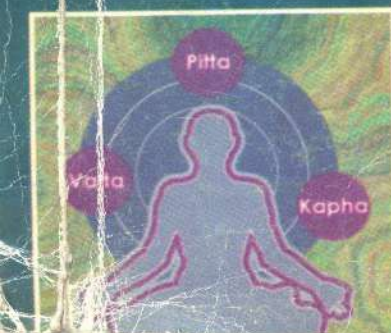
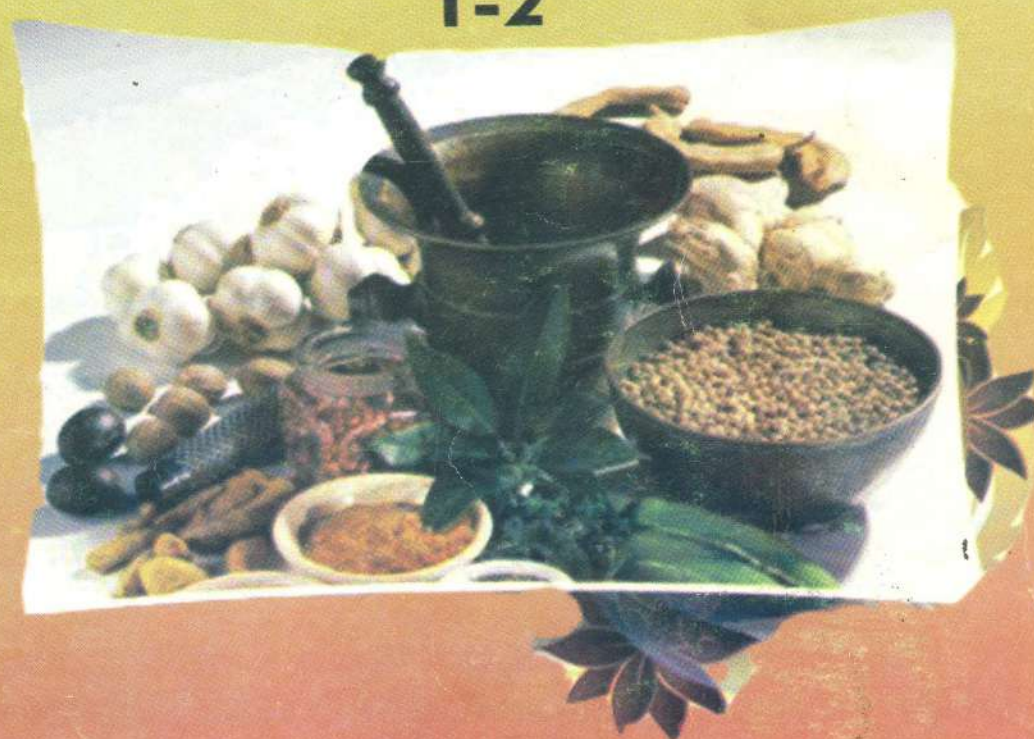


Certificate Course in

AYURVEDIC THERAPY

(For Panch Karma Technicians)
1-2



विद्यया ऽमृतं प्राप्यते

NATIONAL INSTITUTE OF OPEN SCHOOLING

Certificate Course in Ayurvedic Therapy

1

Introduction to Fundamentals of Ayurveda

(Course Code – 721)

Course Coordinator

Dr. Pawan Kumar Chauhan

Executive Officer (HPM)



विद्यया नमः सर्वधनं प्रधानम्

NATIONAL INSTITUTE OF OPEN SCHOOLING

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Certificate Course in Ayurvedic Therapy

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FROM THE DESK OF CHAIRMAN ...

Dear Learner,

Welcome to the National Institute of Open Schooling!

By enrolling with this institution, you have become a part of the family of the world's largest Open Schooling System. As a learner of the National Institute of Open Schooling's (NIOS) Vocational Programme, I am confident that you will enjoy studying and will benefit from this very unique School and method of training.

Before you begin reading your lessons and start your training, there are few words of advice that I would like to share with you. We, at the NIOS, are well aware that you are different from other learners. We realize that there are many of you who may have rich life experiences; you may have prior knowledge about trades and crafts that are a part of your family's legacy; you may have a sharp business sense that will make you fine entrepreneur one day. Most importantly, you have that drive and motivation that has made you enroll with this institution, which believes in the spirit of freedom. Yes, we are aware that you have many positive aspects to your personality, which we respect and relate to them.

During the course of your study, NIOS will treat you as the manager of your own learning. This is why your course material has been developed keeping in mind the fact that there is no teacher to teach you. You are your own teacher. Of course, if you have a problem, we have provided for a teacher at your Accredited Vocational Institution (AVI). I would advise you that you should always be in touch with your AVI for collection of study material, examination schedules etc. You should also always attend the Personal Contact Programmes and practical / Training sessions held at your study centres. These will give you the necessary hands on training that is very essential to master a vocational course.

Studying for a vocational course is different from any other academic course. Here, while the marks obtained in the examination will indicate your grasp on your subject knowledge, your real achievement will be when you are able to apply your vocational skills in the market. I hope that this skill-based learning will help you perform your tasks better. A Certificate Course in Ayurvedic Therapy is being introduced by NIOS. This Programme would develop the multi competences & skills to provide the different Ayurvedic therapies like Panchakarma, massage, marma etc. and prepare the 'Trained, Qualified Ayurvedic Technicians for Ayurvedic Hospitals, Panchakarma Units and Ayurvedic Colleges. We hope that you will find it useful.

On behalf of NIOS, I wish you the very best for a bright and successful future.

S S Jena
Chairman, National Institute of Open Schooling

FROM THE DESK OF DIRECTOR ...

Dear Learner,

In the fast expanding world of work, learning new skills has become a necessity. Learning and re-learning has become essential for all. In such an environment, vocational education has assumed great importance. Vocational education, as a stream of education promotes skill development, and training of youth and directs them towards meaningful employment.

In keeping with the needs of the Learners, NIOS conducts Vocational Education Programmes through distance mode, in many areas. These include Agriculture, Home Science, Engineering & Technology, Computer Science, Health & Paramedical. The Courses offered in these areas are aimed at providing self & wage employment opportunities for NIOS learners.

NIOS has now developed a course in the area of Health & Paramedical namely Certificate Course in Ayurvedic Therapy. This course is being offered through open learning mode of education.

The prime objective of this programme is particularly to give learners self-confidence and a new path to their future. Certificate Course in Ayurvedic Therapy, comprising of theory & practical component, is intended to prepare 'Trained, Qualified Ayurvedic Technicians'. This course will provide quality of the education and training at reasonable cost in the institutions having qualified teachers and other infrastructure facilities. It will also meet the needs of the employed Ayurvedic technicians for formal training through distance learning.

We are confident that this course will prove to be beneficial to you.

We wish you all the best in your future career.

Dr K P Wasnik

Director (VE), National Institute of Open Schooling

A WORD WITH YOU...

Dear Learner,

Welcome to the Open Vocational Education Programme: Ayurvedic Therapy"

Ayurveda is an age old Indian system of medicine. There are many Government and private colleges for undergraduate programmes in Ayurveda, but there are no institutions imparting paramedical knowledge in this field. This has resulted in unqualified persons being engaged in hospitals, dispensaries and clinics in the country. There is thus a considerable demand for qualified Ayurvedic technicians from Ayurvedic Pharmacies, Herb Collection Centres, Ayurvedic Hospitals, Panchakarma Units and numerous individual vaidyas.

In view of a considerable demand of the Ayurvedic technicians, a 'Vocational Certificate Training Programme: Ayurvedic Therapy' is being introduced by NIOS which will strongly support to the Ayurvedic field and prepare the skilled Paraprofessionals. The Self - Instructional Material of this Programme, comprising of theory & practical consists of two Modules:

- 1. Fundamentals of Ayurveda &*
- 2. Introduction to Different Therapies in Ayurveda*

The knowledge and the skills gained through this course will equip the learners with the advance training in Ayurvedic Technologies. This Course will develop the ability to assist in making Ayurvedic medicines and dispensing drugs. This Programme would develop the multi competences & skills in the learner, to provide the different Ayurvedic therapies like Panchakarma, massage, marma etc.

Learners friendly approach has been adopted throughout the Self - Instructional Material. Each lesson is written in very simple and chronological order. The in text questions are included in the text matter to analyze the learner's understanding of the lesson. The suggested activities are provided that to beyond classroom.

We hope that this programme will help you to carve a niche in your career and play an important role in your career.

With best compliments

Dr. Pawan Kr. Chauhan
Executive Officer (HPM)
National Institute of Open Schooling

Certificate Course in Ayurvedic Therapy

1

Introduction to Fundamentals of Ayurveda

CONTENT

Sl. No.	Name of the Lesson	Page No.
1.	Introduction to Ayurveda	03
2.	Fundamental Principles of Ayurveda with applied aspects	11
3.	Health & Hygiene Including Preventive Measures	31
4.	Embroylogy (Garbhavyakarana)	39
5.	Prakriti (Natural Constitution)	49
6.	Body Sub Parts (Pratyanga)	55
7.	Musculo-Skeleta System Asthi (bones), Sandhi (joints), Snayu, (ligaments), Pesi (muscle)	62
8.	Marma Vigyan	72
9.	Causes of disease	85
10.	Disease process and types of pathogenesis	98
11.	Examination of Patient and Diseases	104

CERTIFICATE COURSE IN AYURVEDIC THERAPY

Course Curriculum

Course Title : Ayurvedic Therapy

Level of the Course: CERTIFICATE

Introduction of the Course/Programme

Ayurveda is an age old Indian system of medicine. There are many Government and private colleges for undergraduate programmes in Ayurveda, but there are no institutions imparting paramedical knowledge in this field. This has resulted in unqualified persons being engaged in hospitals, dispensaries and clinics in the country. There is thus a considerable demand from Ayurvedic Pharmacies, Herb Collection Centres, Ayurvedic Hospitals, Panchakarma Units and numerous individual vaidyas.

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Objectives of the Course & Scope

Certificate Course in Ayurvedic Therapy, comprising of theory & practical component, is intended to prepare 'Trained Qualified Ayurveda Technicians'.

This course will provide the quality of education and training at reasonable cost in the Training Centres, having qualified teachers and other infrastructure facilities. It will also meet the needs of the employed Ayurvedic technicians for formal training through distance learning. The knowledge and the skill gained through this course will equip the learners with the advance training in ayurvedic technologies. The main aim of this is to train the 'Ayurvedic Technicians' to fulfill the requirement in various sectors of Ayurveda.

It is also expected that the Vocational Training of this Programme would develop the multi competences & skills in the learner, to provide the different Ayurvedic therapies like Panchakarma, massage, marma etc.

Eligibility Criteria

The admission for Ayurvedic Therapy is open to those who fulfill the following Criteria:-

- 12th class pass from any Board of School Education with Science subjects
- or
- 10th Class pass from any Board of School Education with Science subjects for those candidates who are engaged in this field.
- Minimum age 18 years or above

Target Group

- Persons already employed as technicians, but not qualified, in Ayurvedic techniques
- Young persons seeking a vocation in this field after completion of Sr. secondary level
- Students intending to pursue undergraduate studies in Ayurvedic colleges

Job Opportunities

The main aim of this is to train the 'Ayurvedic Technicians' to fulfill the requirement in various sectors of Ayurveda. After passing this course, the trainees will have job opportunities as a 'Ayurvedic Technicians' or equivalent in the Ayurvedic Pharmacies, Herb Collection Centres, Ayurvedic Hospitals, Panchakarma Units and numerous individual vaidyas.

Duration of the Course: One Year

The duration of the course is one year. However, one can complete the course within five years of registration by appearing in any external examination as per rules of NIOS in force from time to time. The AVIs will be responsible for the imparting of training, skills and competencies of a qualitative standard by adopting suitable training methods, strategies & systems.

Attachment of Trainees: Minimum 06 months attachment of trainee for internship.

Scheme of Study:

Paper	Theory	Practical Training	Total Essential Contact Hrs.
Essential Contact Hrs.	120 Hrs.	180 Hrs.	300 Hrs.

Curriculum & Course

The course curriculum comprises of two modules having both theory & practical components. The theory courses given below are provided in the form of self-study print material. The practical component/training shall be provided to each student at the study centres(AVI's).

Subjects/Papers - 1	Subjects/Papers - 2
Module – 1 Introduction to Fundamentals of Ayurveda (Code - 721) ● Section I: Introduction to Ayurveda ● Section II: Anatomy & Physiology (Sarira Rachana & Sarira Kriya) ● Section III: Fundamentals of Pathology and Diagnosis	Module – 2 Introduction to Different Therapies (Ayurveda) (Code - 722) ● Introduction to different therapies in Ayurveda ● Panchakarma – principles and applied aspects, preparations used for panchakarma ● Family welfare through Ayurveda ● Marma

Medium of Instruction

The medium of instruction is English and Hindi.

Instructional System

- Self instructional printed material
- Audio and visual support system
- Assignments
- Face to face counselling at AVIs/Study centres
- Practical/Training facilities at AVIs/Study centers
- On the job training wherever applicable/required.

Scheme for Evaluation Certification

There will be evaluation of both components, theory as well as the practical separately. Internal assessment will also be taken into account while computing final result. The scheme of Assessment, Evaluation and certification will be administrated through the guidelines designed by NIOS. NIOS will award the final certificate according to its rules and regulations.

Scheme:

S. No	Subject/ Paper	Theory		Practical / Training		Assignment Marks	Total
		M. Marks	Hrs	M. Marks	Hrs	M. Marks	
01.	Module – 1 Introduction to Fundamentals of Ayurveda (721)	80	3	100	3	20	200
02.	Module – 2 Introduction to Different Therapies in Ayurveda (722)	80	3	100	3	20	200
	Grand Total						400

Passing Marks:A candidate should secure 40% marks in theory and 50% marks in Practical Training including assignment for successfully passing.

Course Fee

A student will pay Rs. 10,000/- for the full course and will receive a set of printed material. In addition, the examination fee will be paid separately as per the NIOS rules.

Admission Procedure

Admission is done once a year as per the dates notified by the NIOS. Application forms and Prospectus can be procured from either the NIOS or its Study Centres (AVIs)

Modalities for Offering the Course

The institute having the following infrastructure may apply for accreditation:

(A) Basic Infrastructure

1. **Class Room:** Classroom to accommodate for 25 students (minimum area 225 Sq. ft.) should have a black board/white board, adequate furniture, exhaust and ceiling fans etc. with proper ventilation & adequate lighting.
2. **OPD Facility:** The institution should have an OPD (Doctor's Chamber, dispensing & Therapy Chambers)
3. **Therapy & Instruments Chambers:** Separate Therapy Chambers for male & Female should have washable non-slippery floor, Patient's tables (7 ft X 3 ft X 2 ft), exhaust & ceiling fans etc. with proper ventilation & adequate lighting. The Therapy Chambers may have also the Box for swedana, Nadisweda yantra, Shirodhara yantra, Medicated Ayurvedic oils i.e. Dashamoola kwath, Dashamoola Tel, Mahanarayan and

Panchaguna etc. or separate room may also be used for the instruments.

4. **Library:** Library should have a minimum 10 books/articles/magazines etc. related subject.

(B) Faculty & Supporting Staff

S. No.	Faculty & Supporting Staff	Educational/Professional Qualification	No.
1.	Coordinator	Graduate	01
2.	Instructor (BAMS Doctor)	BAMS	01
3.	Technical Asstt.	Certificate/Diploma in Ayurvedic Therapy/Panchakarma OR 12 th class passed & minimum 02 years experience in Ayurvedic Therapy/Panchakarma	02
4.	Receptionist cum clerk	Relevant to job	01

Batch size – Maximum 25 students in one batch.

For application form for accreditation and details please contact:

The Director (Vocational)

National Institute of Open Schooling

A – 24/25, Sector – 62, Institutional Area

Noida (Uttar Pradesh)

Phone 0120 – 4089818 Fax – 4089819

Our website: www.nios.ac.in or www.nios.org



Notes

1

INTRODUCTION TO AYURVEDA

Ayurveda is the oldest medical system of the world which deals with the science of life. Ayurveda is comprised of two words, *Ayus* and *Veda*, meaning knowledge of life span. Body (*sarira*), sense organs (*indriya*), mind/psyche (*satva*) and soul (*atman*) are collectively known as *Ayu* (life span). *In this lesson you will know about the Ayurvedic science, history of Ayurveda. You will also relate Ayurveda to present time with merits on other system of medicine.*



Objectives

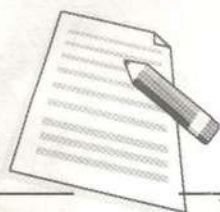
After studying this lesson, you will be able to

- Understand the history of Ayurveda;
- Define Ayurvedic science;
- Define and understand to Ayurveda (*Astanga Ayurveda*);
- Relate Ayurveda to present time with merits on other system of medicine.

1.1 History of Ayurveda

Being the oldest medical system, it cannot be bounded in the time-frame. According to the *Ayurvedic* concept Brahma was the first orator of *Ayurveda*. The knowledge of Ayurveda was transmitted from Brahma to Dakshprajapati, from Prajapati to Ashwani Kumaras and from Ashwani Kumaras to Indra.

Section One



Notes

Transmission of Ayurveda

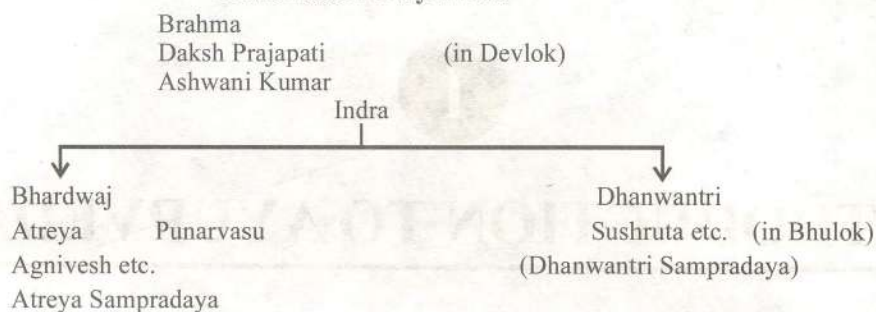
Scholars of *Punarvasu Atreya*

Fig. 1.1

Agnivesa, *Bhela*, *Jatukarna*, *Parasara*, *Harita* and *Ksarpani*, are the scholars of *Atreya*. The precepts and practices formulated by *Atreya* came to be known as *Atreya-sampradaya* (School of Medicine). *Agnivesa*, the most brilliant has documented the precepts of his teacher in *Agnivesa-tantra*. Afterwards it was refined and enlarged by Charaka and it is known as *Charaka samhita*.

Scholars of *Dhanwantri (Divodasa)*

Aupadhenava, *Vaitarana*, *Aurabhara*, *Pauskalavata*, *Karaviryā*, *Gopuraraksita*, *Sushruta* and others are the scholars. The precepts and practices propounded *Divodasa Dhanvantari* came to be

known as *Dhanvantari – sampradaya* (School of surgery). The most brilliant *Sushruta* has compiled *Sushruta samhita*.

1.2 Some important text of Ayurveda

There are many books of Ayurveda like *Charak samhita*, *Kashyap samhita*, *Harita samhita*, *Sushruta samhita*, *Astang hridaya*, *Astang*

Sangrah, etc. Among the books of Ayurveda some samhitas are most important and are followed by all the Ayurvedic professionals. These important samhitas are divided into two groups:

- (i) *Vrhatrayee* (bigger triad)
- (ii) *Laghutrayee* (small triad).

Each triad has three samhitas.

Vrhat trayi

<i>Samhita</i>	<i>Author</i>
<i>Charak samhita</i> (Text book of Medicine)	<i>Charak</i>
<i>Sushruta samhita</i> (Text book of Surgery)	<i>Sushruta</i>
<i>Astang hridaya</i> (quoted both Charak and Sushruta)	<i>Vagabhata</i>

Laghutrayi

<i>Samhita</i>	<i>Author</i>
<i>Madhavanidan</i>	<i>Madhavkar</i>
<i>Bhavprakash</i>	<i>Bhavprakash</i>
<i>Sarangdhar Samhita</i>	<i>Sarangdhar</i>



Intext Questions 1.1

1. Fill in the blanks:

- (i) Ayurveda is the *upaveda* of _____.
- (ii) *Astanghridaya* is compiled by _____.
- (iii) *Sushruta Samhita* is the book of _____.
- (iv) *Samhitas* in *laghutrayi* are _____.

1.3 Definition of Ayurvedic science

As has been already told that Ayurveda is comprised of two words: One Ayus and other Veda, means knowledge of life span



Notes



Ayurveda

Body (*sarira*), sense organs (*indriya*), mind/psyche (*satva*) and soul (*atman*) are collectively known as *Ayu* (life span) and this Science is called Ayurvedic Science.

1.4 AIM of Ayurveda

There are two main aims of Ayurveda:

- To maintain the health of a healthy person
- Treatment of sick person to bring back to normalcy.



Intext Questions 1.2

1. Fill in the blanks:

- (i) *Ayu* is the combination of _____.
- (ii) Treatment of a sick person is the _____ of Ayurveda.

1.5 Definition of Health

A person in whom, the biological activities performed by *dosas* (biological humour), *agni* (digestive power), *dhatu* (tissues) and *malas* (waste products) are within normal limits, his *atma* (soul), *Indriya* (senses), *mana* (mind) are calm and give the feeling of happiness is called *svastha* (healthy person).

According to WHO

Health is a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity.

1.6 Scope and content of Ayurveda

Ayurveda (science of life) deals with the goal of maintaining the health of a healthy person and treating an ill person to restore health.

The successful fulfilment and achievement of *dharma*, *artha*, *kama* and



Notes

moksha is only possible with healthy life. Ayurveda is of public interest and is related with individual as well as society and responsible for the development of mankind and nation. One can link with Ayurvedic system in different ways or we can say following are the vocations emerging out of Ayurveda

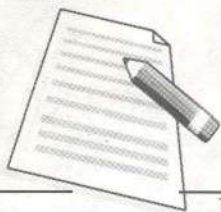
- i) *Chikitsaka* (vaidya)
- ii) Profession of teaching of *Ayurveda*
- iii) Paricharak,- supportive staff to conduct the work of chikitsa (pharmacists, nursing staff, attendants etc.)
- iv) Cultivating of medicinal plants
- v) Collection and storage of drugs (Herbal, animal origin and minerals.)
- vi) Pharmaceutical preparations (Pharmacy)
- vii) Marketing of raw drugs and prepared drugs.

1.7 Content of Ayurveda (Asthang Ayurveda)

Ayurveda has 8 disciplines

1. **Shalya tantra-** The branch of Ayurveda which deals the methods of removal of different kinds of foreign objects from the human body such as grass, wood, stone, sands, metal, bone, hair and nail; pus, exudation, foreign body from the inner core of vitiated ulcers. Use of *yantra sastra* (surgical instruments) and application of *kshar* (chemical cauterization) and *agni* (thermal cauterization) and management of ulcers/ wounds.
2. **Shalakya Tantra-** The branch of Ayurveda which deals with disease and treatment of parts above the clavicle such as ears, eyes, mouth, nose, head.
3. **Kaya Chikitsa-** The branch of Ayurveda which deals with the diseases and managements affecting the all parts of body such as

Section One



Notes

fever, bleeding disorders, insanity, epilepsy, skin diseases with leprosy, diabetes, diarrhoea etc.

4. **Bhuta vidya-** The branch of Ayurveda which deals with persons possessed by spirits, like deva, asura, gandharva, yaksa, rakshasa, pitra, pisaca, naga etc and methods of propitiating them, with different rituals.
5. **Kaumara bhrtya-** The branch of Ayurveda which deals with nursing care of the child, purification of and enhancement in nutrient values of mother's milk, diseases arising from drinking vitiated breast milk and their treatment.
6. **Agada tantra-** The branch of Ayurveda which deals with the ailment caused by bites of poisonous animals like snake, insects, spider, rat etc., signs and symptoms developed due to different kinds of poisons which enters the body through different routes like mouth, eyes and skin etc
7. **Rasayan tantra-** The branch of Ayurveda deals with the delay of ageing, increase longevity of life, intelligence immunity of fight against diseases.
8. **Vajikarana tantra-** The branch of Ayurveda which deals with the diseases arising from vitiated semen and its management.

1.8 Relevance to present time and merits on other system of medicine

Ayurveda is one of the oldest systems of medicine is relevant even in the present time due to its strong principles and their implementation in service of mankind even today. The system has faith in the maintenance of health of a healthy person through its emphasis on natural lifestyle.

According to *Charaka samhita* persons living near to nature remained away from diseases. Changing lifestyles and food habits in modern



Notes

times are responsible for the manifestation of different physical and mental ailments. For achieving positive health, it is necessary to lead life according to the natural laws. Early rising and proper sleep is necessary for good health. Consumption of natural food and plenty of water makes a difference. The body is a replica of the universe and changes in the universe affect the body. Simultaneously, the body activities, mental make-up, feelings and speech affect the body itself.

Maximum stress has been laid in enhancing the physical and mental strength to act as resistance power against disease. Details of diet and good conduct and good acts of a person at individual as well as community level are all aspects relevant for health and such type of description is not available in other systems of medicine in reference to health.

The Indian system of medicine, *Ayurveda* even now gives medical relief to a very large section of the Indian as well as world population. In the present times, the saturation point has come in the field of western medicine. The side effects of allopathic medicines as well as expensive investigative techniques are extreme. Scientists and researchers are very keen to offer an alternative medical system to the world. *Ayurveda* fulfils the criteria. Herbal remedy for general ailments is rather popular in different parts of world. All old civilizations of the world have their own medical system based on herbs and other techniques. The use of herbal medicine including *Ayurveda* is increasing day by day due to the awareness about its efficacy and advantages.



What have you learnt

In this lesson we have studied the history of Ayurveda, with important samhitas of the system, definition and aim of Ayurveda, definition of health, scope and content of Ayurveda (Astanga Ayurveda) and relevance to present times with merits over the other system of medicine.

Section One**Notes**

The studies of above mentioned points will facilitate the students in better understanding of the subject.

**Terminal Exercise**

1. How many disciplines are in Ayurveda? Discuss in brief.
2. Write down the definition of health given in Ayurveda and by W.H.O.
3. Describe in brief the Astanga Ayurveda and define each branch.

**Answer to Intext Questions****1.1**

1. Atharveda
2. Acarya Vagabhata
3. Surgery
4. Madhave Nidan , Sarangdhar samhita, Bharprokashsamhita.

1.2

1. Sarira, Indriya, Manas, Atma
2. Aim



Notes

2

FUNDAMENTAL PRINCIPLES OF AYURVEDA WITH APPLIED ASPECTS

In the previous lesson you have studied the history of Ayurveda, its aim and scope. In this lesson, we will discuss the fundamental principles of Ayurveda.



Objectives

After studying this lesson you will be able to :

- Know the principles of Ayurveda
- How the *panchmahabhuta* formed with their characteristics.
- Understand the status of tridosa, saptadhatu and malas in body with their features during health and ill state.
- Understand the role of ahar, *nidra* and *brahmcarya* in maintenance of health.
- Define and understand hetu (aetiological factors), *ling* (symptomatology) and ausadh (medicine) essential for management of disease.
- Explain the actions of dravyas on the basis of *guna*, *rasa*, *vipaka*, *viryas* and *prabhava*.

2.1 Fundamental principles of Ayurveda

There are five fundamental principles of Ayurveda:

1. Principle of Panchmahabhuta (five basic elements of the universe)

Section One



Notes

2. Theory of *tridosha, saptadhatu and mala* (three vitiating humours, seven body tissues and excretory products)
3. Importance of *ahara, nidra and brahmacharya* (diet, sleep and abstinence) for maintenance of a healthy person.
4. *Hetu ling ausadh sidhanta* (principles of aetiological factors, symptomatology and medicine) for management of sick to bring back to normalcy.
5. *Dravya, guna, rasa, vipak, virya and prabhava* (materials and their pharmacological properties and effect).

1. Principles of *panchmahabhuta*

All the living and nonliving things of the universe are made up of five basic elements. These are called *panchabhauik*. *Panchmahabhuta* provide physical seat for consciousness. The five *mahabhutas* are *akasha, vayu, agni, jal* and *prthivi*. The *sabda* (sound), *sparsh* (touch), *rupa* (vision), *rasa* (taste) and *gandh* (smell) are their properties respectively.

Formation of *mahabhutas* : In *avyakta* the three *guna: satva, rajas* and *tamas* are in perfect equilibrium. This equilibrium is disturbed when *purush* combines with *avyakta* and starts the process of creation of the Universe.

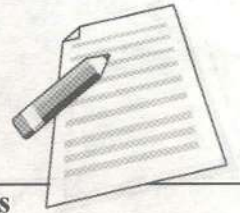
The *prakriti* (*mulaprakriti* or *avyakta*) produces *mahat* having the same qualities of *avyakta*. *Mahat* produces *ahankara* having the same qualities. This *Ahankara* is of three kinds *Vaikarika, tejasa* and *bhutadi*.

Vaikarika ahankara with the help of *tejas ahankara* produces eleven *indriyas*. These are *srotra, tvak, chakshu, jivva, ghran, vak, hast, upastha, payu, pada* and *manas*.

Bhutadi ahankar with the help of *tejas* produces *panchtanmatra* (five ultimate elements or primordial elements) these five are *sabda tanmatra, sparsha tanmatra, roop tanmatra, ras tanmatra* and *gandha tanmatra*. Their specific properties are *sabda, sparsh, roop, rasa, gandha*

respectively. These tanmatra produce five bhoot (maha bhoot) these are akash (space), vayu (air), agni (fire), jal (water) and prithivi (earth).

Out of these *mahabhutas* the first one has only one property and there is addition of one more property in next mahabhuta. Thus the former mahabhuta along with its property is associated with later bhuta. The coarseness, liquidity, mobility, hotness and non interruption are the specific characters of prithvi, jal, agni, vayu, and aakash respectively. All these characters can be perceived by the tactile sense organs.



Notes

Intext Questions 2.1

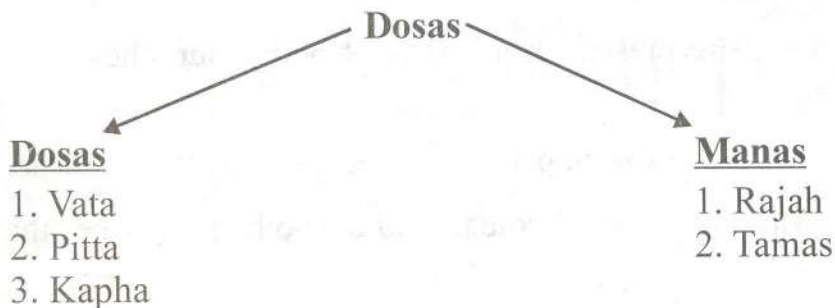
Fill in the blanks:

1. *Panchmahabhutas* are _____.
2. The character of *prithivi* and *jal mahabhuta* are _____ respectively.

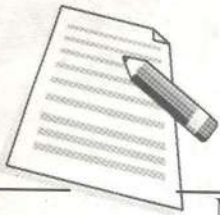
2. Theory of Tridosas, Saptadhatu and Mala

Dosas, dhatu and malas are foundations of the body. As the origin, growth and maintenance and destruction of plant is directly dependent on the root, in the same way dosas, dhatus and malas are the vital ingredients of body.

DOSAS : Dosas are of two types



Section One



Notes

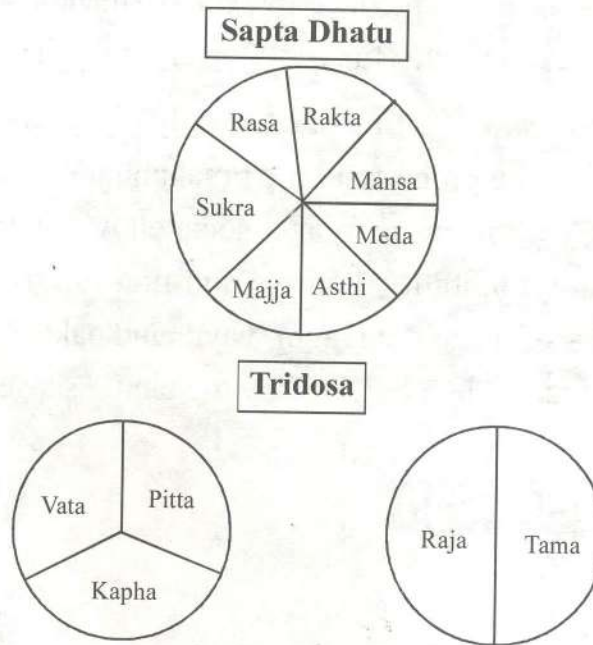


Fig. 2.1

In equilibrium state when dosas maintain the body. They are called dhatu. The vitiated dosas, *dhatus* and malas are responsible to develop the diseases in sarir. The dhatus and malas are not directly responsible for development of the disease.

The universe is maintained by the normal functioning of *soma* (moon), *surya* (sun) and *vayu* (air) through their functions *visarga* (providing strength), *adana* (detoriate the strength) and *viksepa* (dispersal of working of soma and surya when they are required for maintenance) respectively. Similarly the *kapha*, *pitta* and *vayu* maintain the body with their respective functions.

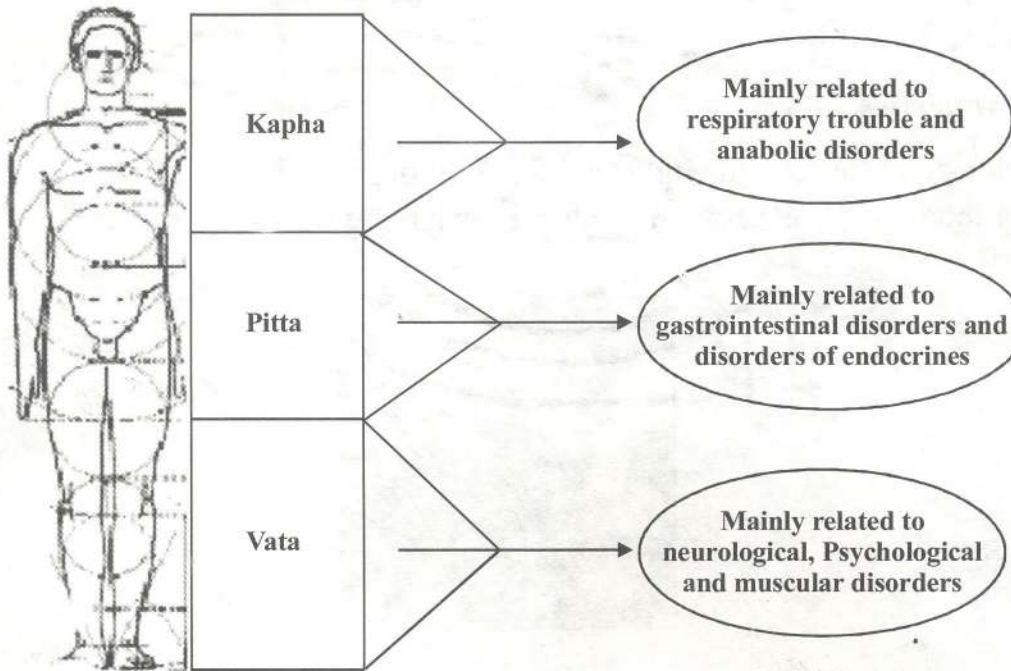
Sites of dosas

All the dosas are present in all parts of body. But they have their specific sites

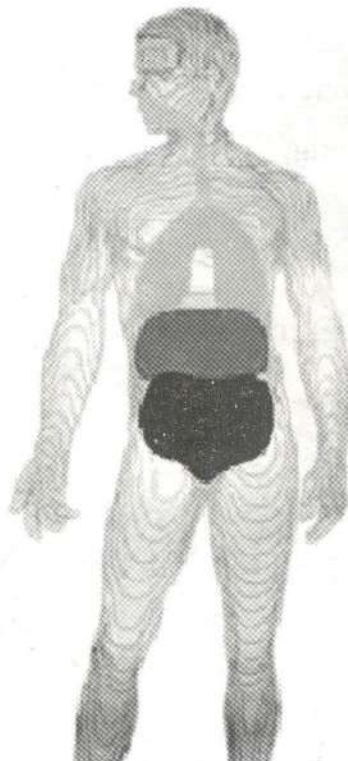
Kapha *Urdava bhag*: upper part of the body, above the heart

Pitta *Madhya bhag*: Middle part of the body: in between the heart and umbilicus

Vata *Adhobhag*: below the umbilicus



Notes



DOSHAS

KAPHA

Sinuses
Nostrials
Throat
Bronchi

PITTA

Liver
Spleen
Gall Blader
Stomach
Duodeum
Pancreas

VATA

Small intestines
Large intestnes

Fig. 2.2 : Site of *Tridosha* in the body and their related disorders
Organ specific site of Bodily Doshas



Notes

Vata Dosa

Properties of *Vata* –

Non-unctuous, cold, light, subtle, mobile, non slimy and rough in properties and is pacified by the drugs having opposite property



Fig. 2.3

Types & functions of *Vata* –

1. *Prana vata*

Site- mouth, neck, throat, tongue, nose, chest

Functions- Breathing, belching, to carry the food into stomach

2. *Udan vata*

Site- Umbilicus, throat, chest

Functions- Speaking, singing, courage

3. *Saman vata*

Site- Stomach, duodenum

Functions- to strengthen agni (digestive enzymes), separation of digested food material in to Ahar ras, urine and faeces

4. *Vyan Vata*

Site – whole body

Functions- Circulation of Ras and Rakt, sweating, relaxation, contraction, movement in any direction, blinking of eyes

5. *Apan Vata*

Site- Colon, Rectum and anus, testes and penis

Functions- Expulsion of urine, stools, semen, menstrual blood and foetus in the downward direction at the time of urge

Pitta Dosa

Properties of Pitta :

Slightly unctuous, hot, pungent, liquid, sour, bitter, katu, bluish yellow



Fig. 2.4

Types & functions of Pitta

1. Pachak Pitta

Site	Duodenum
Function	Digestion of food

2. Ranjak Pitta

Site	Liver and spleen
Function	Formation of blood

3. Sadhak Pitta

Site	Heart
Function	Fear, courage and anger

4. Alocak Pitta

Site	Eyes
Functions	Vision

5. Bhrajak Pitta

Site	Skin
Functions	Colour of skin, activities of sweat and sebaceous gland



Notes

Section One

Kapha dosa

Properties – The properties of kapha are heaviness, coldness, softness, greasy (unctuous), sweet, immobile, white, slimy.



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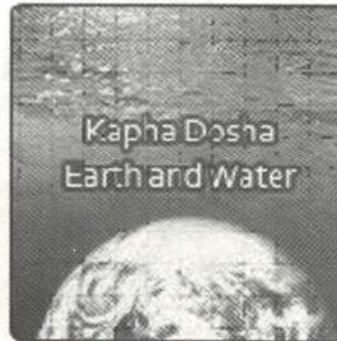


Fig. 2.5

Types & functions of kapha :**1. *Kledak kapha***

Site: Stomach

Functions: Softening & moistening of food material in stomach

2. *Avlambak kapha*

Site: Chest

Functions: Facilitates and strengthens the functioning of kapha at sacral region, heart and lungs and other sites..

3. *Bodhak kapha*

Site: Root of tongue

Functions: taste

4. *Tarpak kapha*

Site: Head including brain

Functions: Nutrition to brain and facilitates the functioning of all sense organs

5. *Sleshak kapha*

Site: Joints

Functions: Facilitates the functioning of joints

DHATUS

Dhatus are seven in number; these are rasa, rakta, mamsa, medas, asthi, majja and sukra. These dhatus are responsible for nutrition of tissues of body and their maintenance.

Rasa	: essence of digested food
Rakta	: blood
Mamsa	: flesh / muscle
Medas	: fat
Asthi	: bone
Majja	: bone marrow
Sukra	: essence of reproductive energy

Due to these functions mentioned above they are called dhatus.

Nutrition of Dhatus

The essence of foods and drinks (*ahara rasa*) supplies the nutrients to all the dhatus. The *Ahara rasa* contains nutritive ingredients required for all dhatus (tissues) of the body. Every *dhatu* absorbs its own specific nutrients from the circulating *ahara rasa*. These nutrients further undergo metabolic changes by the *dhatvagni* and become useful for that *dhatu*. From *rasa dhatu* *rakta* is formed, from *rakta*, *mamsa* is formed, from *mamsa*, *medas* is formed, from *medas*, *asthi* is formed, from *asthi*, *majja* is formed and from *majja*, *sukra* is formed.

The food is digested by the enzymes present in juices of alimentary tract. Following digestion, the digested food material is separated into two parts –

1. *Ahara rasa*
2. *Ahara malas*

In this manner, dhatus are formed in succeeding order, *purvadhatus* giving rise to *uttaradhatus* by supplying its *sukshma bhaga*. In this way, *rasa dhatu* provides nutrition to *rakta*, *rakta* provides nutrition to *mamsa*,



Notes

Section One



Notes

mams provides nutrition to medas, medas provides nutrition to asthi, asthi provides nutrition to majja and majja provides nutrition to sukra.

Dhatu parinama kala. (Time for formation of tissues)

This rasa remains in each dhatu for a period of 3015 kala, in this manner rasa becomes sukra in man and artava in women in the course of one month. (Total kala 1890kalas)

Ras Dhatu

Food is of four types *peya* (drinking), *lehya* (licking), *bhojya* (chewable) and *bhakshya* (eatable); having six tastes *madhur* (sweet), *amla* (sour), *lavan* (salt), *katu* (pungent), *tikt* (bitter) and *kasaya* (astringent); two *viryas* hot and cold. After digestion it is separated into ahara rasa and ahara malas. This rasa is absorbed and reaches to heart through srotas (channels in the body). The rasagni act on ahara rasa forming sthule bhag which nourishes rasadhatu, sukshma bhag which nourishes artava, stanya and raktadhatu (menstruation, breast milk and blood) and respiratory secretions (phlegm). From the heart it goes upwards, downwards and obliquely to nourish the entire body to make it grow, nourish and maintain it. The quantity of rasadhatu is nine anjalis (open palms held together of oneself).

Rakta dhatu : By the action of ranjak pitta rasadhatu converts in rakta dhatu.

Suddha rakta lakshan : The raktadhatu resembles indragope (insect which is bright red in colour). Rakta (blood) provides colouration to the body, nourishment to mamsa and maintains vital functions of body. The blood is the basis of body, the body is maintained by blood, blood itself is life and it should be protected by all means. The quantity of blood in the body is eight anjalis of oneself. Blood is 5 % of body weight and 45% is cellular part and 55% acellular part.

Mamsa dhatu : Mamsa nourishes medas (strength of musculature). It gives shape to the human body along with the skeleton. It is about 41 % of total body weight and contains 5% of water and 21% of protein. Sira

(blood vessels), snayu (ligament and tendons), asthi (bone), and sandhi (joints) of the body are covered by muscles and provide strength to them. The muscles do their function of contraction and relaxation.

Medas dhatu : Medas dhatu is nourished by mamsa dhatu. Medas (Fat) bestows lubrication, sweating, stability and nourishment of bones.

Asthi dhatu : Asthi provides shape and size to the body and nourishment to majja (Bone marrow). The body remains erect by the support of bones.

Majja dhatu : Majja is nourished by the medas dhatu. Majja resides inside the long bones. The function is lubrication of body, strength of body, filling of bones and nourishment of sukra dhatu.

Sukra dhatu : The sukra dhatu is present all over the body like rasa in sugarcane, ghrita in milk or curd or oil in til. It remains present during childhood too. When a person thinks, looks, listens to words, touches the sexual partner it provides pleasure with discharges during sexual act.

The function is to provide patience, attractive personality, affection, physical and mental strength, pleasure during sexual act and strong and active sperm or ova which can fertilize to form embryo.

Ojas : The essence of all dhatus from rasa to sukra is oja and itself is bala (strength). It is present in all dhatus like ghrita in milk. The site of oja is especially heart (par ojas) but it is present all over body (apar ojas).

Features of ojas are color like ghee with reddish yellowish tinge in the heart, sweetness, fragrance of puffed rice, laja gandh, heaviness, coldness, softness, spreadable, is present in the body throughout life providing longevity to body tissues. It is unctuous, slimy, concentrated best seat of life.

The **Upadhatu** (byproducts) are seven in number: breast milk and menstrual blood are byproducts of rasa dhatu; blood vessels and tendons are byproducts of rakta dhatu; fat and skin are byproducts of



Notes

Section One



Notes

mamsa dhatu; ligaments are the byproduct of medas dhatu

MALAS

Malas – excretory products – are made up of food following its digestion. Thus the fractions, essence and excretion formed during the process of digestion, support each other and thus maintain the body by mutual co-ordination. The malas vitiate the body; so they are also known as dusyas. Therefore, from time to time they are excreted from the body.

The excretion of food is faeces and urine, the excretory phlegm is of rasadhatu, the excretory bile is of rakta dhatu. The malas of external orifices (ear, eyes, nose, mouth, external genitalia) are of mamsa dhatu, sveda (sweat) is the malas of meda dhatu. The hairs of head and body and nails are the malas of asthi dhatu, the sneha (sticky secretion and sebum of eyes and skin are the malas of majja dhatu.

Functions of Sveda are that it helps in the maintenance of moistness and softness of skin.

Features of diminished sveda are obstruction of hair follicles, dryness of skin, abnormality of touch and absence of sweating.

Functions of increased sveda are heavy sweating, bad smell of skin and itching.

3. Traya upasthambha (Ahara-Nidra-Brahmcharya)

Ahara, nidra and brahmcharya are sub-pillars of body. If these three are properly used by a person, the body will be well maintained. Their proper implementation provide strength, luster and proper development of the body and helps in fulfillment of the goal of ayurveda i.e. prevention of ill-health of a healthy person. This goal can be achieved by implementation of ahara-nidra-brahmacharya with respect to *prakriti*, *dincharya*, *ritucharya*, age, habitat and principles of dietetics.

Determinants of health are hereditary and environmental factors, lifestyle, socio-economic conditions, health and family welfare services and other

factors like food consumption, agricultural system, industry and rural development.

AHARA (diet)

Ahara: The *dravyas* are of two types: i) *ahara dravya* and ii) *ausadha dravya*. *Ahara dravyas* act through *rasa* /taste; *madhur*, *amla*, *lavan*, *katu*, *tikta*, *kasaya* (sweet, sour, salt, pungent, bitter and astringent) and the *ausadh dravya* act through *veerya* /potency: *sheeta* and *usna* (cold and hot). The *dravyas* (substances) are *panchabhautik*, - made up of five basic elements – and they may be predominated by *akash*, *vayu*, *agni*, *jal* and *prithvi* separately or in combination of two or more. So, it is necessary to understand the properties of *dravyas* and their *rasas* in reference to *panchamahabhutas*.

Relationship of rasas with mahabhuta and dosas

Rasa	Mahabhuta Predominant	Effect on dosas	
		pacifying	vitiating
Madhur	Ap , Prthivi	Vata, pitta	Kapha
Amla	Prthivi, Agni	Vata	Pitta, Kapha
Lavan	Ap , Agni	Vata	Pitta, Kapha
Katu	Vayu, Agni	Kapha	Pitta, Vata
Tikta	Vayu, Akasha	Pitta, Kapha	Vata
Kashaya	Vayu, Prithivi	Pitta, Kapha	Vata

Samrasahara is hitahara or samahara or yuktahara. **Samsarvaras** is recommended and essential measure for health. All the *rasas* are used in wholesome for longer period increases the strength and using of substances consisting one taste for longer duration decreases strength.

The characteristics of ahara dravyas : Acharya charaka categorized twelve groups of eatable substances. These are (i- *sukadhanya verga* (class of corns) (ii- *samidhanya verga* (class of pulses) (iii-*Mamsverga* (class of meats) (iv- *saka verga* (vegetables) (v- *phala verga* (fruits)



Notes

Section One



Notes

(vi- harita verga (class of green vegetables) (vii- Madhya verga (class of alcoholic drinks) (viii- jala verga (class of water) (ix- gorasa verga (class of milk and its products) (x- athakshu verga (sugar cane and its products) (xi- krtanna verga (dietary preparations) (xii- aharayogi verga (adjuvants of food)

Principles of annapana vidhi (ahara vidhi visesh ayatana – dietetics)

The ahara vidhi vidhan is for healthy person and for ill in certain conditions who takes wholesome food timely. One should take warm, snigdh, matravat (in proper quantity), after digestion of previous food, virya-avirudh(non-antagonistic), ista desh(in favourable place), ista sarvopkaran(with all favourable accessories), not too fast, not too slow, ajalpan (not talking), not laughing, with full concentration and after proper consideration of self whether particular ahara dravya is suitable to me or not. There are eight specific factors affecting diet. These are (i- prakriti (nature), (ii- karan (processing), (iii- samyoga (combination), (iv-rasi (quantity), (v- desh (place , habitat), (vi- kala (time), (vii- upayogasamstha (rules of use), (viii- upyokta (consumer).

NIDRA (sleep)

Nidra is one among the three sub-pillars (*ahara, nidra, brahmcharya*) for healthy life. When the mind is exhausted and tired sense organs take away themselves from their objects, one sleeps. The heart is the seat of *chetna* (consciousness). When the effect of *tamoguna* manifests on *hrdaya* (heart) one gets sleep. *Satvaguna* is the cause of awakening. Sleep comes by nature.

Sleep is the cause of happiness, misery, corpulence, leanness, strength, weakness, potency & impotency, intellect & non-intellect, life and death (as in *kalaratri* or the night of death). Untimely sleeping, excessive sleeping or no sleeping or less sleeping takes away the happiness.

Indications of *divasvapna* (daytime sleep) : The following persons, who are actually habituated to daytime sleep are those persons who are

emaciated due to singing, study, alcohol, sexual intercourse, samsodhan therapy, carrying weight, traveling on foot, ajirna, injury, wasted, old, children, women, suffering from thirst, diarrhea, pain, hiccup, insane, vigil and fear and may sleep during daytime. In summer season due to short nights and aggravation of vata one may enjoy daytime sleep, though daytime sleep in other seasons is avoidable.

Harmful effects of divasvapna : These are headache, *staimitya* (feeling that body is covered by moist cloth), loss of appetite, feeling of pressure or feeling of coating over the heart, swelling, nausea, pinash (rhinitis), migraine, urticaria, disorder in memory and intellect, blocking of srotas, incapability of sense organs etc. As wholesome diet is mandatory for maintenance of body, the same is applicable to sleep.

BRAHMACHARYA (Celibacy) :

Brahmcharya is one of the best paths among all the paths to be adopted in life. In reference to healthy life the conduct of *brahmcharya* should be considered with *sukra raksha*, i.e. protecting the essence of reproductive energy in terms of semen in the male and secretions in the female. To avoid unnecessary loss of *sukra* one should desist from the eight types of sexual practices – *astha maithuna*. These are *smarana* (memory), *kirtana* (conversation regarding sexual experiences), *kaili* (use of sex related signals), *prakshana* (to look again and again), *guhyabhasana* (use of such words having sexual interpretation), *samkalp* (determination for sex), *adhyavasaya* and *kriya nivritti* (completion of act)

The excessive loss of *sukra* causes pain, cough, fever, asthma, debility, *kshaya* (phthisis), convulsions etc. If a person has control on *indriyas* and follows the path of *brahmcharya* even during family life i.e. controlled sex or continence, he /she will experience long healthy life, delay old age, body will be full with strength and luster.

4. Hetu-Ling-Ausadh Trisutra (Etiology – Symptom – Therapeutics)



Notes

Section One



Notes

For the management of disease proper implementation of *hetu- ling- ausadh trisutra* is necessary.

HETU

Hetu is the causative factor to produce the disease. The perverted use (*mithya yog*), no use or negative use (*ayoga*) and excessive use (*ati yoga*) of *kala* (time), *buddhi* (intellect) and *indriyarth* (sense objects) are the cause of psychic and somatic (physical) disorders.

Kala (Parinam) - It is of three types – winter, summer and rainy season. If there is excess of specific character of time it is called excessive occurrence (*ati yoga*) e.g. excessive hot in summer makes the pond dry and falling of leaves; deficiency in these characters denotes the deficient occurrence e.g. in cold season there is no cold or less cold (*ayoga*). Time having characters opposite to its own is the perverted occurrence (*mithya yoga*) e.g. in summer season some time excessive hot and some time less hot and some time it is pleasant.

Buddhi (Intellect): error – *Prajnaparadha* or error in perception and action. Action is the application of speech, mind and body. Too much application of speech, mind and body is *ati yoga* and none or less application of speech, mind and body is *ayoga*. Holding up or forcing of urges, abnormal posturing, obstruct in breath, and *pradushan* (pollution), heating, pressing is perverted use of bodily actions. Words indicating betrayal, breach of trust, untimely speech, quarrel, dislike, irrelevance, indiscipline and harshness are the perverted use of speech. Fear, grief, anger, greed, confusion, jealous, wrong knowledge is perverted use of *manas* (mind).

Asatmyaindriyarth samyoga : Excessive, negative and perverted use of sense objects such as excessive gazing of sun (brilliant objects) is over use, avoiding looking is *ayoga* and seeing too near, too distant, fierce, frightful, wonderful, disliked, disgusting, deformed and terrifying objects is perverted use with visual objects. To hear too much loud sound of clouds, engine whistling, bus horn etc is excessive use, no or

less hearing is *ayoga* and hearing of frightful words and words indicating loss of dear ones and humiliation is perverted use of auditory objects. Too much smelling of strong smells is excessive use, not at all smelling is no use and smelling of disliked, decomposed, cadaverous odour etc. is perverted use of olfactory objects. Too much intake of rasas is excessive use, no or less intake of rasa is *ayoga* and not following the dietary rules e.g. processing combinations of honey and ghee in equal quantity or having fish and milk together are perverted use of objects related to the sense of taste. Bath with too cold water or too hot water, excessive massage is *ati yoga*, total abstinence from them is negative use, cold and hot bath without order, touch of uneven objects is the perverted use of tactile objects.

LING

Ling Gyan (Symptomatology) – These may be *poorvarupa* (prodromal symptoms), *rupa* (symptom of diseases), *upsaya - anupsaya* (therapeutic test to diagnose the diseases) and *samprapti* (pathogenesis). The symptoms may be assessed according to the predominance of the dosas

- (i) *Sarir dosas* – *vata, pitta* and *kapha*
- (ii) *Manas dosas* – *Rajah, tamas*.

AUSADH

Ausadh Gyan – *Dravya* may be used as food and as well as medicine according to the merits of *dravya*.

1. Some *dravya* pacify the vitiated dosas e.g. oil pacify *vata*.
2. Some *dravya* vitiates *dhatus* e.g. incompatible combination of diet like milk and fish jointly
3. Some *dravya* are beneficial for maintaining normal health e.g. *amala*, wheat, barley, cow's milk, moong dal etc.

5. *Dravya, Guna, Rasa, Vipaka, Virya and Prabhava* - Properties of Natural Substances



Notes

Section One



Notes

Guna is the property of dravya, rasa is the taste of dravya, vipak follows the digestion of dravya, virya is potency and prabhava represents the effectivity of dravya.

According to Ayurveda, each and every substance in the universe is useful in the maintenance of health, and curing the disease. It may be of vegetable origin, animal origin or mineral origin.

The properties of the natural substances which are used as medicine and food are described in five main categories, i.e. rasa, guna, virya, and prabhava.

The co-relation of these properties with the body constituents and its physiological properties are widely explained in Ayurveda.

Rasa means the tastes of the substance when it comes in contact with the tongue sweet, sour, salt, bitter, pungent and astringent taste are assessed. Compositional relations of the substance with pancamahabhuta make the substance have particular guna or property, having specific effect on the basic constituents of the body. Virya, is potency, Vipaka is the final transformation of substance after digestion and Prabhava is efficacy.

This knowledge of the properties of natural substances is helpful for the selection of the substances or drugs for the treatment or to achieve the balanced condition of the body-constituents. The qualities of the substances in terms of rasa, guna, virya, vipaka and prabhava are taken into consideration and are used for successful treatment.

**Intext Questions 2.2**

Fill in the blanks :

1. The types of sarira dosa are _____.
2. The site of kapha and vata dosa are _____ respectively.



Notes

3. The types of pitta are _____.
4. The functions of bhrajak pitta are _____.
5. The types of vata dosa are _____.
6. The functions of apana vayu are _____.
7. Kledak kapha is present in _____.
8. Saptadhatu are _____.
9. Rakta, medas and sukra are _____.
10. The updhatu (byproducts) of rasa dhatu are _____.
11. The malas of ahara are _____.
12. What is trayaupastambha _____.
13. The hetu of the disease is _____.
14. The five properties of natural substance (*dravya*) are _____.



What You Have Learnt

In this lesson you studied the principles of ayurveda like principle of *panchmahabhuta* with their formations and properties, the principle of tridosa, saptadhatu with malas and their biological activities in maintainance of body, to protect the health of a healthy person with appropriate implementation of dietetics, sleep and celibacy, *hetu-ling-ausadh* for *vikaropsaman* of a sick and lastly *guna, rasa, vipaka, virya* and *prabhava* to explain the actions of *dravyas* either used as *ahara* or as *ausadh*.



Terminal Exercise

1. Explain the Fundamental Principles of Ayurveda.
2. Write a short note on Dosas.
3. Write a short note on the following :

**Notes**

- Ahara (diet)
- Nidra

**Answer to Intext Questions****2.1**

1. *Akasha, vayu, agni, jal, prthivi*

2. Smell and taste

2.2

1. *Vata, pitta, kapha*

2. *Urdha bhag* of body and *adhobhag* of body

3. *Packak, Ranjak, bhrajak, sadhak* and *alochak*

4. Lustre and shade of skin

5. *Prana, samana, udana, vyana, apana*

6. *Dharan* of urine, faeces, semen artara and foetus and their expulsion at the time of urge.

7. *Amasaya*

8. *Rasa, rakta, mamsa, medas, asthi, majja and sukra*

9. Dhatu

10. Breast milk and menstrual blood

11. Faeces, urine and flatus

12. *Ahara, nidra, brahmcharya*

13. *Kala, Buddhi* and *Asatmaya indriyath samyoga*

14. *Rasa, guna, virya, vipaka and prabhava*

3

HEALTH & HYGIENE INCLUDING PREVENTIVE MEASURES



Notes

In previous lesson, you have studied the principles of *panchamahabhuta*, theory of tridosa, saptadhatu and mala, Ahara-Nidra-Brahmcharya, hetu-ling-*ausadh siddhanta* and properties of dravya. Here you will study about concepts of health and hygiene which also act as preventive measures against illness. These concepts of health and hygiene include good conduct, dincharya and ritucharya, suppressive and non-suppressive urges.



Objectives

After studying this lesson you will be able to:

- Understand the health & hygiene in reference to urges, dincharya, ritucharya, good conduct & measures to prevent the diseases;
- Apply the preventive measures to prevent the diseases.

3.1 Dincharya

(Daily routine for personal health)



Fig. 3.1

Section One



Notes



Fig. 3.2

A person having the desire to protect the health should awake early in the morning (brahm muhurta). After leaving the bed one should complete the act of defaecation.

Dental and oral care: To clean the teeth one should use datum or toothbrush of *kasaya*, *katu* or *tikta* dravya twigs of plants which should be equal in thickness to the circumference of tip of the little finger and 12 *angula* (about 9") in length. The tip of datun should be crushed so that it looks like a brush. Teeth cleaning should be done twice daily (in the morning and evening after meal) without injuring the gums. The debris coated on the tongue should be removed.

For removal of bad odour in the mouth, one should keep cloves, betel leaves, small cardamom or camphor in the mouth.

Keeping *Gandush* (gargle) of oil provides strength to jaw, voice and relish in food; the person practicing daily does not suffer from dryness of throat, lip cracking and disease of tooth and gum.

Facial care : The face should be kept clean and washed with fresh water, decoction of amla or kshere plant (papal or bargath etc) mixed with milk.

Eye care : The collyrium (sauviranjana) should be applied to eyes daily. It alleviates cough and improves vision.

Nasal care : One should use Anu taila as nasaya (through nose) thrice a day in early rainy days, autumn and spring when there is no cloud in the sky. It improves vision, smell and hearing and alleviates lock jaw, rhinitis and migraine.

Hair care : Combing is beneficial for hairs and removes dirt and lice.

Ear care : The filling of oil in external auditory canal daily helps in alleviating hard hearing, stiffness of neck and jaw.

Skin care : The massage of body softens the skin, nourishes dhatus and provides complexion. The massage on feet removes coarseness, stiffness, roughness and fatigue.



Notes

Vyayama (physical exercise) : The movements of body performed to bring firmness and to increase strength of body is known as *dehavyayama*. It should be practiced to half of one's strength. *Vyayama* practiced according to norms brings lightness, capacity to work, firmness, alleviates dosas & stimulates *agni*. Excessive physical exercise produces fatigue, exhaustion, emaciation, thirst, perspiration, darkness before eyes, cough, fever, vomiting.

Medicated Smoking (*drumpan*) is also advocated for happiness, alleviates headache, migraine, rhinitis, hiccough, respiratory disorders etc. A hollow stick is formed with the paste of substances like *priyangu*, *kesar*, *chandan*, *cardamom*, *gugglu*, *agaru*, *udumber*, *sallaki* etc. This should be lubricated with fat, put on smoking pipe and lit and smoked.

Cleanliness of body :

Sponging : It is performed by rubbing over body by moist cloth. It alleviates foul smell, heaviness, drowsiness, itching, dirt and sweat.

Bath : It cleans the body, is life promoting, destroys fatigue, sweat and dirt, and increases the strength of body.

3.2 Ritucharya

A person who follows diet and lifestyle according to seasons remains healthy. There are six seasons in the year. These are *sishira*, *vasant*, *grishm* (known as *adan kala*), and *varsa*, *sharad* and *hemant* (known as *visarga kala*). In the *visarga kala* the body has increased energy while in *adan kala* the body strength reduces.



Fig. 3.3

Hemant (first half of winter) ritucharya – in this season the body strength or digestive power are increased. The milk products, products

Section One



Notes

prepared from sugarcane juice, fat, oil, new rice and hot water should be had. The massage of body, oiling of head, sitting in sunlight are beneficial. During winter light food and cold drinks and vata increasing diet and strong wine should be avoided.

Sisira (*second half of winter*) **ritucharya** – hemant and sisira are similar and the routine of hemant is applicable in this season.

Vasant (*spring*) **ritucharya** – The body strength is medium and digestive power weakens. The accumulated kapha irritated by strong rays of the sun disturb body heat and causes diseases. In this season evacuative procedures like vomiting etc should be adopted and avoid heavy sour fatty and sweet diet and day sleep. One should do physical exercise, medicated smoking, use of collyrium and bath in lukewarm water. The paste of sandal and agaru should be applied over body. The diet mainly consists of wheat and barley.

Grishma (*summer*) **ritucharya** – in summer, the sun draws the moisture of nature through the sharp hot rays and the body strength weakens further. In this season sweet, cold liquid and fatty diet and drinks are beneficial. One should use cold and sweet sattv, meat of wild animals and birds, ghee, and sali rice. In this season *lavana*, *amla*, *katu*, hot diet and physical exercise should be avoided.

Varsha (*rainy season*) **ritucharya** – The body is already weakened in adan period and the digestive power is further disturbed due to vata. Moderate living is recommended in this season. One should avoid cold drinks, daytime sleep, river water, physical exercise, the sun, sexual intercourse; one should use food and drinks with honey and amla, lavana, fatty diet to mitigate the effect of vata. In this season old barley, wheat, sali rice, wild meat and vegetable soup, wine mixed with honey in small quantity and boiled and cooled water. Residing in places free from humidity is beneficial.

Sharad (*autumn*) **ritucharya** – In this season as pitta is aggravated, so madhur, light, cold, bitter, and pitta pacifying diet is beneficial. The barley, wheat, and sali rice are useful. Medicated bitter ghee, purgation and blood letting are useful. One should avoid fat, oil, curd, daytime sleep and sun.

3.3 Urges

There are two types of urges:

- 1) Non suppressible and
- 2) Suppressible

Non suppressible urges are thirteen in number; these include the Urges of urine, faeces, sukra, flatus, vomiting, sneezing, eructation, yawning, hunger, thirst, tears, sleep and breathing after exertion.

The suppression of these urges causes many types of symptoms eg.

- i) Suppression of urine causes suprapubic discomfort,
- ii) suppression of defecation causes painful distension of abdomen,
- iii) suppression of sneezing causes headache and stiffness of neck,
- iv) suppression of eructation causes hiccup,
- v) Suppression of tearing causes coryza (cold and running nose).

The person desiring the prevention of diseases should not hold the urges.

The person desirous of wellbeing should control the evil urges relating to mind, speech, and action.

3.3 Good conduct

Good conduct is beneficial to health and cannot be achieved without dharma (code of ethics).

- i) One should have faith in well wishers and should maintain distance from other than well wishers.
- ii) Respect the preceptors, cow, Brahmin, old aged, doctors, king and guests.
- iii) Help the needy and respect them,
- iv) Be kind to enemies.
- v) Be devoted to celibacy, knowledge, charity, friendship, compassion, cheerfulness, indifference and calmness.
- vi) One should not indulge in acts of violence, dishonesty and theft.



Notes

Section One



Notes

- vii) One should not indulge in sex with animals, wife of teacher and honorable persons
- viii) One should not speak out other's defects, do not speak harsh words, do not tell lies, talk without reference,
- ix) One should not be jealous,
- x) One should not try to take the assets of others, do not dishonour to honorables people.

The care of urges, discipline of *dincharya* and *ritucharya* and individual and social good conduct are aspects of hygiene along with dietetics.

**Intext Questions 3.1**

1. The ritus in *adana kala* are _____, _____, _____.
2. The healthy person should awake in _____.
3. The collyrium used in routine is _____.
4. *Vyayama* should perform in _____ of his strength.

**What You Have Learnt**

In this lesson you studied about health in relation to *dincharya*, *ritucharya* and good conduct for healthy persons, and suppressive and non-suppressive urges and prevention of disease following these practices.

**Terminal Exercise**

1. Describe the relationship of *Mahabhutas*, *ras* and *doshas*.
2. Describe *hemant ritucharya*.
3. Write in brief about unsuppressible urges.

**Answer to Intext Questions****3.1**

1. *Varsha, sharad, hemant*
2. *Brahm muharta*
3. *Sauviranjana*
4. *Half*



Notes

4

EMBRYOLOGY (GARBHAVYAKARANA)

Embryology deals with the conception of embryo, its development and exit from in appropriate time. Life takes place in mother's womb with the conjugation of *astaprkrutis* and *sodasa vikaras (fodkj)*. The development of foetus takes place with the essence of maternal, paternal, natural factors and nutrition and appropriateness.



Objectives

After reading this lesson you will be able to:

- Define embryology (*Garbhavyakarana*)
- Understand the Meaning of *Garbha* (foetus)
- Know the ingredients of the foetal body as the organ formation takes place in the foetus.
- Understand the cause of twin pregnancy.
- Know the position of foetus in uterus.

1.1 Embryology

Embryology or *Garbhavyakarana* deals with the conception of embryo, its development and exit from the mother's womb in appropriate time.

1.2 Bhutas

Bhutas which are reasons of all bodies, *Bhutani*, *avyaktam-mulaprakrti* (primordial nature) the causative source of all living beings, having eight

Section Two



Notes

forms such as *avaykta*, *mahat*, *ahankara* and five *bhutas*.

The unmanifest, *mahat*, *ahankara* and five *tanmatras*, these are *prakrti* (causative source) while the remaining sixteen are *vikara* (products).

1.3 Qualities of semen & menstrual blood

Qualities of semen

The normal semen is like quartz, liquid, unctuous, sweet, and sweet-smelling like honey, while some mention it as resembling.

Qualities of menstrual blood

In suitable time, the menstrual blood collected for a month, which is slightly black and stained is brought by *vayu* through two channels to the vaginal opening. Menstruation starts at the age of twelve and continuing in appropriate period (every month) and stops at the age of fifty. That menstrual blood is normal and commendable (for conception) which is like rabbit's blood or lac-juice and does not colour cloth fast.

As sprout comes out by the aggregate of season, soil, water, and seed, conception takes place positively if these four factors are combined properly.

As a lump of ghee, coming in contact of fire, liquefies, ovum of woman moves on during coitus with man. Proceeded ovum combined with sperm reaches the uterus and on joining of soul creates the embryo.

1.4 Garbha

What do you mean by Garbha (foetus) ?

The conjugation of sperm and ovum situated in uterus and combined with soul, nature and its products is called as garbha (embryo) which is developed in the mother's womb.

Combination of sperm and ovum situated in uterus and joined by the soul. Sperm is predominantly watery and ovum is igneous, other *bhutas* are also there in little quantity as they support each other and enter into each other. Under the control of heat and *vayu* semen discharged in the vaginal track combines with ovum and thus created by combination of *Agni* and *soma* reaches uterus.

Predominance of sperm produces male child and that of ovum creates female child while equality of both gives rise to hermaphrodite. The mouth of the woman's *uterus* contracts after the period of conception is over.

After menstruation sexual contact on even days leads to a male child, on odd days female child is born. In the first month appears *kalala* (semisolid mass); in the second month, the mass of five *maha bhutas* become dense. In the third month, five protruding spots for hands, feet and head along with minute demarcations of parts and sub-parts are apparent. In the fourth month demarcation of all parts and sub-parts are manifested well and due to such manifestation of foetal heart, the element of consciousness arises. In the fourth month it indicates its desire in sense objects and because of possessing two hearts the mother is called as *dauhrdini*. If these are ignored, the woman would deliver the child hump, with malformed hand, lame, dull, dwarf with deformed-eyes or no eyes. Hence, whatever she desires should be provided to her with priority. If desires are fulfilled properly, she delivers healthy and long-lived son. Whatsoever sense objects the pregnant woman desires to enjoy that should be arranged and provided to her by the physician to avoid disorders in *foetus*.

In the fifth month, mind is more awakened; in the sixth month, intellect develops. In the seventh month all the parts and sub parts become more distinct; in the eighth month *ojas* becomes unstable and as such if the foetus is delivered in that month, it does not survive because of being devoid of *ojas*. The normal time of delivery is anytime from ninth to twelfth month.

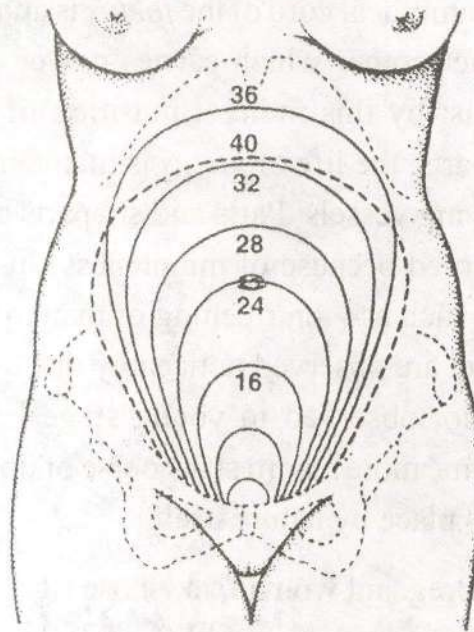


Fig. 1.1



Notes

Section Two



Notes

The umbilical cord of the *foetus* is attached to the Rasa-carrying channel of the mother which carries power of food-essence of mother to the foetus; by this indirect nutrition of the *foetus* it develops parts and subparts; the life of *foetus* is maintained by nutrition supply by Rasa - carrying vessels. Parts and subparts arise concurrently but they are not observed because of minuteness. Just like bamboo sprout and mango fruit such as—on ripening of mango fruit fractions like pulp, seed and kernel are observed noticeably due to maturity of time, while the same are not observed in young stage because of minuteness. The same become more manifest in course of time. Formation of parts and subparts takes place by nature itself.

The pregnant woman, in whose right breast milk appears first, who has bigger right flank, and lifts right leg first delivers the male child. The pregnant woman having bigger left flank and lifts her left leg first delivers the female child.

In conceived women, menstrual blood is obstructed by *foetus*. Thus being obstructed below it reaches upwards and further developed in the form of *apara* (placenta). The residual portion goes higher up to the breasts; that is why pregnant women have rotund and protruded breasts.

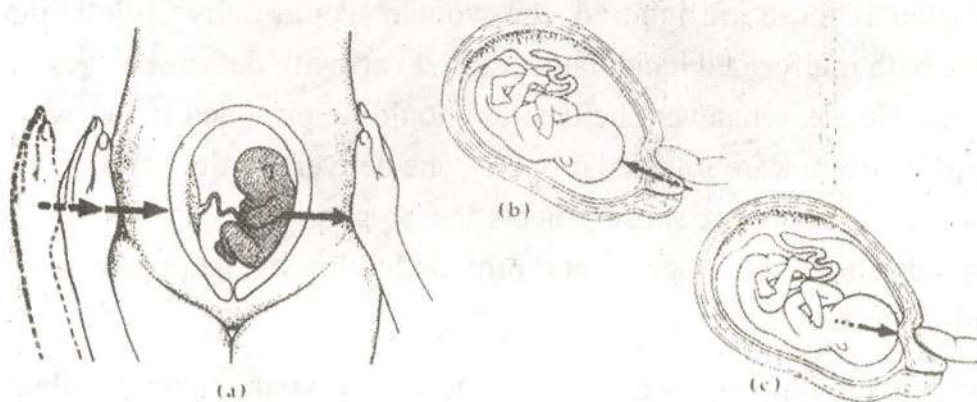


Fig. 1.2 : (a) External ballottement (b) & (c) Steps showing how to elicit internal ballottement



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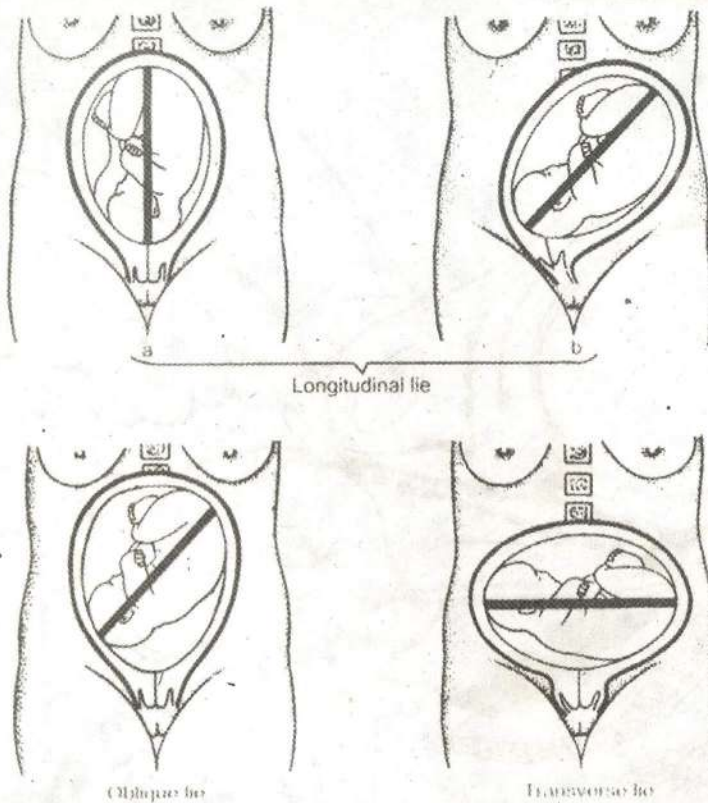


Fig. 1.3 : Figure showing fetal lie. The fetus seems to lie in oblique position in relation to the maternal spine but remains in longitudinal lie in relation to uterine axis. Correction of the uterine obliquity rectifies apparent oblique lie of the fetus.

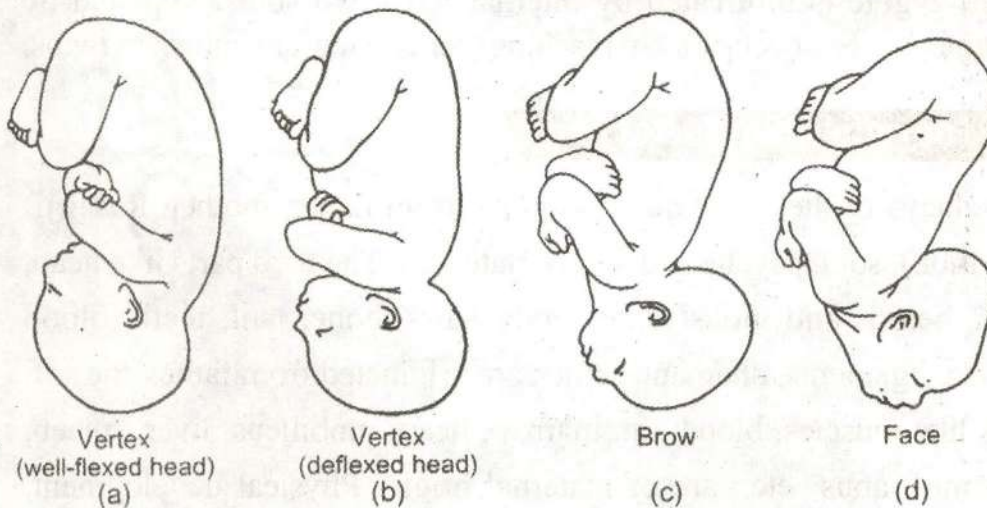
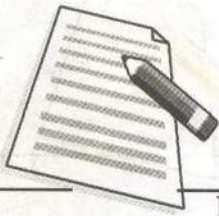


Fig. 1.4 : Varieties of cephalic presentations in different attitude



Notes

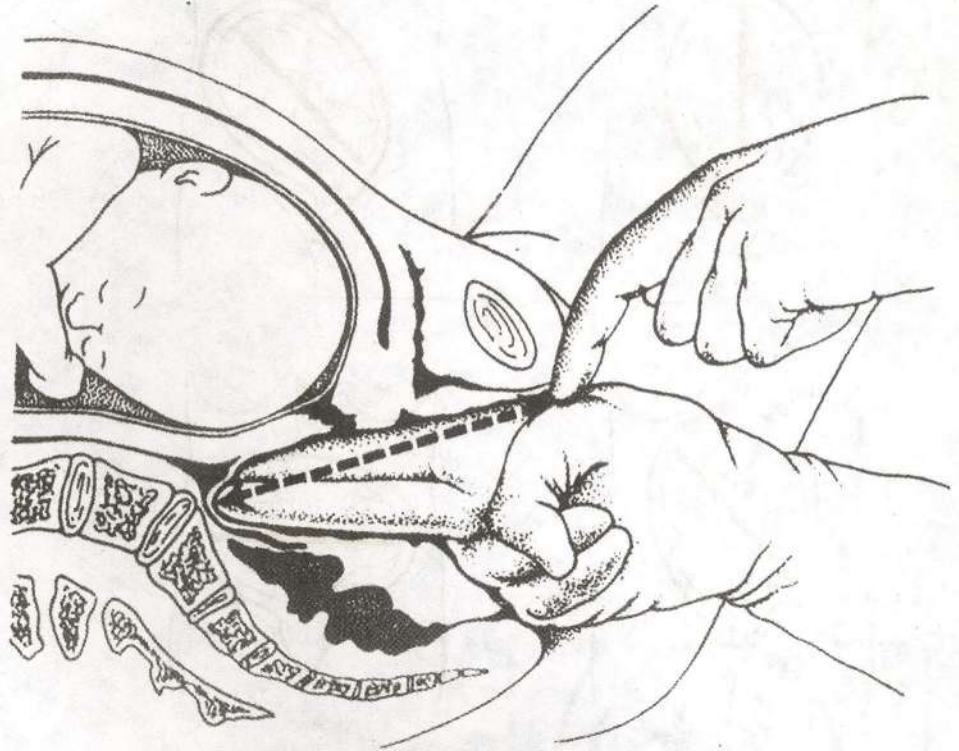


Fig. 1.5 : Measurement of diagonal conjugate

Cause of twin pregnancy

When zygote is bifurcated by internal vayu two souls, impelled by unrighteousness, occupy them reaching uterus. They are known as twins.

1.5 Ingredients of foetal body

Ingredients of the *foetal* body originate from father, mother, Rasa (jl) (nutrition), soul, psyche and appropriateness. The hard parts like head, hairs, beard and moustaches, body hairs, bone, nail, teeth, blood vessels, ligaments, dhamani, semen are originated from father, the soft parts like muscles, blood, fat, marrow, heart, umbilicus, liver, spleen, intestines, anus etc.; are of maternal origin. Physical development, strength, complexion, maintenance and reducing activity originate from rasa (nutrition). Sensory and other organs, knowledge, wisdom, life-span, pleasure, pain etc. originate from the soul. Energy, health, strength,

complexion and intelligence originate from appropriateness. Woman and man, with whatever diet, behaviors and activities they have during conception, their progeny is also like that.

Due to scantiness of excretions and little contact of *vayu* with large intestines, the foetus, in uterus, does not pass flatus, urine and faeces as mouth is covered with membrane, throat is surrounded by mucus and sound-producing air passage is blocked, the foetus does not cry.

The *foetus* acquires expiration, inspiration, movements and sleep from those of mother.

Vital forces

Agni (pitta), soma (kapha), vayu, sattva, rajas, tamas, five sense organs and soul, these are known as *prana* (components of life). These twelve collectively are called as *prana* because right from fertilization they execute and control the functions of life till demise when, with soul, they all disassociate and quit as the subtle body.

1.6 Organ formation in foetus

Liver and spleen of foetus originate from blood; lungs are formed of frothy blood and unduka (caecum) emerges from excreta of blood. The liver (*yakrt*) is situated on the right side; *pliha* – the spleen is situated on the left side; that is, *yakrtplihanau*. Kloma (pancreas) also emerges from blood; phupphusa (lungs) is an organ attached to the tubular structure in the cardiac region. The minute essence of blood and kapha is acted upon by *pitta* followed by quickening of *vayu* in this manner intestine, anus and urinary bladder are formed. By propelling of *kapha, rakta* and *mamsa*, while being digested in abdomen, tongue is formed from their essence. Two *vrkkas* (kidneys) are formed by essence of blood and fat. Heart is the seat of consciousness.



Notes

Section Two



Notes

Development of *foetus* takes place by *rasa* and propelling of *vayu* at the seat of *agni* in the center of *umbilicus*. *Vayu* propels it by which the foetal body develops.

The *Foetus* lies in the woman's uterus in a state of universal flexion facing the mother's back; at the time of delivery, it comes naturally towards the vagina with head presentation.



Intext Questions 1.1

Fill in the blanks:

1. The word *garbha* means _____.
2. The hard parts like head, hair, beard, bone, nail are originated from _____.
3. Cause of twin pregnancy is _____.
4. The position of foetus in mother's womb is _____.



What You Have Learnt

In this lesson we learnt

- Bhutas which are reasons of all bodies, Bhutani, *avyaktam-mulaprakrti* (primordial nature) the causative source of all living beings, having eight forms such as *avaykta*, *mahat*, *ahankara* and five bhutas. The unmanifest, *mahat*, *ahankara* and five *tanmatras*, these are *prakrti* (causative source) while the remaining sixteen are *vikara* (products) and their role in the life formation.
- The conjugation of sperm and ovum situated in uterus and combined with soul, nature and its products is called as *garbha* (embryo) which is developed in the mother's womb.

- The formation of embryo
- Ingredients of foetus
- Organ formation in the foetus



Terminal Exercise

1. What is foetus? Write down the formation of foetus in the mother's womb.
2. Describe the organ formation in foetus.
3. Explain the position of foetus in detail with diagrams.



Answer to Intext Questions

1. Combination of sperm and ovum situated in uterus and joined by soul.
2. Father.
3. When zygote is bifurcated by internal *vayu* (ok;q), two souls impaled by unrighteousness occupy the uterus.
4. Foetus lies in woman's uterus in state of universal flexion facing mother's back.

Foot note-

Garbhavyakarana (गर्भव्याकरण) - embryology

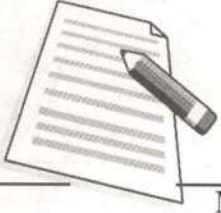
Garbha (गर्भ) - foetus

Bhutas (भूत) - basic elements

Prakrti (प्रकृति) - causative source

Shukra (शुक्र) - semen

Artava (आर्तव) - menstrual blood

Section Two**Notes**

Dauhrdini (दौहृदिनी)- having two hearts

Ojas (ओजस) - immunity

Apara (अपरा) - placenta

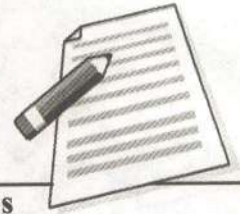
Unduka (उण्डूक)- caecum

Pliha (प्लीहा) – spleen

Yakrtplihanau (यकृतप्लीहानौ) – liver and spleen

Kloma (क्लोम)- gall bladder

Phupphusa (फुफुस)- lungs



Notes

5

PRAKRITI

(NATURAL CONSTITUTION)

Natural constitution (*Prakrti*) of a human being depends on the predominance of *dosa* during the fertilization. The natural constitution does not change during the whole life span. According to the *doshic* predominance, the qualities of one group differ from another in terms of build, body constitution, mental status, liking, disliking and diet etc. Assessment of natural constitution of an individual is very important to assess the diagnosis, prognosis and treatment of diseases.



Objectives

After reading this chapter you will be able to understand the:

- Meaning of *prakrti* (natural psychosomatic constitution)
- Meaning of *mahaprakrti*
- Qualities of different *doshic prakrti*.

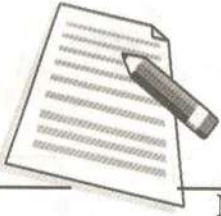
2.1 Prakriti & its Types

Prakriti (natural constitution): Natural constitution (*Prakrti*) of a human being depends on the predominance of *dosa* during the fertilization.

Prakriti (natural constitution) is of seven types- by *dosas* separately, two combined and collective of all. Natural constitution is considered by the *dosa* which reside predominant during fertilization.

Vatika Prakriti The person of *vatika* constitution is excessively restless,

Section Two



Notes

reluctant to cold, ill-fated, thief, resentful, uncultured, music-loving, irate, has cracked hands and feet, scanty and rough bear, moustaches, nails and hairs and grinds teeth. He is impatient with fickle friendship, ungrateful, lean, rough, with prominent veins, talkative, hastily moving, habitually traveling, with unsteady body, mind and eyes, has small collection of gems and jewelry, wealth and a few friends, occasionally talks inappropriately; in dream, he flies in the sky.

Paittika Prakriti The person of *paittika* constitution sweats profusely, has foul body smell, pallor and flabbiness in body, has coppery nails, eye, palate, tongue, lips palm and soles; unlucky, affected with wrinkles, early graying of hairs and baldness, eats a lot, is reluctant of heat, turns angry and calms quickly, has moderate strength and life-span. He is intelligent, sharp, contending, debater, brilliant, unmanageable power of battles. In sleep, he dreams of gold, flowers of palasa and *karnikara* and also fire, lightning and meteor. He never submits by fear, is harsh to the rude but compassionate/ charitable to those who are submissive, and frequently has trouble in mouth and difficulties of movement.

Kaphaja Prakriti The person of *kaphaja* constitution of complexion alike to the color of one of these-*durva indivara* sword, fresh *nimba* fruit and stalk of Sara is lucky, handsome, sweet loving, thankful, patient, tolerant, greedless, strong, but with laziness and delayed achievement.

He is magnificent and has white eyes, firm curly and bee-black hairs. In dreams, he experiences lotus, swan, cakravaka and beautiful lakes and water bodies.

The person with *kaphaja* constitution has reddish corners of eyes. Well defined organs, unctuous lustre and predominance of *satva* quality. He is tolerant of difficulties and respectful to teachers. He is firm in scriptural knowledge and views, with stable friends and wealth, donating plenty after long consideration, always precise in choosing sentences and words.

Mahaprakriti Apart from these, there are seven types of *mahaprakriti* (psychic constitution) according to *sattva*, *rajas*, *tamas* separately and combined together like *dosas*. *Brahma kaya*, *mahendra*, *varuna*, *kubera*, *gandharwa*, *yamya*, *arsa*. These seven types of psychic constitutions are predominant in *satva*.

In *rajas*, *asura psyche*, *sarpa* snakes psyche, *sakuna* birds psyche,

rakshas, pisacha, preta. These are the six types of psychic constitution predominant in *rajas*.

Animals psyche, *pasavasatva*, fish's psyche, *matsya satva*, *vanaspatya*, plant's psyche. Thus three types of psychic constitution predominant in *tamas* are described.



Notes

2.2 Proforma for Assessment of Prakriti

(A) PSYCHOSOMATIC CONSTITUTION

S.No.	Points of examination	Vatika	Paittika	Kaphaja,
1.	General body build	Thin & under developed, weak	Soft, tender physique, medium built moderate strength	Fully grown handsome, strong body
2.	Complexion	Dusky or dark	Fair, copper coloured	Fair, golden yellow or bluish tinge
3.	Skin	Cold coarse and dry	Arm with yellowish patches	Cold, soft, smooth moist oily and shining
4.	Wrinkles	Early onset	Early onset	Delayed onset
5.	Psychology	Irritable	Assertive	Calm or cheerful
6.	Veins & Tendons	Prominent	Non prominent, flaccid tendons & Ligaments	Well covered
7.	Hair	Dry, rough, unruly	Soft, brown, straight & secanty, early baldness	Thick, firm dense, oily ruly & black hair
8.	Chest	Narrow	Medium	Well formed
9.	Forehead	Narrow	Medium	Broad
10.	Eyes	Round, ugly, rough, dull & dusky, remain half open during sleep	Narrow, fissured, tawny unstable, readily affected under effect of alcohol anger & sun rays	Large white and shining

Section Two

Notes

11.	Teeth	Small, scattered thin & irregular	Yellowish irregular with cavities	Shapely & dense
12.	Nails	Thin, dry, brittle	Thin, smooth, pinkish or copper coloured with streaks of pigmentation	Thick, smooth shining
13.	Eye-brows	Not regular thin	Thin	Thick & regular
14.	Joints	Not firm	Lax & soft	Well formed/ strong
15.	Calf	Small & hard	Lax and soft	Well formed
16.	Gait	Hasty & quick	Brisk & agitated	Stable & majestic

(B) PHYSIOLOGICAL EXAMINATION

1.	Appetite, thirst & digestion	Takes meals & drinks water swiftly and frequently, poor digestion	Eats & drinks repeatedly & excessively, digestion fair. Frequently suffers from loose motions	Eat slowly, takes regular sumptuous meals. Can bear thirst hunger, appetite & digestion fair, bowel habit regular
2.	Dietary likings	Light, warm, sweets & sour tastes	Sweet, bitter, astringent & cold foods & drinks	Hot, bitter scar, astringent foods & drinks Moderate
3.	Perspiration & Micturation	Less in quantity	Profuse	Moderate
4.	Odor of body Mouth, armpit & sweat	Disagreeable	Foul & Sour smelling	Less disagreeable
5.	Sexual potency	Poor	Moderate	Strong
6.	Linking for coldness	Minimum	Maximum	Moderate
7.	Tolerance to cold	Minimum	Moderate	Maximum
8.	Liking for warmth	Maximum	Minimum	Moderate
9.	Tolerance to heat	Maximum	Minimum	Moderate
10.	Tremors	Common	Infrequent	Rare



Notes

(C) PSYCHOLOGICAL EXAMINATION

1.	Fondness of flower garlands and courteous & dependents	Minimum	Maximum	Medium
2.	Psychic nobility	Minimum	Maximum	Moderate
3.	Piousness	Minimum	Maximum	Moderate
4.	Belief in God	Less	Profound	Believes
5.	Courage and boldness	Minimum	Maximum	Moderate
6.	Calmness of mind	Minimum	Maximum	Moderate
7.	Grasping power	Excellent	Moderate	Medium
8.	Memory	Poor	Excellent	Good

(D) ANTHROPOMETRIC EXAMINATION

1.	Height	Tall & lengthy	Medium	Proportionate
2.	Weight	Light	Medium	Heavy
3.	Height, weight ratio	Maximum	Medium	Minimum
4.	Body surface area	Minimum	Medium	Maximum
5.	Subcutaneous fat	Minimum	Medium	Maximum

**Intext Question 2.1**

Fill in the blanks :

1. The *prakrti* is considered by the dosa predominant during _____.
2. The person of *vatika* constitution, in dream _____.
3. The person of *pattika* constitution sweats _____.
4. The types of natural constitution are _____.
5. Psychic constitution are _____.

**What You Have Learnt**In this lesson we have learnt the *Prakriti* (natural constitution) & its

Section Two



Notes

types. Natural constitution (Prakrti) of a human being depends on the predominance of dosa during the fertilization is called Natural constitution (Prakrti).

We have also learnt assessment of *Prakriti* (natural constitution).

**Terminal Exercise**

1. Describe the qualities of *vatika prakriti*.
2. Discuss the seven types of psychic constitution predominant in *satva*.
3. Discuss the proforma of psychosomatic constitution assessment.

**Answer to Intext Questions**

1. Fertilization
2. Flies in the sky.
3. Profusely.
4. Seven.
5. Eight

- Fill the proforma by asking the questions with your friends.

Foot note-

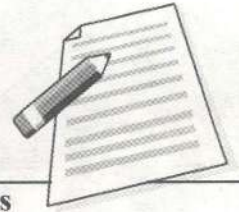
Prakrti (प्रकृति) -natural psychosomatic constitution

Mahaprakrti (महाप्रकृति) -psychological constitution

Doshik prakrti (दोशिक प्रकृति) - bodily constitution

6

BODY SUB PARTS (PRATYANGA)



Notes

Understanding of the Human Anatomy and Physiology is important for knowing the structure and functions of the human body. In this lesson we will study the basics of Human Anatomy Human Anatomy and discuss the skin, bones, ligaments, organs and their types.

Objectives

After reading this lesson you will be able to understand the

- Different types of body sub parts
- *Tvaka, kala*, (skin and mucous membrane)
- Number and types of *pratyanga*
- Number and types of *dosa, dhatu* and *mala* and
- Different *Asayas*

3.1 The Body Parts

The conjugation of sperm and ovum situated in uterus and combined with soul, nature and its products is called as *garbha* (embryo); that supported by consciousness is acted upon by *vayu* with division, by *tejas* with (transformation), by *ap* with moistening, by *prithvi* with consolidation and *akasa* with growth. Thus growth, when it is endowed with parts such as hands, feet, tongue, nose, ears, buttocks etc. it acquires the name *sarira* body. This has six parts, extremities four, trunk the fifth and head as the sixth one.

Section Two



Notes

Vertex, abdomen, back, umbilicus, forehead, nose, chin, urinary bladder and neck each one; ears, eyes, eyebrows, temples, shoulders, cheeks, axilla, breasts, inguinal regions, testicles, sides, hips, knees, elbows, upper arms, thighs etc. each two; fingers twenty; channels are the sub parts.

3.2 Constituents of the body parts are being discuss here briefly

Tvak, kala, dhatus, malas, dosas, yakrit, pliha, phupphusa, unduka, hridaya, asaya, antra, vrkka, srotas, kandara, jala, kurcha, sevani, sanghata, simanta, asthi, sandhi, snayu, pesi, marma, sira, dhamani is as follows-

Snayu (ligaments)-nine hundred

- *Asthi* (bones)-three hundred
- *Sandhi* (joints)-two hundred and ten
- *Marmans* (vital spots)-one hundred seven
- *Dhamani* (vessels)-twenty four
- *Layer of tvak* (skin)-seven

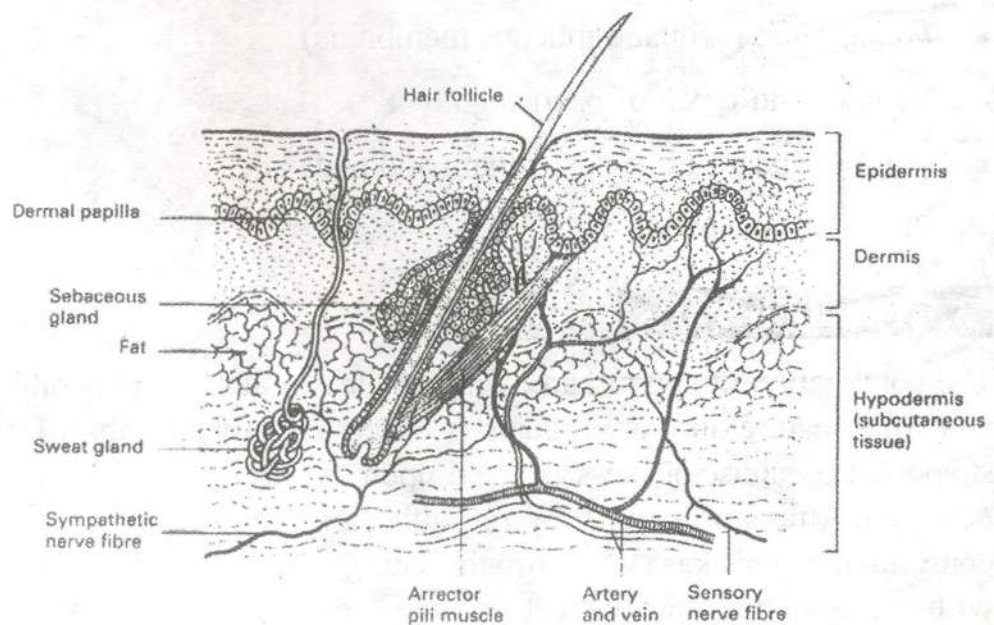


Fig. 3.1 : Skin (microscopic section)



Notes

- *Kala* (membranes)-seven
- *Asaya* (Viscera)-Seven
- *Dhatus* - seven
- *Siras* (blood vessels)-seven hundred
- *Pesi* (muscles)-five hundred
- *Dosas* -three
- *Malas* -three
- *Srotas* (opening)-nine

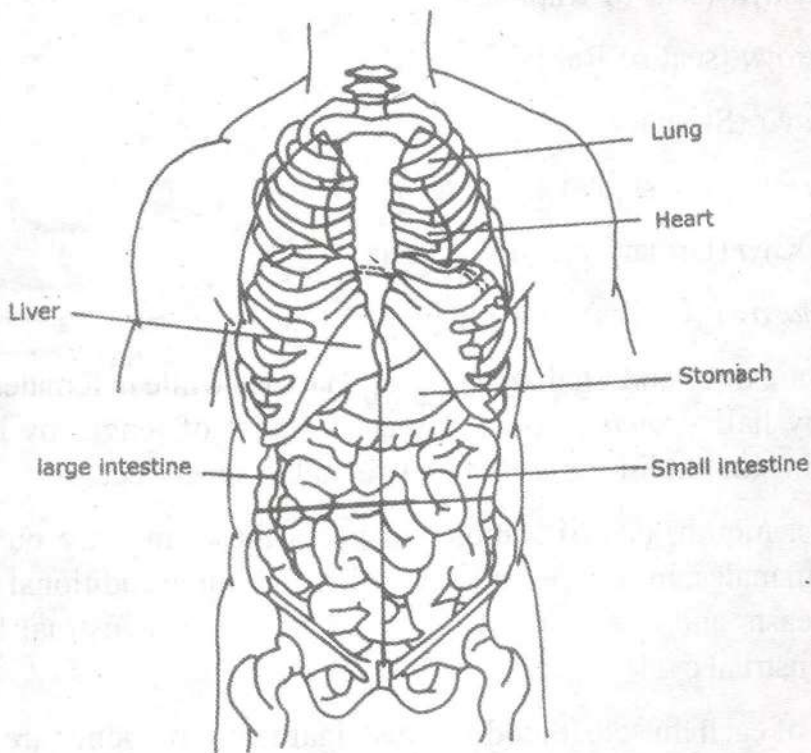


Fig. 3.2 : Shows disposition of various viscera in the thoracic and abdominal cavities.

- *Kandaras* (tendons)-sixteen
- *Jala* (networks)-sixteen
- *Kurcha* -six
- *Rajju* -four
- *Sevani* (raphe)-seven

Section Two



Notes

- *Sanghata* -fourteen
- *Simanta* -fourteen
- *Yogavaha srotas* (complementary passages)-twenty two
- *Antra* (intestines)-two
- *Asayas* (viscera)
- *Asayas* (viscera) are seven such as:—
- *Vattasaya* (seat of Vata)
- *Pittasaya* (seat of Pitta)
- *Kaphasaya* (seat of Kapha)
- *Raktasaya* (seat of Rakta)
- *Amasaya* (Stomach)
- *Pakvasaya* (Intestines)
- *Mutrasaya* (Urinary bladder)
- *Garbhasaya* (Uterus) in women

Intestines are three and a half *vyama* long in males while in females they are less by half *vyama*. *Vyama* is measurement of length by hands extended in straight line approximately equal to seven feet.

Ears, eyes, mouth, nostrils, anus and penis-these nine are outward openings in males; in females, however, there are three additional ones-two in breasts and one below(vagina) carrying the menstrual blood during menstrual cycle.

Networks of each muscle, blood vessels, ligaments and bones are four; they are situated in wrists and ankles.

Kurchas (brush-like structures) are six-found in hands, feet, neck and penis; they are two each in hands and feet while one each in neck and penis.

There are four long *mamsa-rajju* (fascial bands for muscles) for binding muscles both sides of vertebral column –two externally and internally. *Sevani* (raphe) are seven such as five in head and one each in tongue

and penis. There are fourteen *sanghata* (gathering of bones); of these, three are situated in ankle, knee and inguinal region, other leg and both arms; one each is in *trika* and head. *Trika* is known as sacral region.



Intext Questions 3.1

Fill in the blanks :

1. Vertex, umbilicus temples thigh, axilla are
2. Layers of *tvak* (skin) are _____.
3. Siras are _____ for _____ in number.
4. Asayas are _____ 7 _____.
5. The length of intestine is _____.
6. Ears, eyes, mouth, nostrils, anus and penis these nine are _____.



What You Have Learnt

In this lesson we studied that the conjugation of sperm and ovum situated in uterus and combined with soul, nature and its products is called as *garbha* (embryo); that supported by consciousness is acted upon by *vayu* with division, by *tejas* with (transformation), by *ap* with moistening, by *prithvi* with consolidation and *akasa* with growth. Thus growth, when it is endowed with parts such as hands, feet, tongue, nose, ears, buttocks etc. it acquires the name *sarira* body. This has six parts, extremities four, trunk the fifth and head as the sixth one.

Vertex, abdomen, back, umbilicus, forehead, nose, chin, urinary bladder and neck each one; ears, eyes, eyebrows, temples, shoulders, cheeks, axilla, breasts, inguinal regions, testicles, sides, hips, knees, elbows, upper arms, thighs etc. each two; fingers twenty, channels are the sub parts.



Notes

Section Two



Notes

**Terminal Exercise**

1. What are the sub body parts?
2. Discuss the different types of Asayas.

**Answer to Intext Questions****3.1**

1. *Pratyanga*
2. Seven
3. Seven hundred
4. Seven
5. Three and half *vyama*
6. Outward openings.

Foot note:-

Tvak (त्वक्) -skin

Kala (कला)- membranes

Asaya (आशय) -Viscera

Dhatus (धातु)- constituting material

Siras (सिरा) - blood vessels

Pesi (पेसी) - muscles

Snayu (स्नायु) - ligaments

Asthi (अस्थि) - bones

Sandhi (सन्धि) - joints

Marmans (मर्म) -vital spots

Dhamani (धमनी) – blood vessels

Dosas (दोसा) – substances vitiating the body

Malas (मल) - excretory substances



Notes

Srotas (स्त्रेतस) –opening

Kandaras (कण्डरा) -tendons

Jala (जाल) - networks

Kurcha (कूर्च) – brush like structure

Mamsa rajju (रज्जू) – facial bands for muscles

Sevani (सेवनी) - raphe

Sanghata (संघात) – joints made up of more than two bones

Simanta (सीमन्त) - suture

Yogavaha srotas (योगवह स्रोतस्)--complementary passages

Antra (आंत्र) -intestines

Asayas (आज्ञय) -viscera

Vattasaya (वाताशय) – site of vata

Pittasaya (पित्ताशय) - site of pitta

Kaphasaya (क्लाशय) – site of kapha

Raktasaya (रक्ताशय) – site of rakta

Amasaya (आमाशय) - Stomach

Pakvasaya (पक्वाशय) - Intestines

Mutrasaya (मूत्रशय) - Urinary bladder

Garbhasaya (गर्भाशय) - Uterus



Notes

7

MUSCULO-SKELETA SYSTEM

ASTHI (BONES), SANDHI (JOINTS), SNAYU, (LIGAMENTS), PESI (MUSCLE)

In the previous lesson we have learnt about the different parts of the body such as hands, feet, tongue, nose, ears, buttocks etc. it acquires the name sarira body. This has six parts, extremities four, trunk the fifth and head as the sixth one. In these body parts bones, joints, ligaments and muscles are very important structure and also play an important role in movement of the body. Musculo-skeletal system is made up of bones, joints, ligaments and muscles.



Objectives

After reading this lesson you will be able to :

- Understand the Musculo-Skeletal System
- Know the Asthi, sandhi, snayu, pesi, their types & important role in our body

4.1 Musculo-skeletal system

Musculo-skeletal system is made up of bones, joints, ligaments and muscles. It plays an important role in the body movement and locomotion.

4.2 Distribution of Bones

There are three hundred bones; of them one hundred and twenty in extremities. One hundred and seventeen in pelvic region, sides, back

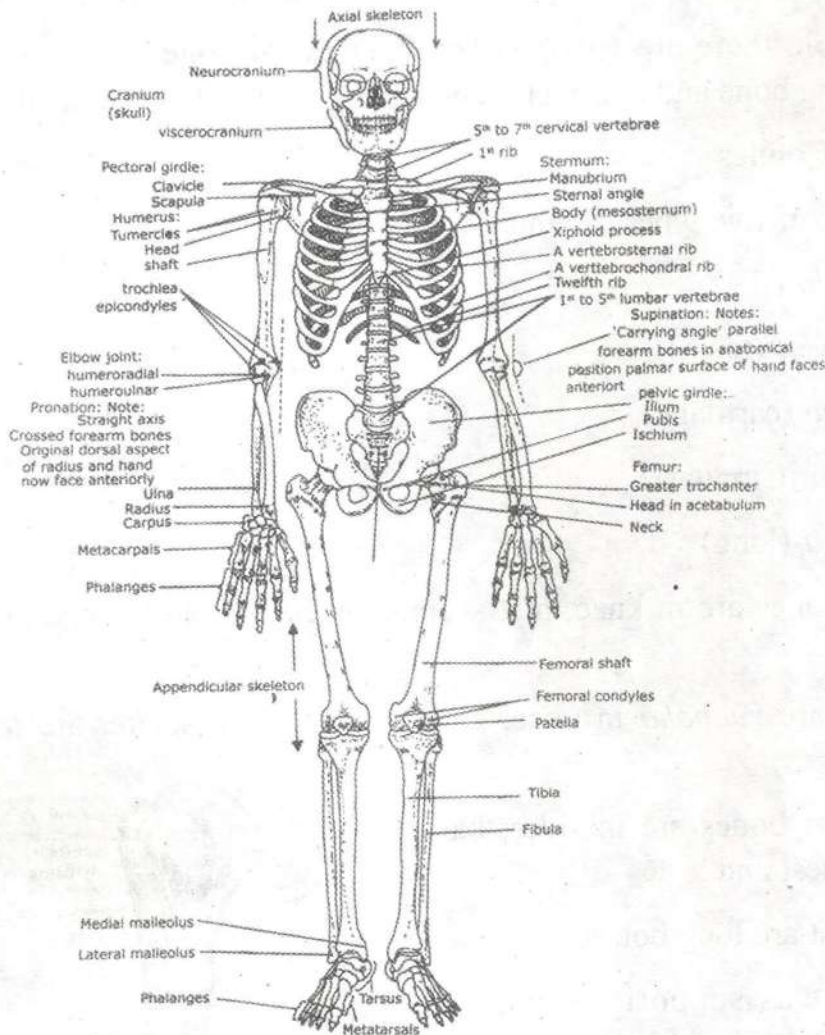


Fig. 4.1 : Showing Human Skeleton



Notes

and chest; above neck are sixty three.

In each toe of the foot there are three bones thus fifteen in total. Ten are in the sole, tarsus and ankle, one in heel, two in leg, one in knee and one in thigh:-thus thirty in total in one leg; the same are in the other leg and two arms.

In pelvic region, there are five bones out of which four are in anus, perineum and hips while one in sacral region. Thirty six are in one side and the same in the other; thirty are in back, eight in chest and two in scapular region. In the neck, there are nine bones; four are in *kanthanadi* (trachea), teeth have thirty two, three in nose, one in palate, one each in cheek, ear and temple and six in skull.

Section Two



Notes

In the sole there are five *salakas* (metatarsal bones); one is their supporting bone and two each in tarsal and ankle –thus ten in all.

Types of bones

There are of five types of bones:-

- *Kapala* (flat)
- *Ruchaka* (teeth)
- *Taruna* (cartilage)
- *Valaya* (Circular)
- *Nalaka* (long)
- Flat bones are in knee, hip, scapula, cheek, palate, temporal and skull;
- teeth are *ruchaka* in nose, ear, neck and eye socket are *tarun* cartilages;
- circular bones are in sides, back and chest and
- the rest are long bones.

Bones act as support for muscles which are attached along with blood vessels and ligaments.

4.3 Conjugation points (joints)

Joints are of two types – both movable and fixed are in extremities, jaws and waist.

Joints are two hundred and ten in number of them, sixty eight are in extremities, fifty nine in trunk and eighty three above towards neck; in each toe of the foot there are three while two in the great toe making a total of fourteen; one each in knee, ankle and hip thus

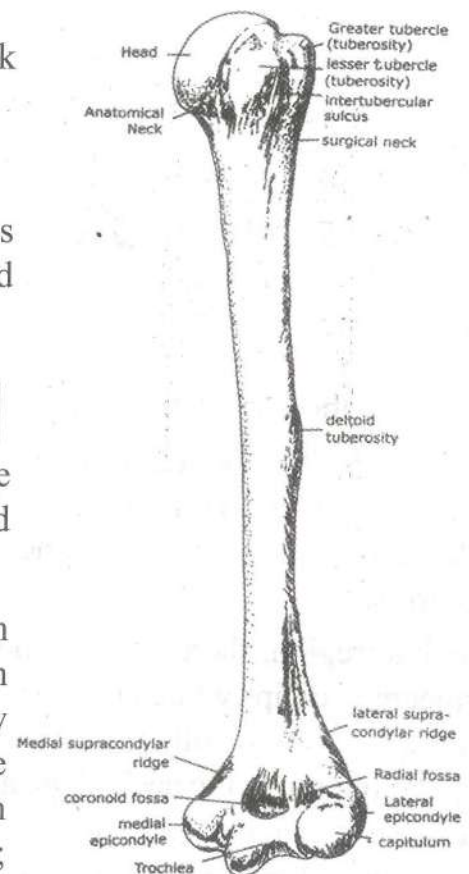


Fig. 4.2 : Left Humerus: anterior aspect



Notes

seventeen in one leg; same in the other leg and two arms; three are in pelvic bones, twenty four in vertebral column, same in sides, eight in chest, the same in neck, three in throat. eighteen in tubes attached to *hridaya-kloma* in the roots of teeth equal to (the number of teeth) thirty two, one each in *kakalaka* and nose, two in the circle of lids situated in eyes, one each in cheeks, ears and temples, and two jaw joints, two above eyebrows and temples, five in skull bones and one is in vertex.

Types of joints

Joints are of eight types:

1. Kora (hinge)
2. Udukhala (ball & socket)
3. Samudga
4. Pratara
5. Tunnasevani
6. Vayasatunda
7. Mandala
8. Sankhavarta

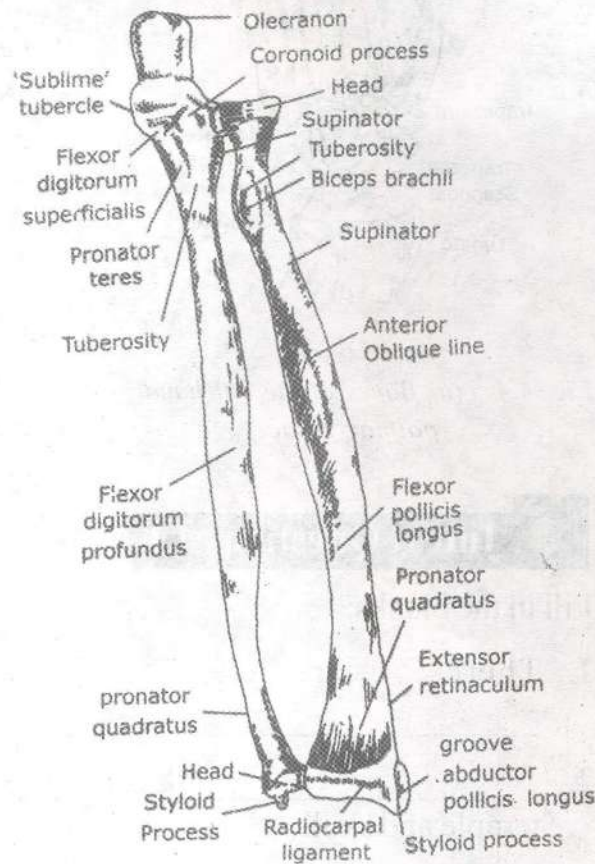


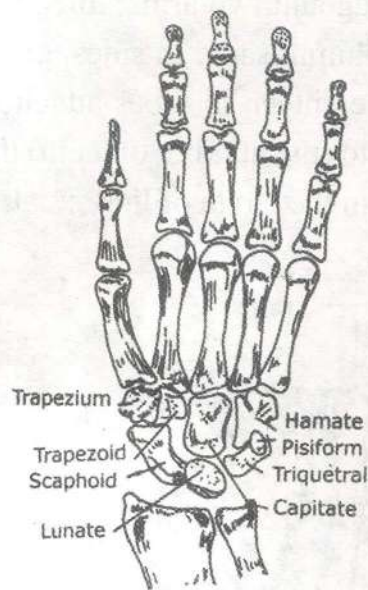
Fig. 4.3 : Left radius and ulna, from the front

Kora joints are found in fingers, wrists, ankles, knees and elbows; in axilla, hip and teeth are *udukhala* joints; *samudgas* are in scapula, anus, perineum and pelvis; *pratara*s are in neck and vertebral column; *tunnasevani* joints are in bones of skull and pelvis; *vayasatunda* is on both sides of jaw; *mandala* joints are in tubes of throat, eye and *hridayakloma* (trachea) *sankhavarta* joints are in *sringatakas* of ears.

Section Two

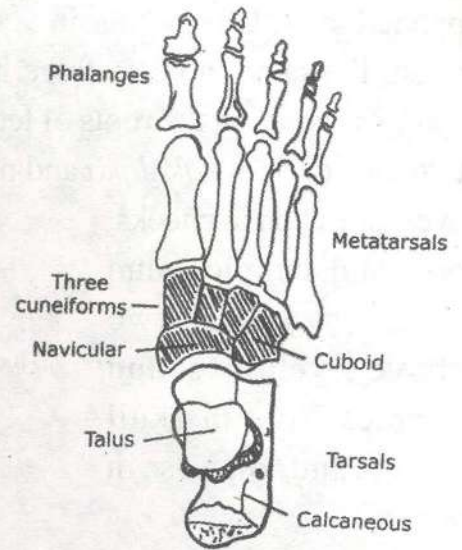


Notes



(a)

Fig. 4.4 : (a) Bones of the left hand : palmar surface,



(b)

(b) The dorsum of foot and toes



Intext Questions 4.1

Fill in the blanks:

1. There are 120 bones, present in _____.
2. _____ are in knee, hip, scapula, cheek, palate, temple and skull.
3. Joints are of _____.
4. *Kora* (dksj), *Udukhala* (mnw[ky), *Samudga* (lkeqnXk~), *Pratara* (izrj), *Tunnasevani* (rqUulsouh), *Vayasatunda* (ok;lrq.M), *Mandala* (e.My) and *Sankhavarta* ("ka[kkorZ) are the types of _____.

4.4 Snayu (ligaments)

Snayu (ligaments) are nine hundred. Of them six hundred are in extremities, two hundred and thirty in trunk and seventy above towards neck.



Notes

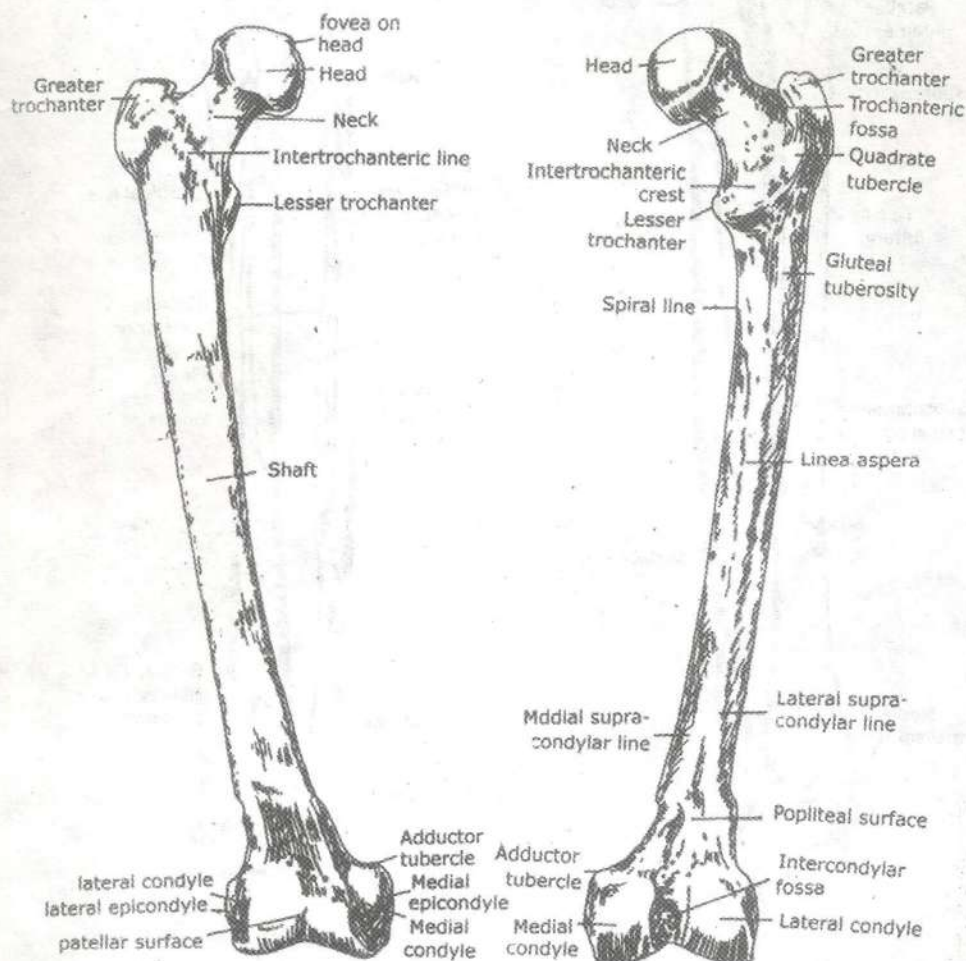


Fig. 4.5 : Right femur : A anterior aspect; B posterior aspect

Sixty ligaments are in lumbar region, eighty in the back, sixty in sides and thirty in chest. In neck, there are thirty six ligaments and thirty four in head. Bigger ligaments are known as kandara (tendon).

Snayu is of four types, they are branched, circular, flat and porous. In all extremities and all joints there are branched ligaments. All circular ligaments are known as kandara (tendon). Porous ligaments are found in end of stomach and intestines and also urinary bladder while flat ones are present in sides, chest, back and head. All joints in the body are tied with many ligaments by which persons are capable of bearing load.

Section Two



Notes

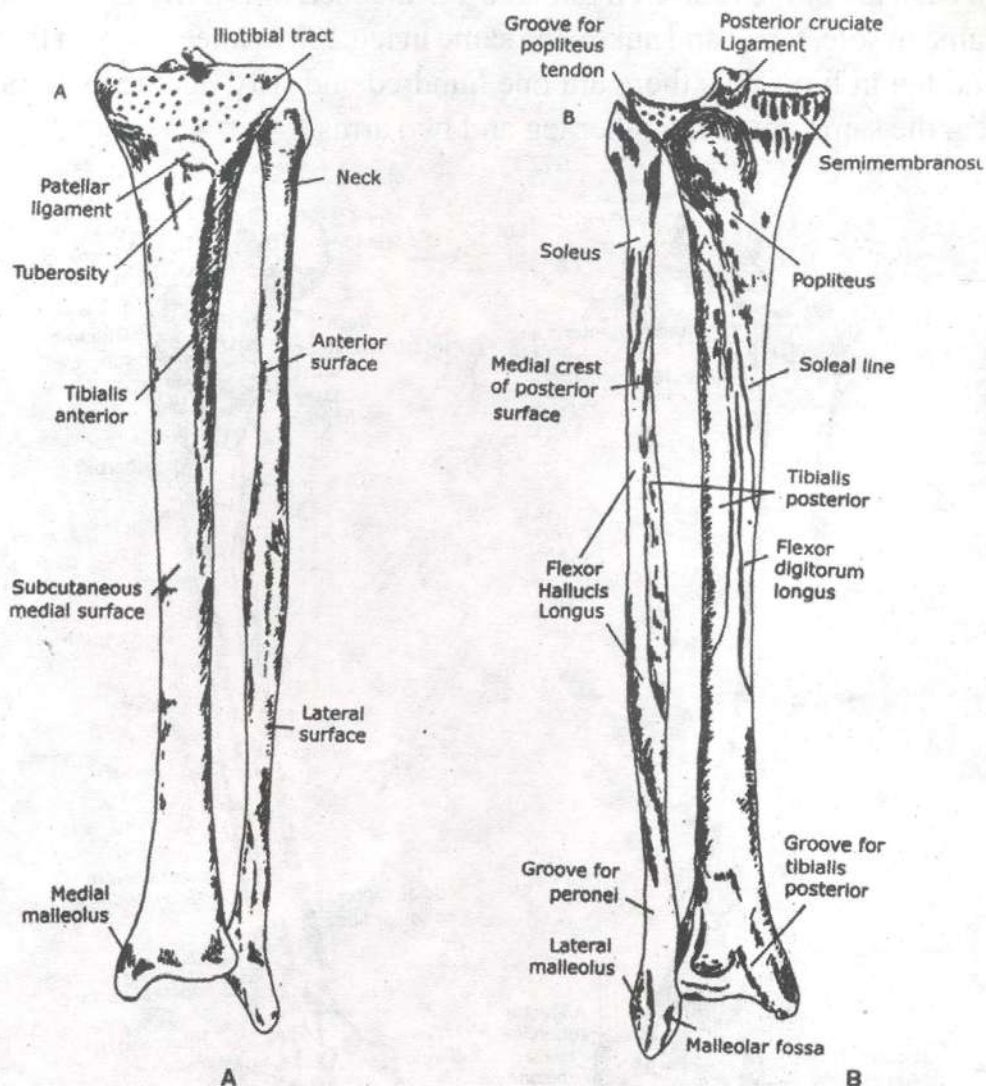


Fig. 4.6 : Left tibia and fibula: A from the front; B from behind

4.5 Pesi (muscle)

Pesi (muscle) are five hundred in number. Of them, four hundred are in extremities, sixty six in trunk and thirty four in neck and above. In each toe of foot, there are three muscles thus making total of fifteen, ten in forepart of foot, the same are attached to tarsal above feet, ten are in ankle and sole, between ankle and knee are twenty, five are in knee, twenty in thigh, ten in inguinal region –thus hundred in one leg; the same are in the other leg and two arms.



Notes

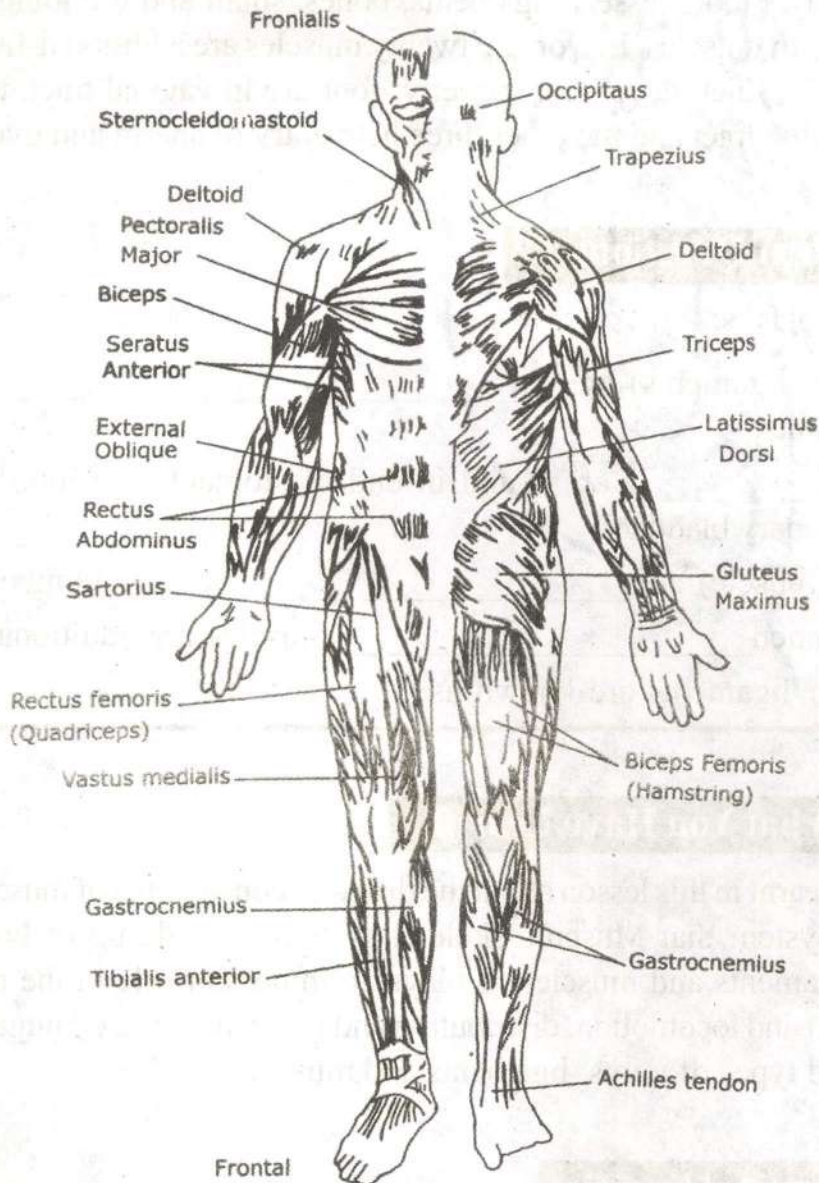


Fig. 4.7 : Diagram showing muscles of the body

There are three in anus, one in penis and another in raphe, two in testicles, in each buttock five, two in fundus of urinary bladder, five in abdomen, one in umbilicus., Five muscles are attached to each side of upper portion of the back, six are in sides, ten in chest, seven are around clavicle and shoulder, two in heart and stomach, six in liver, spleen and caecum. Four muscles are in neck, eight in jaws, one each in uvula and throat, two in palate, one in tongue, two each in lips, nose and eyes; four are in cheeks. Two in ears, four in forehead and one is in head.

Section Two



Notes

In the body, blood vessels, ligaments, bones, small and big joints are covered with muscles. In women, twenty muscles are additional-five in each breast which develop in puberty; four are in vaginal tract, three are in uterine tract and the other three help entry of sperm and ovum.



Intext Questions 4.2

Fill in the blanks:

1. *Snayu* (ligaments) are _____ in number.
2. _____ are found in end of stomach and intestines and urinary bladder.
3. *Pesi* (muscle) are _____ in number.
4. In women _____ muscles are additional.
5. Bigger ligaments are known as _____.



What You Have Learnt

We have learnt in this lesson about the different constituents of musculo-skeletal system that Musculo-skeletal system is made up of bones, joints, ligaments and muscles. It plays an important role in the body movement and locomotion, distribution and types of bones, conjugation points and types of joints, ligaments and muscles.



Terminal Exercise

1. Describe the types of bones.
2. Write down the types and number of joints.
3. Discuss the distribution of *snayu* (ligaments).
4. Discuss the distribution of *pesi* (muscles).
5. Describe the types of *pesi* (muscles).

**Answer to Intext Questions****4.1**

1. Bone
2. Extremities
3. Flat bones
4. Eight types

**Intext Questions 4.3**

1. *Samdhi* (joints)
2. Nine hundred
3. Porous ligaments
4. Five hundred
5. Twenty
6. *Kandara* (tendon)

Suggested Activity

- Make the chart of bones and joints.
- Make the illustration of different joints
- Assess your own joints according to what you have learnt in this lesson



Notes



Notes

8

MARMA VIGYAN

Marma are very important sites of body, and when get injured, may give rise to many complications, disability and death. These sites should be protected from injury and during operations. When these sites are treated with different procedures the body energy level gets high and a number of diseases can be treated or cured. This knowledge will help in *panchkarma* and *marma* therapy.

**Objectives**

After reading this lesson you will be able to:-

- Know the definition of *marma*
- Know the types of *marma*
- Identify the distribution of *marma* points on human body.
- Categorise the marma points
- Understand the effect of trauma on *marma* sites.

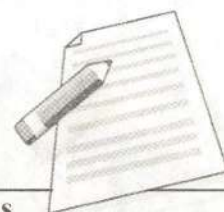
5.1 Marma

Marma are very important sites found in our body and when get injured, may give rise to many complications, disability and death. These sites should be protected from injury and during operations.

Description of *marma* points in the human body

According to *Maharshi Sushruta* there are 107 *marmas* in the human body. These are very important vital places. Any injury to these parts may lead to severe pain, disability, loss of function, loss of sensation (anesthesia).and death.

Section Two



Notes

S.N.	Name	No.	Location	Type	Resultant
1.	Kshipra (First intermeta carpal ligament)	2	Upper Extr.	Ligament	Delayed Fatal
2.	Kshipra (First intermeta-tarsal ligament)	2	Lower Extr.	Ligament	Delayed Fatal
3.	Talahridaya (Palmer aponeurosis)	2	Upper Extr.	Muscle	Delayed Fatal
4.	Talahridaya (Long planter ligament)	2	Lower Extr.	Muscle	Delayed Fatal
5.	Kurca (Carpo-metacarpal and intercarpal ligament)	2	Upper Extr.	Ligament	Disabling
6.	Kurca (Tarso-metatarsal and intertarsal Ligament)	2	Lower Extr.	Ligament	Disabling
7.	Kurcasiras (Lateral ligaments of the wrist joint)	2	Upper Extr.	Ligament	Painful
8.	Kurcasiras (Lateral ligaments of the ankle joint)	2	Lower Extr.	Ligament	Painful
9.	Manibandha (Wrist joint)	2	Upper Extr.	Joint	Painful
10.	Gulpha (Ankle joint)	2	Lower Extr.	Joint	Painful
11.	Indrabasti (Origin of Palmaris longus muscle)	2	Upper Extr.	Muscle	Delayed Fatal
12.	Indrabasti (Calf muscles)	2	Lower Extr.	Muscle	Delayed Fatal
13.	Kurpara (Elbow joint)	2	Upper Extr.	Joint	Disabling
14.	Janu (Knee joint)	2	Lower Extr.	Joint	Disabling
15.	Ani (Tendon of biceps muscle)	2	Upper Extr.	Ligament	Disabling

MODULE -1

Section Two



Notes

Certificate in Ayurvedic Therapy

16.	Ani (Tendon of quadriceps femoris muscle)	2	Lower Extr.	Ligament	Disabling
17.	Urv (Brachial artery, Basilic vein)	2	Upper Extr.	BloodVessel	Disabling
18.	Urvi (Femoral vessels)	2	Lower Extr.	BloodVessel	Disabling
19.	Kaksadhara (Brachial plexus)	2	Upper Extr.	Ligament	Disabling
20.	Vitapa (Inguinal canal/Ligament)	2	Abdomen	Ligament	Disabling
21.	Lohitaksa (Axillary vessels)	2	Upper Extr.	BloodVessel	Delayed Fatal
22.	Lohitaksa (Femoral vessels)	2	Lower Extr.	BloodVessel	Delayed Fatal
23.	Guda (Anal canal and anus)	1	Abdomen	Muscle	Fatal
24.	Basti (Urinary bladder)	1	Abdomen	Ligament	Fatal
25.	Nabhi (Umbilicus)	1	Abdomen	Blood Vessel	Fatal
26.	Stanamula (Internal mammary vessels)	2	Chest	BloodVessels	Delayed Fatal
27.	Hrdaya (Heart)	1	Chest	Blood Vessel	Fatal
28.	Stanarohita (Lower portion of Pectoralis major muscle)	2	Chest	Muscle	Delayed Fatal
29.	Apalapa (Lateral thoracic and subscapular vessels)	2	Chest	BloodVessel	Delayed Fatal
30.	Apastambha (Two bronchii)	2	Chest	BloodVessel	Delayed Fatal
31.	Katikataruna (Sciatic notch)	2	Back	Bone	Delayed Fatal
32.	Nitamba (Ala of the ileum/Ischial tuberosity)	2	Back	Bone	Delayed Fatal

Section Two



Notes

33.	Kukundara (Sacroiliac joints)	2	Back	Joint	Disabling
34.	Parsvasandhi (Common iliac vessels/ renal angle)	2	Back	BloodVessel	Delayed Fatal
35.	Brhait (Subscapular & transverse cervical arteries)	2	Back	BloodVessel	Delayed Fatal
36.	Amsaphalaka (Spine of the Scapula)	2	Back	Bone	Disabling
37.	Amsa (Coraco-humoral, gleno- humoral ligament/ Trapezius muscle)	2	Back	Ligament	Disabling
38.	Krkatika (Atlanto-occipital articulation)	2	Neck	Joint	Disabling
39.	Nila (Blood vessels of the neck)	4	Neck	BloodVessel	Disabling
40.	Matrka (Blood vessels of the neck)	8	Neck	Blood Vessel	Fatal
41.	Vidhura (Posterior auricular l igament/ Vessels)	2	Head	Ligament	Disabling
42.	Phana (Kiesselbach's plexus in little's area/Olfactory region of the nose)	2	Head	BloodVessel	Disabling
43.	Apanga (Zygomatico-temporal vessels)	2	Head	BloodVessel	Disabling
44.	Avarta (Junction of the frontal, molar and sphenoid bone)	2	Head	Joint	Disabling
45.	Utksepa (Temporal muscle and fascia)	2	Head	Ligament	Fatal after f.b.
46.	Sankha (Temples)	2	Head	Bone	Fatal

Section Two



Notes

47.	Sthapani (Nasal arch of the frontal vein)	1	Head	Blood Vessel	Fatal after f.b.
48.	Simanta (Cranial sutures)	5	Head	Joint	Delayed Fatal
49.	Sringataka (Cavernous and inter-cavernous sinuses)	4	Head	Blood Vessel	Fatal
50.	Adhipatik (Torcular herophilia)	1	Head	Joint	Fatal

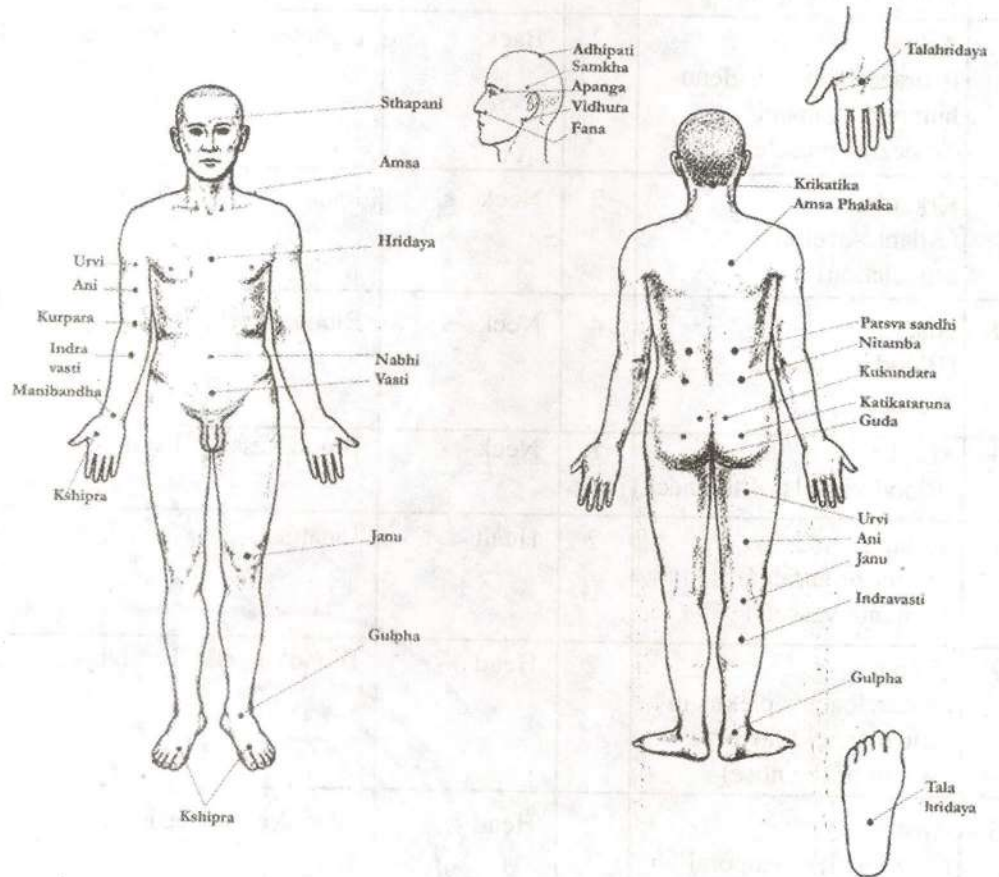


Fig. 5.1 : Some important Marma points in Human Body

5.2 Distribution of Marma Points in the Human Body

There are eleven *marma* points in one leg. The same number is present in the other leg. So, there are a total of forty-four *marma* points including

both the upper and lower extremities. There are twelve *marma* points in the thorax and abdomen. Fourteen *marma* points are present in the back. Thirty-seven *marma* points are located above the clavicular region (neck and head).

In the lower extremities *kshipra*, *talahrdaya*, *kurcha*, *kurchashira*, *gulpha*, *Indravasti*, *janu*, *ani urvi*, *lohitaksha* and *vitapa* are situated. In the upper extremity, in the place of *vitapa* there is *kakshadhara marma*.

In the abdomen and thorax, *guda*, *vasti*, *nabhi*, *hridaya*, *stanamula*, *stanarohita*, *apastambha*, *apalapa* are present. These are a total of twelve *marmas*. In the back *katikatarun*, *kukundar*, *nitamba*, *parsva sandhi*, *vrihati*, *ansaphalaka*, *amsa* are located. There are a total of fourteen *marmas* present in the back.

In supraclavicular region, *dhamani*, *matrika*, *krikatika*, *vidhura*, *phana*, *apanga*, *avarta*, *utkshepa*, *sthapani*, *simanta* and *adhipati* are situated. There are a total of 37 *marma* points in the supraclavicular region.



Intext Questions 5.1

Match of the following:

Region of body

- (a) Neck
- (b) Abdomen
- (c) Back.
- (d) All four extremities
- (e) Chest
- (f) Head

Marma

- 1. *Kshripa*
- 2. *Adhipati*
- 3. *Nabhi*
- 4. *Krikatika*
- 5. *Katiktaran*
- 6. *Hridaya*



Notes



Notes

5.3 Categorisation of Marma points

1. Structural categorization:

According to anatomical consideration *marmas* can be divided into *mansa-marma*, *sira-marma*, *snayu-marma*, *sandhi-marma* and *asthi-marma*. *Talahridaya*, *Indra vasti*, *guda* and *stanarohit marmas* are ***mansa marma* (muscular vital point)**.

Neela, *dhamani*, *matrika*, *sringataka*, *apanga*, *sthapani*, *phana*, *stanamula*, *apalapa apastambha*, *hridaya*, *nabhi*, *parsvasandhi*, *vrihati*, *lohitaksha* and *urvi* are ***sira marma* (vascular vital point)**

Ani, *vitapa*, *kakshadhara*, *kurcha*, *kurcha sira*, *vasti*, *kshipra*, *amsa*, *vidhura*, *utkshepa*, are ***snayu marma* (ligamentous vital point)**

Katikataruna, *nitamba*, *amsaphalaka*, *samkha*, are ***asthi marma* (bony vital point)**.

Janu, *vitapa*, *simanta*, *adhipati*, *gulpha*, *manibandha*, *kukundara*, *avarta* and *krikatika* are ***sandhi marma* (articular vital point)**.

2. Physiological categorisation:

On the basis of properties they can be categorized into *saumya*, *vayavya* and *agneya* and *saumyagneya marmas*. Fatal marmas are *agneya* in nature. Injury to these points may lead to sudden decline in vitality and death. Delayed fatal *marmas* are *saumyagneya*: there is sudden decline in *agneya* property but there is insidious decline in *saumya* property; so there is delay in fatality and death takes place after some time. In cases where fatality occurs after removal of the foreign body the *marmas* are *vayavya* (ok;o;) in nature. After injury there is cessation of air and removal of foreign body may lead to sudden loss of internal air and death. But if the foreign body is not removed and the wound heals spontaneously and the foreign body falls off by itself then the effect is not fatal.

Disabling *marmas* are *saumya* in nature. *Soma* is stable and cold. It

protects life. Any injury to these parts is not fatal but may lead to disability. Painful *marmas* are combination of *Agni* and *vayu* properties. Any injury to these points may lead to severe pain.

3. Topographical categorisation:

According to site, *marmas* are situated at *udara* (thorax and abdomen), *prishtha* (back), *shakha* (extremities) and *urdhvajatru* (neck and head) region.

The juncture of *mamsa sira*, *snayu*, *asthi* and *sandhi* is known as *marma*. It is also known as *jeevasthana* and *pranayatana*. This concept of *marma* is the basis of all martial arts and acupuncture/acupressure anesthesia. According to *Susruta samhita*, due to injury of *mamsa marma*, there may be loss of touch sensation. By using this information, local anesthesia can be produced by irritating the *mamsa marma*.

4. Categorisation according to effect of Trauma:

These *marmas* can be categorized in to 5 groups according to the effect of trauma on it.

- *Sadya pranahara* (fatal) *marma* -19
- *Kalantera pranahara* (delayed fatal)- *marma*)-33
- *Vishalyaghna* (fatal after removal of foreign body) *marma* - 3
- *Vaikalyakara* (disabling) *marma* -44
- *Rujakara* (painful) *marma* - 8

It has been said that all the five basic body elements are involved in the *marmas*. In the fatal point's vein, ligament, muscle, bone and joint all are combined. When all these fractions are present in less quantity or one fraction is absent then it is known as delayed fatal *marma*. If two fractions are absent it is known as the *marma* which is fatal after removal of foreign body. If three fractions are absent then these points are known as disabling *marmas*. If only one fraction is available then these points



Notes

Section Two



Notes

are known as painful *marmas*.

Shringataka, adhipati, samkha, matrika, guda, hridaya, vasti and *nabhi*: these 19 vital points are fatal. Any injury to these points may lead to death.

Stanamula, stanarohita, apalapa, apastambha, simanta, talahridaya, kshipra, Indra vasti, katikataruna, parsva sandhi, vrihati and *nitambha* are 33 vital points which are delayed fatal. Any injury to these points may cause fatality, though after delay.

Utkshepa and *sthapani marma* are fatal after removal of foreign body which caused injury. *Lohitaksha, janu, urvi, kurcha, vitapa, kurpara, kukundar, kakshadhara, vidhura, krikatika, amsa, amsa phalaka, apanga, neela, manya, phana* and *avarta* these 44 vital points are disabling. Any injury to these points may lead to disability.

Gulpha, Mani bandha, kurcha shira, and these eight points are painful. Any injury to these points may lead to severe pain. Marma is the combination of *mansa, sira, snayu, asthi* and *sandhi*. Naturally these are life spots. According to Vagabhatta those places where any injury may lead to different kinds of pain and tremors are known as *marmas*.



Intext Questions 5.2

- (i) The number of *marmas* in one leg is _____.
- (ii) _____ *marma* points are located about the clavicular region (neck and head).
- (iii) There are _____ *marmas* present in the human body.
- (iv) The juncture of *mansa, sira, snayu, asthi* and *sandhi* is known as _____.

(v) Vaikalyakara (disabling) marmas are _____ in number.



What You Have Learnt

In this lesson we knew that Marma are very important sites, found in our body and when get injured, may give rise to many complications, disability and death. These sites should be protected from injury and during operations. We have also learnt its number and distribution in the body, structural, topographical and physiological categorization and effect of trauma on these vital points.



Terminal Exercise

1. Discuss types of *marma* according to fatality.
2. Discuss the quality of *sadyopranahara* (fatal) *marma*.
3. Compare the important *marmas* with anatomical structures.



Answer to Intext Questions

5.1

- (a) 4
- (b) 3
- (c) 5
- (d) 1
- (e) 6
- (f) 2

5.2

- (i) eleven



Notes

Section Two**Notes**

(ii) thirty seven

(iii) hundred and seven

(iv) *marma*

(v) forty four

Suggested Activity:

- Assess the different marma points on your own body and make the chart of marma points

9

CAUSES OF DISEASE



Notes

Ayurveda is one of the most ancient systems of medicine in the world. Ayurveda has conceived that the primary cause of all diseases is the failure of harmony between the individual and its environment i.e.- Loka and Purusha. Fundamentally the Loka-Purusha interaction takes place at the level of three factors viz- Kala/time factors and its influences, Buddhi/intellect of man and Indriyarth/subject of the five sense organs. The normal functions of these factors are the important attributes of healthy life process. But their abnormal functions are considered the primary causes of all diseases.

This lesson presents general concept of disease, classification of etiological factors, classification of disease, site of disease along with concept of infectious disease in Ayurveda.



Objectives

After reading this lesson you will be able to:

- Understand the basic concept of manifestation of diseases;
- Know the primary causes of ill health;
- Classify etiological factors;
- Learn the way of classification of disease;
- Identify the concept of mode of spread of infectious disease.

Section Three



Notes

1.1 Basic concept of disease

Ayurveda propound the theory of *Svabhavoparamavada*. It indicates that a living being has natural ability to heal itself and to recover from disease. The *Prakriti* or the natural life process has always an upper hand over *Vikrit* or disease, *Duhkha* or suffering. Natural life process always tries to bring back the state of health, from *Vikriti* to *Prakriti*. There is no need of a doctor or medication to treat the disorder. If they are required,¹(Footnotes) they just help the nature, in their normal process of self healing.

Besides this, Ayurveda has stressed a fundamental theory of *Loka-Purusha-Samya* suggesting a harmony ² of the nature of an individual living being with that of the universe or the environment. As a matter of fact it suggests that the individual living being is the mirror image of the universe. This continuous interaction of the nature and individual is responsible for upholding³ the living being in the state of health. When the harmony between nature and individual is disturbed, it causes variety of health related disorders. In spite of rich resources of natural resistance and body immunity i.e. *Vayadhikshamitva*, people do suffer from a variety of mental and physical disorders. These disorders need medicinal intervention.

Ayurveda has conceived that disease is a state of imbalance or deranged function of *Dosha*, *Dhatu* and *Mala*. Here *Dosha* refers to body humors, *Dhatu* to the tissue component and *Mala* to the waste product. The final stage of disease is mainly influenced by the *Adhishthana* i.e.- principle seat of disease.

Ayurveda also has another concept of disease on the basis of fundamental etiology⁴. There is a situation where a disease can be result of action of past life i.e. *Karma*. In case of *Karmaja vyadhis* i.e. genetic and hereditary disorders; one does not find a secondary cause and such type diseases usually do not respond to the *Yuktivyapasraya Chikitsa*. Diet, drug and other therapeutic intervention is related to *Yuktivyapasraya Chikitsa*. However, *Karmaja vyadhis* may be responding to *Daivavyapasraya Chikitsa* *Daivavyapasraya Chikitsa* comprises of *Mantras*, *Japas*, *Tapas*, and *Mani dharana*.

Besides the *Karmaja vyadhis*, an individual may suffer from certain



Notes

acquired diseases. These are considered as a result of improper⁵ interaction of an individual with his environment.

Ayurveda also conceives of disease as: -

- *Adhibhautika*: The disease produced by Tridosa, Raja and Tama.
- *Adhidaivika*: The disease produced by external sources.
- *Adhyatmika*: The disease produced by super natural power.

The *Loka* and the *Purusha* interact through the three fundamental factors viz-

1. *Kala* : Rhythm of time/seasons.
2. *Buddhi* : Intellect.
3. *Indriyarth* : Object of senses.

The balanced exposure of kala, buddhi and indriyarth is known as *Samayoga*. This is necessary for the existence of an individual. But *Ayoga*, *Atiyoga* and *Mithyayoga* i.e. under, over and perverted exposure of same factors play an important role in the pathogenesis and precipitation different diseases..

- 1 Warranted- required
- 2 Uniformity- harmony
- 3 Upholding- maintaining
- 4 Etiology- cause of disease
- 5 Unwholesome- improper
6. Pathogenesis

Kalaparinama

The time rhythm / season is an important health risk factor. It is described in terms of *Adana Kala*- a period of absorption, and *Visarga kala*, a period of liberation, *Shadritu* and the diurnal rhythms. These influence the biological clock system of the human being producing wide range of physiological changes. The normal *rhythm* of Doshas in relation to different component of time factor is given in following table.

Section Three



Notes

Time factors	Excitation of Vata	Excitation of Pitta	Excitation of Kapha
Principal Season	Rainy- <i>Varsha ritu</i>	Autumn- <i>Sharad ritu</i>	Spring- <i>Vashant ritu</i>
Diurnal variation	Afternoon and early night	Mid day and Mid night	Forenoon and Late night
Age	Old age	Adult age	Young age
Meals	After complete digestion of food	During the digestion of food	Just after taking the meals

Doshika- rhythm and disorders in relation to different seasons

S.No.	Season i.e. Ritu	Doshika - rhythm and disorder
1.	<i>Shishira</i>	Accumulation of Kapha.
2.	<i>Vasanta</i>	Excitation of Kapha, disorder like common cold, coughing, sinusitis, and Asthma.
3.	<i>Grishma</i>	Pacification of Kapha, accumulation of Vatr
4.	<i>Varsha</i>	Accumulation of Pitta, and excitation of Vata- disorder like joint pain, joundice, diarrhoea etc.
5.	<i>Sharad</i>	Pacification of Vata and excitation of Pitta- Paittik disorders like hypertension, skin diseases, fever etc.
6.	<i>Hemanta</i>	Accumulation of Kapha, pacification of Pitta

Prajnaparadha

This is the second generic cause of disease. Improper action of intelligence, speech and body by an individual leads to *Prajnaparadha*. A variety of informational diseases and cognitive disorders are the usual result of *Prajnaparadha*. Besides this, it may also contribute to other kinds of disorder and habits such as-

- Physical ailment.
- Road accidents.
- Infections.
- Unhealthy habits.
- Drug abuse.

Asatmyendriyarth samyoga

This is the third fundamental cause of disease. Due to *Ayoga*, *Atiyoga*,



Notes

and *Mithyayoga* of the sensory organs i.e.- eye , ear, nose, tongue and skin- - a state of stress is created which leads to a disorder directly or renders the individual susceptible to different diseases.

Examples of effect of stressful contact with sense objects

1. Impairment of auditory perception may lead to development of disorder of hearing like deafness and ringing in the ear,.
2. Impairment of tactile i.e. touch perception may lead to development of disorder of touch senses and skin, like- numbness, burning, tingling sensation etc.
3. Impairment of visual perception may lead to development of disorder of vision and eye, like- blindness, blurred vision, xerosis i.e.- dryness of eye etc.
4. Impairment of taste perception may lead to development of disorder of taste senses and tongue, like- loss of sense of taste, change in the taste, dryness of tongue etc.
5. Impairment of olfactory perception may lead to development of disorder of sense of smell and nose, like- loss and change in the sense of smell, dryness of nose etc.

1.2 Classification of etiological factors:

Etiological factors have been critically examined in Ayurveda in philosophical and logical spirit. A short account of etiological factors is given below:

1. **Immediate cause** – *Sannikrshita* : It is that factors which vitiates the Dosha directly causing the disease and does not require its accumulation for a longer duration. For example the excitation of Doshas in relation to day or night and digestion of food may be considered as the immediate cause of diseases.
2. **Distant cause** – *Viprakshta* : The factors which take long time to manifest the disease are considered to be the distant cause. For example there is accumulation of Kapha in winter (Hemanta ritu) and the diseases of Kapha are common in spring season. In this case Hemanta ritu is a distant cause in the causation of the diseases.
3. **Potent cause**- *Pradhanika* : The strong factors which are sure to

Section Three



Notes

produce the disease are known as potent cause e.g. - poisons alcohol and tetanus etc.

4. **Abortive cause- Vyabhichari:** If the cause is so mild and it has a minimal capacity to produce the disease. Such types of causative factors are known as Vyabhichari. Sometimes, these factors may also help in developing resistance against diseases.
5. **Factors exciting *Dosha*- *Dosha hetu* :** Factors which produce the disease by exciting *Dosha* are considered in this group.
 - Food and drinks having bitter, astringent and pungent taste are known to excite Vata dosha. Suppression of natural urges, violent exercise, excessive coitus, excessive study, *Kama*, *Shoka*, and *Bhaya* etc leads to vitiation Vata dosha.
 - Food and drinks having sour, salt and pungent taste are known to excite Pitta dosha in the body. Anger, grief, and fright, unnatural modes of sexual indulgence and excessive exposure to the sun are also cause of the excitation of Pitta dosha.
 - Food and drinks having sweet, sour and salty taste are known to excite *Kapha dosha* and excessive sleep in day, avoidance of sexual contact, etc may also lead to vitiate *Kapha dosha*.
6. **Factors causing specific disease-*Vyadhi hetu*:** The factors causing specific diseases are enlisted in this group e.g. - the persons who are in the habit of taking earthen pieces due to perverted appetite develop intestinal parasitic infestation or a person coming in contact of a person suffering from infectious disease suffers from the same disease.
7. **Factors contributing both in excitation of *Dosha* as well as causation of disease- *Ubhaya hetu*:** Factors which vitiate the *Dosha* as well as simultaneously produce specific diseases are considered in this group e.g. riding on horse or on camel excite Vata dosha as well as it is specific for producing gout.
8. **Causative and precipitating factors- *Utpadaka hetu*/*Vyanjakahetu* :** Factors which essentially vitiate the *Dosha* or produce the disease are known as **causative factors**. On the other hand those factors which help in the manifestation of symptoms or



Notes

attacks are known as **precipitating factors** e.g. exposure to cold causes inflammation in the sinuses which is likely to aggravate Kapha but the exposure to sun rays in those cases precipitates headache probably by liquefying of *Kapha*. In this, causative factor is exposure to cold and precipitating factor is exposure to sun.

9. **External and internal factors-** *Vahya* and *Abhyantara hetu*: Foods and drinks, behavior and seasonal changes are supposed to be the external causes of diseases; on the other hand vitiated *Doshas* and *Dushyas* are the internal causes of diseases.
10. **Natural changes in bodily *Dosha*- *Prakrita***: Accumulation, vitiation and pacification take place in way of natural diurnal rhythm.
11. **Unnatural changes in bodily *Dosha*- *Vaikrita***: Accumulation, vitiation and pacification take place in unnatural diurnal rhythm, which may lead to variety of diseases.
12. **Role of disease in the etiology of other diseases-** *Nidanarthakara roga*: Normally the disease is caused by the vitiation of *Dosha* which may subside by proper treatment or by natural efforts. If it does not subside it may remain life long in chronic form or it may prove fatal to the patient. But one disease may also produce the other diseases. This is known as *Nidanarthakara roga*.

1.3 Classification of disease

In Ayurvedic texts several classification of disease has been described.

1. On the basis of etiological factors diseases may be of two types-
 - *Nija*: arises from internal (endogenous) source, e.g. - *Jvara* - fever, *Asthi roga*- joint problems, *Madhumeha*- diabetes mellitus, *Kasa*- bronchitis.
 - *Agantuja*: arises from external (exogenous) source, e.g.- Traumatic disorders and infectious diseases.
2. On the basis of therapeutic intervention disease may be of two types-
 - *Shashtra sadhya* cures by surgical intervention, e.g. *Arsha*- piles, *Bhagandara*- fistula, *Vrana*- wounds etc.

Section Three



Notes

- *Snehadikriyasadhya* - cures by medical intervention, eg.- *Asthi roga*- diseases of joints, *Tvak roga*- diseases of skin etc.
3. Diseases have been further classified on the basis of prognosis.
 - *Sadhya* - curable disease, e.g.- Fever, diarrhea, vomiting.
 - *Asadhy* - incurable disease, e.g.- *Amavata* - rheumatoid disease.
 - *Mridu* - mild form of disease, e.g.- *Pratishyaya* - common cold.
 - *Daruna* - severe form of disease, e.g.- *Rajayakshma* - tuberculosis.
 4. According to the site of the lesion diseases may be of two types-
 - *Manasika*: psychic disorders, e.g. - *Unmada*-insanity, *Apasmara*-epilepsy.
 - *Sharirika*: somatic disorders, e.g. - *Jvara*, *Shvasa* - asthma etc.
 5. On the basis of seat of origin it is of two types-
 - *Amashaya samuthya* - diseases arising from upper gastrointestinal tract eg.- *Amlapitta* - hyperacidity and acid peptic disorders, *Jvara* - fever etc.
 - *Pakvashaya samuthya* - diseases arising from lower part of gastrointestinal tract, eg.- *Grahani roga*- irritable bowel syndrome, *Arsha* - Piles etc.
 6. Again diseases can be divided into two on the basis of *Doshika* involvement-
 - *Samanyaja vikara* : It is 48 in number according to a combination of vitiation of doshas, e.g. *Grahani roga*, *Kasa*, *Shvasa*, *Rajayakshma*, *Kushtha*, etc.
 - *Nanatamaja vikara*: It is 140 in number according to vitiation of one dosha, they are-
 1. *Vataja* e.g. dryness of body part, pain in the body and its part
 2. *Pittaja* e.g. fever, burning sensation, hyper acidity etc.
 3. *Kaphaja* e.g. heaviness in the body, reduced appetite etc.

6. On the basis of dietetic incompatibility diseases is again divided into two-

- *Santarpanajanya vikara* i.e. - excess intake of high calorie rich diet: *Prameha*-(diabetes), *Pramehapidika* (diabetic abscess), *Pauroga* - (anemia), *javara*- (fever), *kushtha* (skin disorders), *atisthaulya*- (obesity disorders), etc.
- *Apatarpanajanya vikara*- i.e.- excess intake of low calorie diet : *Agni, bala, varna, oja, shukra and mamsa kshaya* (emaciation), *kasa*-(cough), *aruci*- (anorexia), *unmada* - (insanity), *hridayaroga*- (cardiac disease) , *sandhishula*- (joint pain) etc.



Notes

1.4 Classification of diseases in Ayurveda

S.No.	Basis of classification	Division components of diseases
1.	Etiological factor	2. <i>Nija</i> - arises from endogenous source <i>Agantuja</i> -arises from exogenous source
2.	Therapeutic intervention	2. <i>Shashtra sadhya</i> - cures by surgical intervention. <i>Snehadikriyasadhya</i> - cures by medical intervention.
3.	Prognosis	4. <i>Sadhya</i> - curable disease <i>Asadhya</i> - incurable disease. • <i>Mridu</i> - mild form of disease. <i>Daruna</i> - severe form of disease
4.	Site of the lesion	2. <i>Manasika</i> - psychic disorders. <i>Sharirika</i> - somatic disorders.
5.	Seat of origin.	2. <i>Amashaya samuthya</i> - diseases arises from uppergastro- intestinal tract. <i>Pakvashaya samuthya</i> - diseases arises from lower part of gastrointestinal tract.
6.	Doshika involvement	2. <i>Samanyaja vikara</i> - diseases of combined Doshas <i>Nanatamaja vikara</i> - diseases of particular Dosh, Vata, Pitta, Kapha.
7.	Dietetic incompatibility	2. <i>Santarpanajanya vikara</i> - excess intake of high calorie rich diet <i>Apatarpanajanya vikara</i> - excess intake of low calorie rich diet

e.g. - epidemics, lightning, drought, floods etc.

7. Svabhavabala pravritta (natural origin): This type include diseases which arises due to natural, organic, and functional changes in the body and mind such as due to senility, death, thirst, sleep etc.

1.5 Concept of infectious disease in Ayurveda

In Ayurveda the concept of infectious disease is clearly mentioned in *Susruta samhita*. Skin diseases, variety of fever, tuberculosis and conjunctivitis have been mentioned as an example of common infectious disease. Besides, the naming of infectious disease, modes of spread of infectious disease is also mentioned as given below.

- Sexual contact- *Prasanga*
- Body contact- *Gatrasparsha*
- Inhalation- *Nihshvasa*
- Sleeping together in the same bed- *Sahashaiya*
- Eating together (from same utensils or same eatables)- *Sahbhojana*
- Using the cloth, towels, garlands and cosmetics of others-

Vastamalyanulepanata

1.6 Mode of spread of Common infectious disease

S.N.	Mode of spread	Infectious disease
1.	<i>Prasanga</i> -Sexual contact	AIDS, Sexually transmitted diseases
2.	<i>Gatrasparsha</i> - Body contact	Contact dermatitis, manifestation of worms, skin and eye allergy.
3.	<i>Nihshvasa</i> - Inhalation	Tuberculosis, common cold and fever (flu).
4.	<i>Sahashaiya</i> - Sleeping together in the same bed.	Variety of skin disorders.
5.	<i>Sahbhojana</i> -Eating together.	Jaundice, gastroenteritis
6.	<i>Vastamalyanulepanata</i> -Using the cloth, towels, garlands and cosmetics of other	Dermatitis, skin allergy



Notes



Notes



Intext Questions 1.1

(A) Write whether the following statements are true or false

1. *Natural* life process always tries to bring back the state of health.
2. *Karmaja Vyadhis* are result of action of present life.
3. The principle causes of ill health are four in number.
4. The poisons and Tetanus are the important example of potent cause of disease.
5. In Ayurveda variety of fever, T.B. And conjunctivitis have been mentioned as the common infectious disease.

(B) Fill in the blanks

1. The diseases, which are caused by invisible malignant forces is known as _____.
2. The factors, which vitiate the _____ as well as simultaneously produces _____ are considered as _____.
3. *Prajnaparadha* is related to _____ action of _____ and body of an individual.
4. Uniformity between individual living being and universe or environment is known as _____.
5. Excitation of Pitta takes place in _____ Ritu.



What You Have Learnt

In this lesson we studied about the concept of disease in Ayurveda and classification of diseases in Ayurveda & their causes. We knew that several classification of disease has been described in Ayurvedic texts. We have also known it that what infectious disease is. In Ayurveda the concept of infectious disease is clearly mentioned in Susruta samhita.

Skin diseases, variety of fever, tuberculosis and conjunctivitis have

been mentioned as an example of common infectious disease. Besides, the naming of infectious disease, modes of spread of infectious disease is also mentioned as given below.

- Sexual contact- Prasanga
- Body contact- Gatrashparsha
- Inhalation- Nihshvasa
- Sleeping together in the same bed- Sahashaiya
- Eating together (from same utensils or same eatables)- Sahbhajana
- Using the cloth, towels, garlands and cosmetics of others- Vastamalyanulepanata



Terminal Exercise

1. Describe the concept of disease in brief and give detail account on principle causes of ill health.
2. What are the common etiological factors described in Ayurveda?
3. What is Prajnaparadha explain it, and give brief note on classification of diseases.
4. Write short note on-
 - (a) Infectious disease (b) *Adibala pravrittaja*
 - (c) *Nidanarthakara roga* (d) *Trayoroaga marga*



Answer to Intext Questions

- (A) True and False: 1. True 2. False 3. False 4. True
5. True.

(B) Fill in the blanks

1. *Paishacakrita*.
2. *Dosha*, Specific diseases, *Ubhaya hetu*.
3. Perverted, intelligence, speech.
4. *Loka-Purusha Samya*.
4. *Sharad*



Notes

Section Three



Notes

Besides these etiological factors Sushruta has suggested that etiological factors may be constitutional, or environmental; these alone or in combination produce the disease, which can be resolved under the following seven categories.

1. Adibala pravritta (genetic origin): In this category the origin of diseases is specifically related to defect in *Shukra* i.e. - sperm or *Shonita* - i.e. - ovum. The disease like- Skin diseases, piles, asthma, diabetes, obesity, etc are the important example in this group.

2. Doshabala pravritta (constitutional origin): Such types of diseases are usually caused by vitiation of Dosha i.e. *Vata*, *Pitta*, *Kapha*, *Raja* and *Tama* respectively in this group. The diseases like- *Atisara*- (diarrhea), *Pandu* - (anemia), *Kamala* - Jaundice) etc.

3. Janmabala pravritta (congenital disorders): This kind of diseases results due to the conduct of the mother during the period of her pregnancy. This includes different types of defects such as congenital blindness, deafness, dumbness, nasal voice and dwarfism etc.

4. Sanghatabala pravritta (traumatic origin): In this category the diseases are resulting due external as well as internal injuries. These can be classified under two minor headings viz.

1. Diseases caused by external injuries e.g. - fracture and dislocation of bone and joint, perforation of intestine and wounds.
2. Diseases caused by the bite of a wild animal or a poisonous reptile, e.g. - hydrophobia, tetanus, etc.

5. Kalabala pravritta- (seasonal origin): This group includes diseases which are caused by physical changes such as variation in the atmospheric temperature, humidity etc incidental to changes in the seasons. i.e. - fever, common cold and gastrointestinal disorders.

6. Daivabala pravritta (spiritual origin): This category includes diseases which are caused by forces beyond human control. These are considered to be caused by providential dispensation or acts of God.



Notes

10

DISEASE PROCESS AND TYPES OF PATHOGENESIS

The Ayurvedic concept of the evolution of a disease is very complex with varied etiology. In Ayurveda *Vyadhi* or disease is a state in which body and mind feels pain and variety of discomfort. Disease is outcome of imbalance of bodily *Doshas* i.e. *Vata*, *Pitta* and *Kapha* and mental *Doshas* ie. *Raja* and *Tama*. The mode of spread of *Doshas* and development of disease is described in the form of six stages. It is known as *Kriyakala* in Ayurveda. It is a due time for therapeutic intervention. During the process of pathogenesis *Dosha* and *Dushya*; interact in two ways, viz-

1. *Samanya Samprapti*-

It reflects the pattern of interaction of *Doshas* and *Dushyas* in a particular disease.

2. *Vishishta Samprapti*

It reflects the understanding of the process of disease as well as different components of pathogenesis.



Objectives

After reading this lesson, you will able to:

1. Understand definition and basic consideration of pathogenesis ie. *Samprapti*.
2. Explain the six stages of disease.
3. Identify the pattern of *Dosha* and *Dushya* interaction.
4. Know the type of pathogenesis.



Notes

2.1 Basic accounts of pathogenesis:

When the etiological factors of the imbalance of doshas operate on the body the Doshas are excited and spread all over the body following certain body channels known as *Srotamsi*. Ultimately they involve certain tissue structure of a particular organ or system and produce the signs and symptoms of a particular disease. Such type of interaction is known as *Dosha-dushya- sammurcchana* in Ayurveda.

This interaction leads to the development of a special set of clinical manifestation which is the joint product of vitiated *Dosha*, the vitiated *Dushya* and vitiated *Adhishtans* i.e.- seat or organ involved. The process right from the vitiation of Dosha to the production of disease is known as *Samprapti*.

It deals with the body changes both in the clinical as well as sub clinical stages of the disease. The *Ayurvedic* texts describe vividly the sequence of events viz, *Nidana* causes, *Samprapti*- pathogenesis, *Purvarupa* appearance of prodromal features, and *Rupa-i*- appearance of main symptoms and signs of disease.

The concept of *Kriyakala*, presents a unique way of predicting the stages of progression of a pathology from a reversible pre-clinical stage to a manifest clinical stage open to further advancement of the disease with complications of irreversible nature. The fundamental philosophy behind the concept of *Kriyakala* is to advocate for an early diagnosis and appropriate therapeutic intervention at appropriate time in order to reverse the disease process.

The features of the six stages of the disease *Kriyakala* are as follows.

1. *Sanchaya* : Accumulation of Doshas to its own sites.
2. *Prakopa* : Excitation or aggravation of doshas to its own sites.
3. *Prasara* : Spread of aggravated Doshas from its own sites through body channels to the distant places.

Section Three



Notes

4. *Sthanasamshraya* : Localization of aggravated Doshas at the defective sites.
5. *Vyakti* : Manifestation of the disease.
6. *Bheda* : Further advancement of disease and its complications.

2.2 Types of Pathogenesis i.e. - Samprapti

The term *Samprapti* refers to the phenomenon of pathogenesis precipitated by way of aggravation and vitiation of *Doshas*, the pattern and nature of which may be according to the etiological factors responsible for the particular *Doshika* vitiation. After that they interact with the defective tissues or systems or organs and may lead disease. This entire process is known as *Samprapti*. It is of two types-

1. ***Samanya samprapti*** : It reflects the above mentioned six stages of disease manifestations. The characteristic features of the disease are in accordance with the pattern of Dosha-dushya interaction. The interaction of doshas and dushyas is ordinarily of two types:

- (i) ***Prakritisamasamaveta interaction*** : Less intensive and therefore is easily diagnosable as *vat*, *pitta*, *kapha* and their combinations.
- (ii) ***Vikritivisamasamaveta - fod interaction*** : More intensive combination of dosha and dushya and hence the disease is not easy to identify according to individual dosha and dushya. This is then categorized as a new clinical or organ-based name.

2. ***Vishishta samprapti*** : In order to understand the disease process fully for a correct diagnosis and treatment the components of pathogenesis are to be identified. Caraka has advised to examine the *Samprapti* from six aspects in a particular individual viz.

- (i) *Samkhya samprapti*
- (ii) *Vikalpa samprapti*
- (iii) *Pradhanya samprapti*

(iv) *Bala samprapti*

(v) *Kala samprapti*

(vi) *Vidhi samprapti*

(i) Samkhya samprapti i.e. types of the disease: In this case the types of diseases are classified on doshika basis. So by the assessment of doshas usually the type of diseases can be settled.

(ii) Vikalpa samprapti i.e. analysis of *Doshika* set up of disease: *Doshas* have different properties. Therefore it is necessary to identify the nature of vitiation of *Dosha* in terms of its properties in order to prescribe exactly specific remedies.

(iii) Pradhanya samprapti i.e. primary and secondary nature of *Dosha*: Usually more than one *Doshas* are involved in the pathogenesis of diseases. Among them one is likely to be predominant or primary and others may be secondary or less predominant. In such circumstances if the primary one is treated the secondary ones subside themselves.

(iv) Bala samprapti i.e. Severity of the disease: Some time the disease is very severe while at another time it may be mild. This is known as *Bala samprapti*. The *Bala* (severity or intensity) is directly proportional to the quantum of the etiological factors.

(v) Kala samprapti i.e. relation of the disease with time: Excitation of *Doshas* in relation to seasons, timings of food and age Is known as *kala samprapti*.

(vi) Vidhi samprapti i.e. sub-classification: It deals with several sub classifications based on etiology and prognosis.



Notes



Intext Questions 2.1

Select the right answer

1. The entire process from the vitiation of *Dosha* to the production



Notes

of disease is known as-

- (a) Vyadhi (b) Samprapti (c) Kriyakala (d) Prasara.

2. Kriyakala is of types.

- (a) 6 (b) 3 (c) 7 (d) 8

3. The quantum of etiological factors is accessed by-

- (a) *Vidhi samprapti* (b) *Kala samprapti* (c) *Bala samprapti*
(d) *Vekalpa samprapti*

4. The Dosha and Dushya have lost their identity in the process of disease. This is known as-

- (a) *Samkhya samprapti* (b) *Pradhanya samprapti*
(c) *Vikritavisamasamaveta samprati* (d) *Kala samprapti*.



What You Have Learnt

In this chapter we have studied about the evolution of disease in Ayurveda, how the Doshika rhythm is disturbed and it goes into six different stages. Beside this, we have also studied about the pattern of interaction of *Dosha* and *Dushya*, different types of pathogenesis during the process of production of disease as well as different components of diseases i.e.- involvement of *Dosha* and *Dushya*, Adhishtana of disease, types of disease etc.



Terminal Exercise

1. Define the pathogenesis i.e.- Samprapti, and give brief notes on its types.
2. What is the six stages of disease?
3. Give a detail description of Vishishta samprapti.
4. Write short notes on the following-
 - (a) Samanya Samprapti
 - (b) Vidhi Samprapti
 - (c) Vikalpa Samprapti
 - (d) Bala Samprapti

**Answer to Intext Questions**

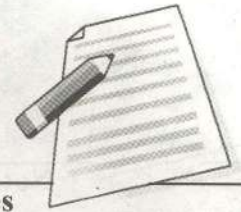
1. b 2. a 3. a 4. c

Footnotes:

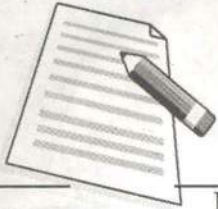
Etiology: causes of disease

Pathogenesis / samprapti: process of disease from the vitiation of dosha to the manifestation of disease

Prodromal: changes appearing in the system before the manifestation of the actual disease



Notes



Notes

11

EXAMINATION OF PATIENT AND DISEASE

Ayurvedic physician may not use the sphygmo-manometer to measure the blood pressure and the stethoscope to listen the sounds of heart, lung and gastrointestinal tract. Because their methods of examination of the patient and the diagnosis of the disease are so scientific to know over all component of remaining health and strength of disease. In fact, the diagnosis in Ayurveda is more detailed and more accurate in respect to medical science of today. The Ayurvedic texts have been described various techniques for the diagnosis of diseases i.e.- Ashtavidha Pariksha and for examination of patients i.e.- Dashavidha Pariksha.



Objectives

In this lesson you will be able to-

1. Understand the methods and site of examination of disease.
2. Understand the methods and site of examination of patient.
3. Evaluate the remaining health of the patient.
4. Evaluate the strength of disease and unwanted effect of disease.
5. Identify the diseases in different seasons and age group.

3.1 General concept

Medicine is known to be the combination of science and art. It is truer in the field of clinical diagnosis. The first and foremost thing the physician has to do is to win the confidence of his patient. Unless and until he

succeeds in doing so a patient may not reveal many of his ailments and personal problems which may be directly related with the disease process.

This may have more relevance in case of psychosomatic and psychiatric disorders. Charaka has emphasized that if a physician by virtue of his knowledge is not able to enter the mind of his patients, he can not treat him successfully.

During the course of clinical examination by descent manner, suitable conversation, and appropriate clinical examination, one can win the confidence which is more an art than the science.

3.2 Object of Rogi aur Roga pariksha

The fundamental object of clinical examination in Ayurveda is two folds-

- To evaluate the strength of the patient.
- To evaluate the nature and strength of the disease.

3.3 Techniques of clinical examination:

Examination of Disease (Rog Pariksha)

Dvidvidha Pariksha	Trividha Pariksha	Chaturvidha Pariksha	Panchavidha Pariksha	Sadavidha Pariksha
- Pratyaksha (direct perception)	Aptopadesh (verbal or textual testimony)	Aptopadesh (verbal or textual testimony)	Nidan (Etiology)	Nidan (Etiology)
-Anuman (inference)	- Pratyaksha (direct perception)	- Pratyaksha (direct perception)	Purva Roopa (Prodromal symptoms)	Purva Roopa (Prodromal symptoms)
	-Anuman (inference)	-Anuman (inference)	Roopa (clinical features)	Roopa (clinical features)
		Yukti (reasoning and method)	Upasaya (compatibility)	Upasaya (compatibility)
			Samprapti (pathogenesis)	Samprapti (pathogenesis) Prashna (interrogation)



Notes

Section Three



Notes



Pratyaksha (direct perception) – The knowledge obtained by physician's own sense organs and mind;

Anuman (inference) – Assessment according to different characteristics of the patient

Aptopadesh - verbal or textual testimony of experts and statements and experience of patients

Yukti – reasoning and additional investigative methods

Nidan (Etiology) – causes of disease

Purva Roopa (Prodromal symptoms) – changes appearing in the system before the manifestation of the actual disease

Roopa (clinical features) – the clinical features of the disease

Upasaya (compatibility) – Favourable in disease condition

Samprapti (pathogenesis) – the process of disease from the vitiation of dosha to the manifestation of disease

Prashna (interrogation) – asking questions of the patient about his disease

Examination of patient (Rogi Pariksha)



Notes

Astavidha Pariksha

Nadi (pulse examination)

Mutra (urine examination)

Mala (stool examination)

Jivha (examination of tongue)

Shabda(examination of voice and speech)

Sparsa (examination through touch)

Drik (examination of eye)

Akriti (examination of face and body structure)

Dashavidha Pariksha

Prakriti (constitution)

Vikriti disease susceptibility)

Sara (tissue quality)

Sanghanam (body compactness)

Pramana (anthropometry*)

Satmya (adaptability)

Satva (mental stamina)

Ahara shakti (digestive power)

Vyayama shakti (strength of body)

Vaya (age)

*anthropometry – the measurement of all body parts with one's own finger breadth



Intext Questions 1.1

Fill in the blanks in the following

1. The object of Rogi Pariksha is to evaluate the _____ of the patient.
2. Aptopadesh is the _____ of experts and statements and experience of patients.
3. Satmya is _____
4. Ahara shakti is the _____ of the body.
5. Anthropometry deals with the _____ with one's own finger breadth



What You Have Learnt

In this chapter we have studied about the general concept of examination of patients and disease along with their seat and site for examination as described in the texts of Ayurveda.

Beside this, It also helps to understand the object of different examination.

**Notes****Terminal Exercise**

1. Describe the techniques of clinical examination in Ayurveda.
2. Give an account on Ashtavidha Pariksha.
3. Write down the seat of examination and describe Anumana Pramana in detail.
4. Write in detail the ten point examination (dashavidha pariksha) in patient.

**Answer to Intext Questions****Fill in the blanks in the following**

1. Strength
2. verbal or textual testimony
3. Adaptability
4. Digestive power
5. Measurement of all body parts

MODULE - 1
(SECTION - 2)

MODULE - 1
(SECTION - 3)