) Elementary genetics definition, health and disease, result of interaction between organism and its environments, utility of knowledge from Homoeopathic point of view

(ii) Mendel's Laws and their significances

(iii) Applied genetics.

(B) Embryology.

(C) General anatomy & micro-anatomy

(D) Regional anatomy - Regional Anatomy shall be taught with emphasis on developmental anatomy, broad relationship, surface marking, Radiological anatomy, and applied anatomy.

(a) Extremities:-

(i) Skeleton, position and functions of joints,

(ii) Muscle groups, lumbar plexus,

(iii) Arterial supply, venous drainage, neurovascular bundles, lymphatics and lymph nodes, relation of nerves to bones.

(iv) Joints with special emphasis on lumbo - sacral, hip, knee and ankle joints, muscles producing movement, results of nerve injury.

(v) Radiology of bones and joints, classification, determination of age.

(vi) Applied anatomy

(vii) Surface marking of main arteries, nerves.

(b) Thorax :-

(i) Skeleton of joints of muscles of chest wall-diaphragm, innervation of abdominal and thoracic respiration, difference with age. The mammary gland lymphatic drainage.

(ii) The pleura & lungs.

(iii) Arrangements structures in the mediastinum, heart, coronary arteries, great vessels, trachea, oesophagus, lymph nodes, thymus.

(iv) Radiology, of heart, aorta, lung, bronchogram.

(v) Surface marking - pleura, lung, heart - valves of heart, border, arch of aorta, superior vena cava, bifurcation of trachea.

(c) Abdomen And Pelvis :-

(i) The abdominal wall-skin and muscles, innervation of fascia, peritoneum, blood vessels, lymphatics, autonomic, ganglia and plexuses.

(ii) Stomach, small intestine, caecum, appendix, large intestine.

(iii) Duodenum, pancreas, kidneys, uterus, supra renals.

(iv) Liver and gall bladder

(v) Pelvis, skeleton and joints, muscles of the pelvis, organs internal and external genitalia in male and in the female, lumbosacral plexus, vessels, lymphatics, autonomic ganglia, and plexuses.

(vi) Blood vessels and nerve plexuses of abdomen and pelvis, the portal venous system.

(vii) Applied anatomy of referred pain, portal systemic anastomosis, catheterization of the urinary bladder in the male and female.

(viii) Surface marking of organs and blood vessels.

(d) Head and Neck :-

(i) Scalp - Innervation, vascular supply middle meningeal artery.

(ii) Face-main muscles groups, muscles of facial expression muscles of mastication, innervation of skin and repair muscles, vascular supply, principles of repair scalp and face wrinkles.

(iii) The eyelids, eyeball, lacrimal apparatus, the muscles that move the eyeball.

(iv) The nasal cavity and nasopharynx, septum, conchae, paranasal sinuses, Eustachian tube lymphoid masses.

(v) Oral cavity and pharynx.

(vi) Larynx and laryngeal part of Pharynx structure (No details) functions, nerves supply, laryngoscopic appearances.

(vii) Cervical vertebrae, joints of head and neck.

(viii) Structures of neck, sternomastoid, brachial plexus, main arteries and veins, disposition of lymph nodes, areas of drainage, phrenic nerve, thyroid gland and its blood supply, para-thyroid, the trachea, oesophagus. The position of the Sub-mandibular and sublingual salivary glands.

(ix) Teeth and dentition.

(x) The external middle and internal ear.

(xi) Applied anatomy

(xii) Surface marking: Parotid gland, middle meningeal artery, thyroid gland, common internal and external carotid arteries.

(e) Neuro anatomy :-

(i) Meanings-functions of

(ii) Cerebrum-areas of localisation, vascular supply basal ganglion, internal capsule.

(iii) Cerebellum-functions.

(iv) Pons, medulla midbrain, cranial nerves, palsies.

(v) Cerebro-spinal fluid-formation, circulation function, absorption.

(vi) Cranial nerves, origin, courses (with minimum anatomical detail) areas of distribution.

(vii) The sympathetic and parasympathetic nervous system location, distribution, function.

(viii) Applied anatomy of lumbar puncture, referred pain, spinal anesthesia increased intracranial pressure.

(B) Histological study systematic

### **Practical**

Demonstration of dissected parts/Dissection of the whole human body.

Identification of histological specimen of tissues and organs viz., liver, kidney, lungs, thyroid, pancreas, spleen, trachea, oesophagus, stomach, tongue intestine, large intestine, testes, every bone, adipose tissue, spinal cord, suprarenal glad, parotid gland, anterior pituitary salivary glands, skin, parathyroid gland, cerebellum, cerebral cortex, cardiac muscle.

**The written papers in Anatomy** shall be distributed as follows:-

Paper I - Upper extremity, head, face, neck, brain and Embryology.

Paper II - Thorax, abdomen, pelvis and lower extremity and Histology.