

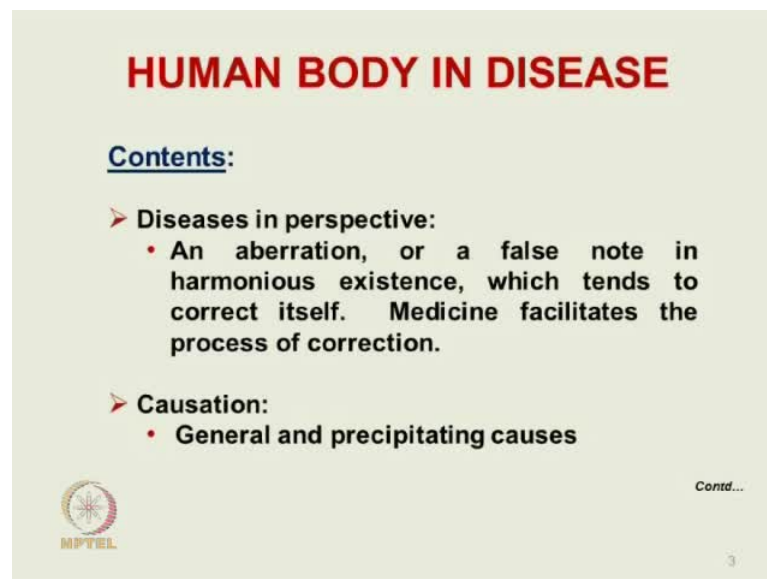
Ayurvedic Inheritance of India
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Module - 2
Key Concepts

Lecture - 6
Human Body in Disease

We will be considering how Ayurveda viewed the response of the body to disease. Diseases are very many, caused by very many factors. How did the human body respond to the onset of a disease? This is the subject that we will be dealing with today and the contents are shown here, just to give an idea of what we will be talking about.

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HUMAN BODY IN DISEASE

Contents:

- **Diseases in perspective:**
 - An aberration, or a false note in harmonious existence, which tends to correct itself. Medicine facilitates the process of correction.
- **Causation:**
 - General and precipitating causes

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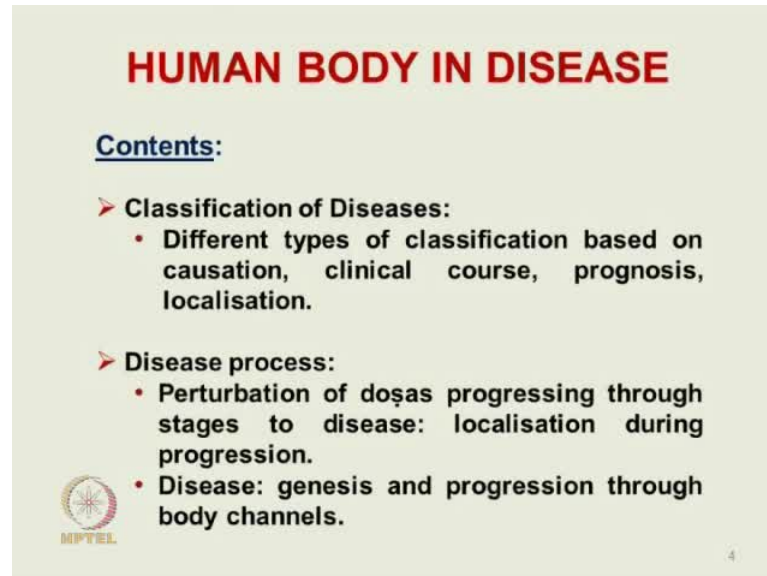

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One is, the diseases in perspective; that is, these are aberration; normal state is one of good health. So, a disease, or a disorder is essentially an aberration, something which should not have happened; sometimes, it happens because of our own conduct. So, there is a natural tendency for a disorder to order itself; a disease cures itself; and the role of medicine is essentially to give a helping hand, to what is a natural process of recovery; that is the fundamental concept in Ayurveda. And, causation, there can be general

causation, something which is predisposing, and then, there can be a precipitating cause, something which brings on the actual onset of the disease.

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There are many classifications of diseases, which will be talking about and then, the disease process; that is going to take a lot of our time, or most of the time in this lecture; that is, what happens in the body from the onset, which may even be invisible, unrecognized, until the full blown picture appears. During that time, very many things happened in the body. Modern science has its own way of looking at it, what is called Patho-physiology. But, thousands of years ago, how did they view this process, from the onset, which was most likely unseen, to the full blown picture of the disease; that is essentially the disease process, which also we will be looking at.

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DISEASES IN PERSPECTIVE

- Human body is designed to maintain good health or equilibrium of body components and doṣas, as discussed earlier.
- Any disequilibrium or disorder has a natural tendency to settle and the state of equilibrium to return. A physician's role is to facilitate the patient's return to the state of good health or equilibrium.
- According to Vāgbhaṭa, a physician gives a helping hand to a patient to escape from a pit.



Now, here, the human body is maintained, is engineered to maintain a good health, or equilibrium of the body. The earlier lecture we talked about *sāmya*, and *sāmya* is the state of equilibrium, which is another name for good health; and the body is engineered for, to maintain this. Any disequilibrium, or a disorder, has a natural tendency to settle, which I would like to reiterate, is extremely important, because even in an earlier slide, the Chinese pilgrim coming here, he himself notes that, most of the disorders, they settled on their own in 7 days; he makes that observation, which is perfectly true. So, that is the natural tendency for the body to recover itself. And, according to Vagbhata, he gives the example of a man falling into a pit; he is struggling to come out of it. Probably he would succeed, but a helping hand by somebody helps him to come out very quickly. So, the role of a physician is precisely that.

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CAUSES OF DISEASES

- **Over use, non-use, or misuse of sense objects:**
 - Eg. Taste
 - over use: gluttony
 - non use: starvation
 - mis use : addiction to “junk food”
- **Extremes of weather conditions:** heat, cold and rains may become excessive or deficient or highly irregular. This can lead to illness. eg. heat stroke.
- **Imprudent conduct:** This involves erroneous judgment and imprudent conduct despite being aware of the injurious nature of the conduct. eg. alcoholism, substance abuse.

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Now, the causes of diseases, the most important, is the use of our senses. Sense, we have 5 sense organs - eye, ear, skin, tongue, 5, nose; so, all these sense organs, through which we appreciate the universe, appreciate our surroundings, if we do not use them at all, that could lead to diseases. If we overuse them, that could lead to diseases. If we misuse them, that could lead to diseases. This is one of the most important concepts and as an example, I have just given an obvious example, tongue; taste, which is one of our sensory experiences, if we do not over... Gluttony; eating all the time, it gives rise to all kinds of disorders; that is gluttony; that is, over use of that taste organ.

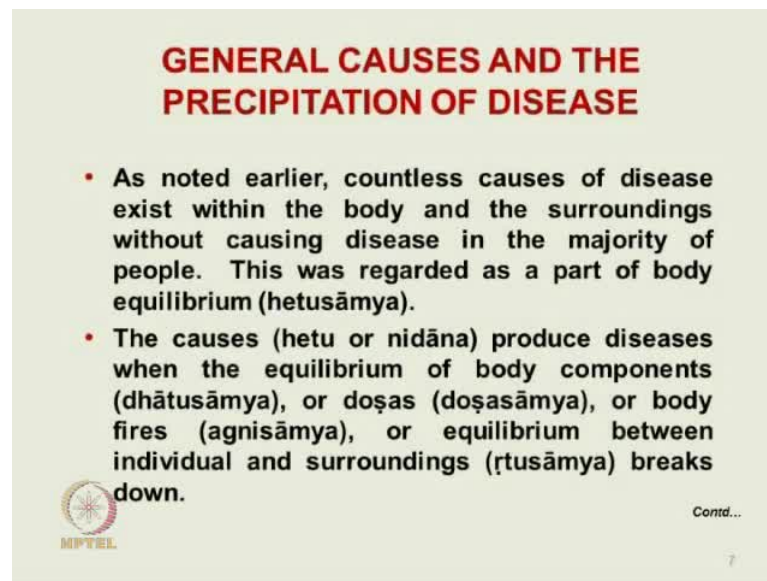
Suppose, there is starvation, we do not use it at all; food is not available, sheer poverty; that could bring on a whole lot of diseases. And, thirdly, eating junk food, which should not be eaten; that is becoming, as you know, junk food have created all kinds of disorders in modern experience. So, all these are three obvious examples of the overuse, of non–use, or misuse of a sense organ, giving rise to diseases. This can be multiplied for taste itself, or it can be all the other sense organs also. This is a very common, large causation for diseases.

The second, is the environmental conditions. It can be weather, or nowadays, if you go to an area where there is a lot of silica mining for example, silicosis. Many of these areas, lots of people get lung disease. In fact, in Rajasthan area for example, it is a huge problem there; pneumoconiosis; people are inhaling; the whole atmosphere is polluted.

The silicon dust, very fine powder; and people inhale this, and they develop lung fibrosis, lung cancer; very great deal of human suffering. That is an environmental cause, man created; but it can be many others, flood, drought. So, all these have impact on health, environmental conditions; that is not manmade, unlike the first one.

Thirdly, imprudent conduct. That is again, we know that, something is erroneous; it should not be done; like alcohol, substance abuse. And, when people do this, it is not lack of knowledge. Everybody knows that if you keep on taking alcohol, if you keep on smoking, or substance abuse, everyone knows the consequences; they see it every day; but still, people do it. That is the erroneous understanding, imprudent conduct; that whole area is known as imprudent conduct or prajnaparadha in Ayurvedic terms. So, these are the three major general causes; one is use or misuse of our own sense organs; endogenous; second is environmental conditions, manmade or natural; or, it could be the imprudent conduct. These are the three major causes which Ayurveda recognizes.

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GENERAL CAUSES AND THE PRECIPITATION OF DISEASE

- As noted earlier, countless causes of disease exist within the body and the surroundings without causing disease in the majority of people. This was regarded as a part of body equilibrium (hetusāmya).
- The causes (hetu or nidāna) produce diseases when the equilibrium of body components (dhātusāmya), or doṣas (doṣasāmya), or body fires (agnisāmya), or equilibrium between individual and surroundings (ṛtusāmya) breaks down.

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And, the general causes and precipitation of a disease; that, in modern medicine, we will say predisposing cause and precipitating cause. Now, I mentioned earlier, there is what is called hetusāmya. Sāmya is a state of equilibrium which is synonymous with health; and that sāmya consists of many sāmyas; sāmyas of the enzymes in the body, fires in the body, sāmya of the components of the body, dhātu's, sāmyas of the doṣas; all these sāmyas, equilibria combined, is what we call sāmya. There, one of the sāmyas I


mentioned is hetusāmya. Hetu is a cause and Ayurveda postulates that, there are a large number of causes existing in the body, hetus. They are existing outside; we have no control over them. Maybe, whatever name you might give - it may be chemicals, it may be bacteria, anything; we have no control, we cannot sanitize ourselves; we cannot sanitize the environment; we have to live among this. But the fact is, in spite of their being everywhere, most of us remain healthy. How is it that, hetus are there, but the body remains healthy? Now, that is the state of sāmya, hetusāmya. Now, this has to break down, if a disease has to manifest; this is what it says that, equilibrium, hetusāmya, that is part of this general sāmya, and unless that is broken down, a cause alone cannot produce a disease.

This is one of the fundamental, because in modern medicine, as you know, cause, removing the cause is the aim of treatment; whereas in Ayurveda, cause is, alone is not enough; you have to reestablish that sāmya. If you do that, then, the cause will take care of itself, because causes are there, but we are not sick. So, there is a fundamental difference in the modern medicine, the cause, so obvious, like typhoid, tuberculosis, you have to remove that cause; but whereas in Ayurveda they would say, the cause is always there. If you take a, throughout, so many people walking around here, many of them will have micro bacterial tuberculosis; many of them have all kinds of other organism; but they are not sick people, they are healthy. So, there is a difference here that, hetusāmya, that status, that is very crucial. Now, I have, this is a restatement of what I said earlier, the different components of this sāmya. Now the causes may be environmental, may be prajnaparadha, something that we do.

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GENERAL CAUSES AND THE PRECIPITATION OF DISEASE

- Causes may succeed in producing diseases by breaking down the equilibrium of body components or doṣas (endogenous); or the equilibrium may be broken down by external factors (exogenous)

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They may also break down the sām̐ya, or conduct may be such, not attacking the cause, but they may damage this sām̐ya; in that place, you are opening the doors to a disease. So, these are the causes, therefore, predisposing, general causes, but the precipitation is breaking down, that state is the sām̐ya.


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SPECIFIC CAUSES

Three doṣas may be perturbed by specific causes.
Examples:

- **Vāta:** Excessive physical activity, fasting, poor sleep; irregular food or food with pungent/astringent taste; cold, rainy season.
- **Pitta:** Bout of anger, grief, hard physical labour, pungent, salty, hot or incompatible food, heat of summer.
- **Kapha:** Day sleep, lack of physical activity, sweet, sour, salty or cold food in excess; incompatible food; winter.

Blood is perturbed when pitta is perturbed; they respond in tandem.

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Specific causes, as you know, the vāta, pitta, kapha, three doṣa, doṣa induced diseases. These are the specific causes mentioned in Ayurveda, vāta; induced diseases - excessive physical activity, fasting, poor sleep, irregular food or food with pungent, astringent

taste; these are all mentioned as provoking vāta induced disorders. Pitta, similarly, a series of reasons are given; bout of anger, grief, emotional excesses, hard physical labor, a list is given which provokes pitta induced diseases. Similarly, kapha again; day sleep, which are all provoking kapha induced diseases. These are all taken from classic Ayurvedic text. Blood is perturbed, blood and pitta, there is a tandem relationship, as pitta is actually derived from blood.

It is during the transformation of blood to flesh, that time, this is the execrable part of that transformation. As I mentioned every time, the particular, when the rasa dhātu goes on, going on, the transformation to blood, blood to flesh, flesh to adipose tissue, during that series of transformations, every time a digestion takes place, there is an assimilable part as a result, and there is also an execrable part. Now, this is the blood and pitta; pitta is the execrable part of blood transformation. So, they always have a tandem relationship. Now, classification of diseases, there are several classifications. One is based on causation; that is, perturbation of doṣas involved in the body and mind, endogenous; accidents, such as attacks by wild animals; these are all mentioned as causations. So, you can have endogenous causation, or it can be exogenous; that is one way of classifying, based on causation.

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CLASSIFICATION OF DISEASES

Several classifications are used based on different criteria.

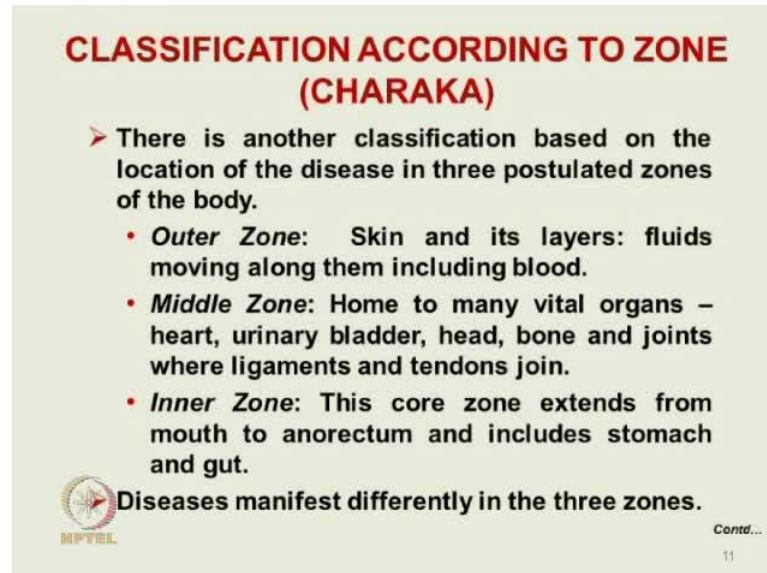
- **Causation:** Perturbation of doṣas involving body and mind (endogenous), accidents such as attacks by wild animals (exogenous).
- **Clinical course:** Mild, severe.
- **Prognosis:** Curable, curable with difficulty, incurable.
- **Target:** Body or mind.

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Second is clinical course, is it a mild, where shramana treatment is enough, or it is a very severe illness; that is another classification, purely clinical classification. Prognosis; is it


curable, is it curable with difficulty, or is incurable; that is another classification. Then, the target; is it the body, or the mind, that is another classification.

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CLASSIFICATION ACCORDING TO ZONE (CHARAKA)

- There is another classification based on the location of the disease in three postulated zones of the body.
 - **Outer Zone:** Skin and its layers: fluids moving along them including blood.
 - **Middle Zone:** Home to many vital organs – heart, urinary bladder, head, bone and joints where ligaments and tendons join.
 - **Inner Zone:** This core zone extends from mouth to anorectum and includes stomach and gut.

 Diseases manifest differently in the three zones.

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Charaka gives a classification of his own, that is depending on three zones in the body. The surface zone, that is skin and its layers, fluids moving along them, including blood. So, it is not just surface of skin, but immediately the subjacent to the skin; that is one layer of the body where diseases cannot confine to those. There are some examples which will come. Second is the middle zone, which is the heart, urinary bladder, head, bone and joints, the ligaments and tendons, joints; all that comes in the middle zone. The inner zone is essentially the gut, the gastrointestinal system; that is the inner zone. Now, the diseases manifest differently in these three zones. The same disease in these three zones will have different clinical manifestations.

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DISEASES IN THREE ZONES

Examples:

Diseases in Three Zones	Examples
Outer Zone	Glandular swellings: boils, carbuncle, ulcers, leprosy, cellulitis, piles, abscesses.
Middle Zone	Paralysis of one side; convulsions; wasting; tuberculosis: bone and joint disorders; disorder of head, heart and urinary bladder.
Inner Zone	Diarrhea; flatulence; fever, cough, shortness of breath, constipation, hiccup, enlargement of spleen, and internal extension of diseases from outer zones.

 If diseases are not treated early they tend to spread from outer zone to the inner and worsen prognosis.

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Now, here is the, again taken from Charaka only, like outer zone, glandular swellings, boils, carbuncle, ulcers, leprosy, cellulitis or visarpa, piles, abscesses; all these are the outer zone examples. The middle zone is paralysis of one side, convulsions, wasting, tuberculosis, bone and joint disorders, disorders of the head and urinary bladder; these are all in the middle zone. The inner zone is diarrhea, flatulence, fever, cough, shortness of breath, a whole list of them. Now, if the outer zone disease starts and if it is totally neglected, or badly handled, there is every possibility that will keep on involving deeper and deeper, and the disease progresses more and more rapidly.


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CLASSIFICATION ACCORDING TO SUŚRUTA

All diseases divided into three broad groups with subgroups:

- **Adhyātmika (Physical):** Includes hereditary, congenital, and those due to doṣa perturbation.
- **Ādhibhautika:** Causes disease by derangements in surroundings.
- **Ādhidaivika:** Causes are acts of god such as violent seasonal changes, mystical charms, old age etc.

There are other classifications as well based on the region affected; caused by suppression of natural urges and so on.



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Now, Suśruta had a classification of his own, that is, Adhyātmika, physical, including hereditary, congenital and those due to doṣa perturbation. All these are the Adhyātmika type of illness; very extensively used classification. Ādhibhautika is surroundings, which I mentioned some examples earlier; it is not manmade, or it could be a manmade. The typical example is what we call industrial diseases, pneumoconiosis. If you go to large areas where mining is being done, people inhale this dust and thousands of people are disabled by this. U P, you can see much more commonly in Rajasthan, cotton, byssinosis, pneumoconiosis, all kinds of disorders. This is purely environmental causes, created by man and that all will come under Ādhibhautika. And lastly, Ādhidaivika, which are acts of God, as they say and this could be anything; even old age is put in as one of Ādhidaivika, which I do not understand, whether old age is a disease; it is really not a disease, but Ādhidaivika, one of the examples given is this.


Lightning for example, that is a typical act of God. Nobody knows how it comes, or why it comes, or when it comes; that could be a cause of death and disability. There are many other causation also, like suppression of natural urges, that is another cause. So, one of the reasons, these classification, there are so many varieties of classification of diseases. In one place Charaka says, instead of this, so many different names, so many different classifications, why not reduce them to doṣa disequilibrium? They can be reduced to this; so, that is one way to simplify this, to have a easier way of classifying disorders when you see. After all, you are not interested in applying a label.

Vagbhata says in one place, a physician should not feel shy, if he cannot apply a label to a disease. This is the simple reason, all the diseases have not been discovered, something like that he states. So, what is necessary first, is information to treat that person, to get him well; that is based on the doṣa disorder, doṣa disequilibrium. Therefore, the diagnostic process which we will be discussing later, is not to attempt to find a label, or a disease for a person, but to find out the particular kind of disequilibrium; vāta, pitta, in terms of these, that is the diagnostic process, because of this multiplicity of classifications.

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DISEASE PROCESS

- ❖ According to Charaka, disease occurs in the presence of a triad. These are causes (nidāna or hetu) which perturb vāta, pitta and kapha; perturbed doṣas; and body components (dhātus) which are vulnerable to perturbation. Stronger the union of the triad, more severe the disease. Causes or Nidānas alone cannot produce disease.
- ❖ The perturbed doṣas - vāta, pitta and kapha – are associated with characteristic clinical features.
 - Vāta: Deficiency associated with lassitude, fainting; excess produces hoarse voice, wasting, desire for heat, constipation, insomnia, weakness; distention of abdomen, and rumbling of bowel.

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Now, then, we come to this interesting question of disease process. Now, what is disease process? A cause, whether it affects a doṣa and it tends to set off disequilibrium in the doṣa, that may not be detected; patient himself may not be aware of it. Even (()) symptoms may not have appeared; but the disease already begins there, in an imperceptible form; and, that slowly progresses and ultimately, it may take days or weeks before the final picture of the disease appears, the full blown picture.

Now, during that process, a series of changes are taking place in the body. In modern medicine, frequently I have to give this, so that you will understand very easily, there is a, what is called patho-physiology; the physiology is being altered during this process. Patient may feel a vague type of malaise, as the term is called. He is not feeling too good, but he does not know what is wrong; but he does not feel his usual self. Now, that kind of a feeling, obviously, there is a morbid process going on. Now, that disease process, it progresses uncontrolled, until the final picture appears. Now, that is what we are dealing with here. This subject in itself, there is one, the staging of the disease, which I will be referring to in Ayurveda. Suśruta gives the clearest description of this, the staging of the disease, from the first stage, up to the fifth stage, it gives; that is essentially what we are talking about.

Charaka has given further elaboration of that. That is important to understanding a disease, or understanding something about the time for intervention, and something

about the management itself. So, this is what Charaka, for example, for a disease to start, three things are required; one is a cause or nidāna, which perturbs that equilibrium, doṣa equilibrium; that is necessary; that is the first thing. Then, you need to have a perturbed doṣa; it has to create a disturbance there; that has to be there. So, cause alone is not enough. And thirdly, you have to have the components in the body, dhātus to be disturbed. So, there has to be a victim, you have to... First of all, there is a cause to create an imbalance, the disturbance in the equilibrium; then, you have to have the doṣas which are disturbed, or perturbed, and you have to have the dhātus to be victimized. So, all these three are required for a disease process to start.


If this, suppose the dhātu which is victimized is already weakened by some factor, or the doṣa disturbance is very very powerful, can be mild or very powerful; suppose, it is very powerful and the victimized dhātu is very weak for some reason, smoking, various things, which we weaken our body; starvation, malnutrition. Therefore, you have a weakened body, body tissues and you have very strong cause, then, the disease will be very powerful. Manifestation of the disease may be mild, maybe very severe in another person. So, that, all these factors are important in determining the violence of the disease, or the lack of it.

The perturbed doṣas, they are associated with classical, clinical features. So, here, the examples are given; vāta, deficiency of vāta, that is what happens in that perturbation, is associated with the lassitude, fainting. Excess, on the other hand, will produce hoarse voice, wasting, desire for heat, he feels cold, constipation, insomnia, weakness, etcetera, etcetera. So, that is the excess and deficiency of these doṣas, that, these are the manifestations. There are many others; I have just taken a few examples here.

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DISEASE PROCESS

- **Pitta:** Deficiency manifests in dark complexion, drop in body heat; excess associated with burning sensation all over, desire for cold, yellow discoloration, insomnia, seizures.
- **Kapha:** Deficiency associated with dryness, sensation of burning, loose joints, thirst and insomnia; excess shown by pale complexion, heaviness of extremities, drowsiness.



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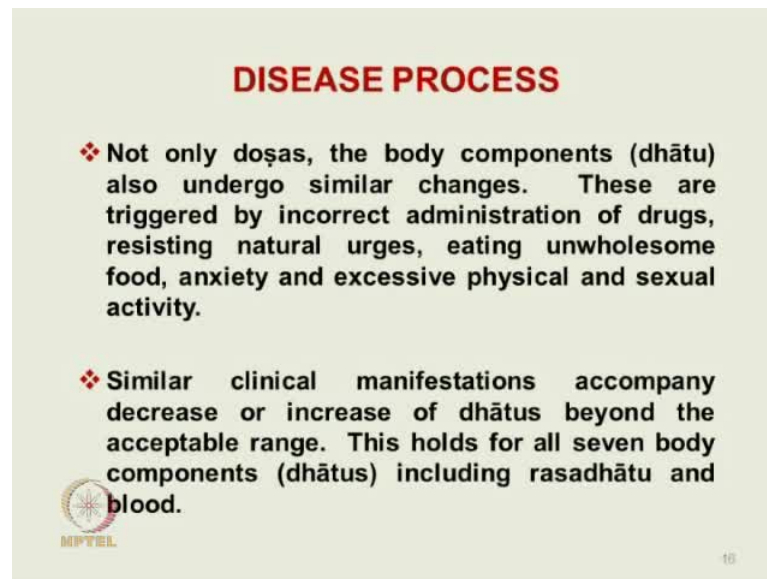
Similarly, pitta. So, an Ayurvedic physician, he gets an impression as soon as he sees the patient; from these, he gets hints. It could be pitta, vāta, etcetera, an experienced Ayurvedic physician, because this is part of their trade; because, they know this. Like pitta, deficiency manifests in dark complexion, drop in body heat, excess associated with burning sensation all over; these are characteristics of pitta, vāta etcetera; that is what this table shows. Kapha, deficiency is associated with dryness, sensation of burning, loose joints, thirst and insomnia. Excess is shown by pale complexion, heaviness of extremities and drowsiness; these are the characteristics of kapha. Now, not only the doṣas which I have mentioned here, the same considerations apply to dhātus also; because these are vāta, pitta, kapha, they are also dhātus. As long as they are in the right proportion, they are also dhātus.

Mala dhātus I mentioned this morning, malas; they are not all execrables. As long as they are in the right proportion, I gave a examples of cholesterol. Cholesterol is not a toxic substance to be eliminated from the body; it is a part of our body metabolism; it has its own role to play, it is necessary; but if it goes, reaches the boundaries, then, it becomes dangerous. It can do a lot of harm. And, these doṣas are exactly like that; vāta, pitta and kapha, these are doṣas, parts of a, products of digestion of our food, part of digestion constantly taking place in all our dhātus, seven dhātus. So, they are essential for the body, but in the right proportion; but if their proportion is breached, then, they become

toxic; they become dangerous. So, this same what we apply here, excess or deficiency of the doṣas, that also applies to dhātus.

For example, adipose tissue in the body; there is a certain healthy range where we need adipose tissue; but suppose, that becomes excess, obesity; it is a very serious problem; or blood, in all these, deficiency of blood, pressure becomes extremely anemic.

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DISEASE PROCESS

- ❖ Not only doṣas, the body components (dhātu) also undergo similar changes. These are triggered by incorrect administration of drugs, resisting natural urges, eating unwholesome food, anxiety and excessive physical and sexual activity.
- ❖ Similar clinical manifestations accompany decrease or increase of dhātus beyond the acceptable range. This holds for all seven body components (dhātus) including rasadhātu and blood.

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So, like that, what applies to the doṣas, the same consideration, deficiency and excess, producing clinical manifestations, that applies to dhāthus also. We must recognize that, doṣas as well as dhāthus, they both share these characteristics, deficiency or excess, with their own typical manifestations.

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PERTURBED DOṢAS TO DISEASE

➤ Perturbed doṣas – vāta, pitta and kapha – pass through a series of stages (Table) as described by Suśruta.

Sl. No.	Stages	Features
1.	Caya	Accumulation of the perturbed doṣas in their respective locations.
2.	Prakopa	Perturbation or derangement: this is caused by their respective cause or nidāna: spread beyond their location.

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Now, the classification of this different stages, this is known after Suśruta. Once the disease begins, to the manifestation of the disease. This is a typical disease process. No other some Samhida gives it in such clarity as Suśruta has given. Now, here, for example, perturbed doṣas, vāta, pitta or kapha, regardless of any of these, once a disease process starts, this is all starts. Caya; caya is the accumulation of this perturbed doṣa. Once that perturbation, or disturbance, or derangement, whatever term you use, happens to a particular doṣa, there is a collection. In its own natural place, the all these three doṣas, in the healthy state, they have the particular place, where they are, like kapha, for example, the upper part of the body, that is where they reside. But here, that quantity increases; the same location; that is the first state; patient may not be aware of it.

The second stage, if this continues, progress is prakopa; it becomes perturbed; and, that is caused by, that equilibrium has been breached; that cause continuing to act, and this prakopa state, it begins to spread outside its boundaries; its abode, it goes beyond that. Now, this movement outside its abode, it is actually triggered, or moved by vāta. A disturbed kapha, for example, it cannot move on its own. It can only move through the agency of wind, or vāta. So, wherever there is a certain disturbance taking place, immediately you will find vāta is present there, which may be, which (()) usually its vahana; that is what moves it to different parts of the body.

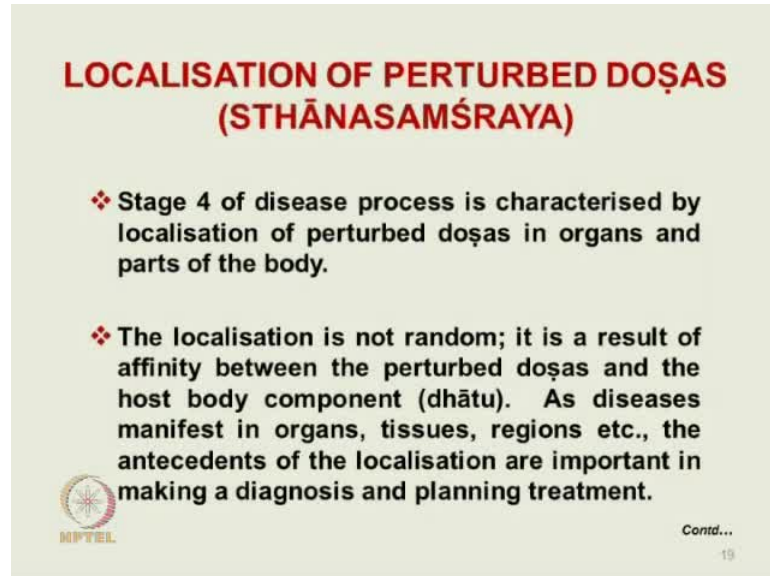
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PERTURBED DOṢAS TO DISEASE		
Sl. No.	Stages	Features
3.	Prasara	The perturbed doṣas are acted upon by vāta which energises motor activities: they spread all over the body singly or jointly.
4.	Pūrvarūpa	Premonitory signs and symptoms appear; perturbed doṣas get lodged in different body parts; disease manifestations influenced by localisation.
5.	Rūpa	Full fledged disease such as abscess, lymph node enlargement, diarrhea etc.

So, the prakopa is immediately attended by vāta and it begins. The next is prasara; it begins to spread. And, this perturbed doṣas, they are acted up on by vāta, it spreads all over the body. By that time, patient obviously has symptoms. Purvrupa, the next stage, premonitory symptoms appear; chills, ryaiga, symptoms; not full blown disease, but you know that, he is going to get fever; you do not know what kind of fever he is going to have; but, that premonitory symptoms begin to appear at that stage. Because obviously, this has spread all over the body, and perturbed doṣas get lodged in this fourth stage. Along with this spread, as it progresses more, you will find, there is a localization; it cannot be all uniformly spread all over. It may find certain localization somewhere; that is stanasamshraya; we will come to that later. At fourth stage, disease is easily recognizable; patient recognizes it; relatives recognizes it, and the physician can recognizes it; stanasamshraya. Now, this is not a random phenomenon; there is a reason why a perturbed doṣa goes and lodges in the joint, or lodges in the abdomen, lodges somewhere else; there is a particular vulnerability there. So, it is not a random phenomenon; it goes and lodges there, that is the fourth stage. That is usually a stage when physicians intervene, because they may not have a chance to intervene earlier; they may not know what they are dealing with, at that stage. If a patient comes and says, I am not really good, we do not really know what to do about it, except to observe him; that is all you can do. In fact, many times a patient is admitted for observation, for this reason. He does not feel good, and you are also not very comfortable, but you do not know what you are dealing with. Now, of course, we will do all kinds of tests, but stage four is a


stage where disease is recognizable, and you know that, the time for intervention has arrived. Fifth stage, rupa; there is a full manifestation; diagnosis becomes possible by that time; all the classic signs or symptoms will be present.

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**LOCALISATION OF PERTURBED DOṢAS
(STHĀNASAMŚRAYA)**

- ❖ Stage 4 of disease process is characterised by localisation of perturbed doṣas in organs and parts of the body.
- ❖ The localisation is not random; it is a result of affinity between the perturbed doṣas and the host body component (dhātu). As diseases manifest in organs, tissues, regions etc., the antecedents of the localisation are important in making a diagnosis and planning treatment.

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Now, localization, the stage four is organ, some part is affected; this is not a random, that is an important point. So, in fact, during, in the modern example, when vaccination is going on, injectable vaccines are given. You know, there is a very important point; during an epidemic, like a polio epidemic is going on, you should not give any injection; why do we say that? Because, during that epidemic, even normal looking people may be having viral (()); it is very difficult to prevent it. This is, I am talking about pre-polio vaccine. So, at that time, if you give an injection, you may precipitate the disease right there; you may get a paralysis there. So, viremia, it is there in the body, but if there is an injury, that is a time, that is where it will, where stanasamshraya will take place. You are making vulnerable, so that disease manifests; he gets a paralysis; children get that. So, that is, this is the reason for that; localization is not random; there is always a cause. Something is happening there, may be an injury, maybe something else.

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LOCALISATION OF PERTURBED DOṢAS (STHĀNASAMŚRAYA)

❖ The localisation in organs, parts etc., of the body and the respective clinical manifestations are shown in Table.

Organ/region	Disease manifestation
Abdomen	Tumors, deep seated abscess, flatulence, cholera, diarrhea.
Penis	Urethral stricture; sores.
Scrotum	Swelling
Parts above clavicle	Disorders of head and neck


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So, the, that is a important, the fourth stage. The respective clinical manifestations, some of these, which I have take when this localization takes place, these are again taken from Suśruta; abdomen - it may be tumors, deep seated abscess, flatulence, cholera; all these are examples of a disease localizing in the abdomen, and these are examples. If it is more localized like penis, urethral stricture; sores; these are again typical localized examples. Scrotum hydrocele, a very very common condition; parts above the clavicle; disorders of head and neck, tonsillitis all kinds of...

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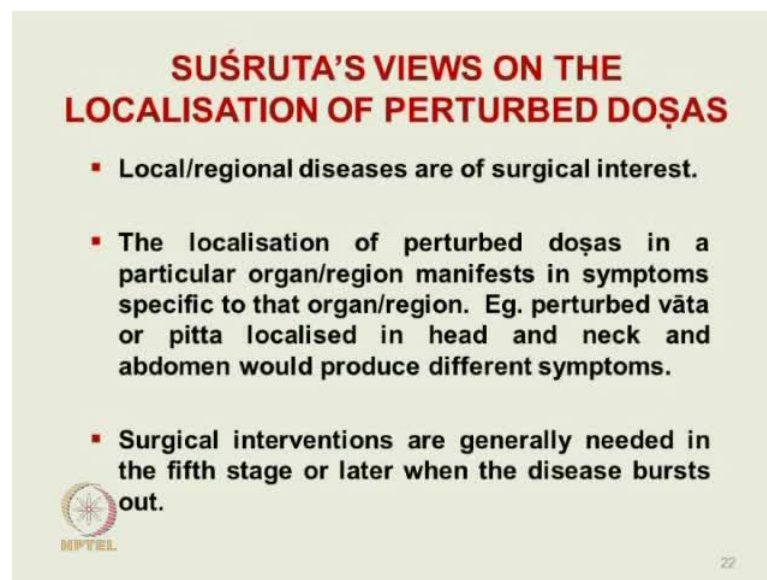
LOCALISATION OF PERTURBED DOṢAS (STHĀNASAMŚRAYA)

Organ/region	Disease manifestation
Skin, flesh, blood	Skin diseases, some minor diseases, cellulitis.
Adipose tissue	Enlarged lymph nodes; tumors, certain eye diseases.
Bone	Deep seated abscess; pustules on the feet.
Feet	Elephantiasis, swelling of the ankle, leprosy.
Whole body	Fever and generalised disorder.

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Skin, flesh and blood; skin diseases, minor diseases, cellulitis; these are all examples of localization in the skin. Adipose tissue - enlarged lymph nodes, tumors, certain eye diseases; bone - deep seated abscess, pustules on the feet; bone tumors are not mentioned; I could not find that; maybe I missed it, but I could not find it. Feet - elephantiasis; whole body, without any strict localization, that is fever. In fact, there is a whole lot of description as you know, on jvara, one of the dreaded disorders in the old days and there it is generalized. You cannot find any particular organs affected like typhoid fever, vishama jwara, which are described. No particular organ can be, the whole body is toxic, it is affected.

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SUŚRUTA'S VIEWS ON THE LOCALISATION OF PERTURBED DOŚAS

- Local/regional diseases are of surgical interest.
- The localisation of perturbed doṣas in a particular organ/region manifests in symptoms specific to that organ/region. Eg. perturbed vāta or pitta localised in head and neck and abdomen would produce different symptoms.
- Surgical interventions are generally needed in the fifth stage or later when the disease bursts out.

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Now, it is fever and generalized disorders; all these are examples of a localization of... Suśruta's views, one is, many of these regional disorders are of surgical interest, because like a boil, for example, a surgeon has to intervene. So, he has particular interest in this stanasamshraya; it is a term which he uses very often. If there is a particular disease manifesting in a particular place, a joint for example, or it is in the throat, the symptoms are related to their part; vāta, pitta, kapha, whichever may be disturbed, but the symptoms are related determined by that particular location. A joint; joint will have symptoms of arthritis, limitation of movement, swelling, pain, tenderness, all those associated with joint disease will be present; but if it is vāta, pitta, kapha, the severity of symptoms will be different; chronicity will be different; long term prognosis will be different; all these will be different depending on this. But, the symptoms of that

particular region, that will be a joint symptoms only. In other words, limitation of movement, or pain, stiffness. All these are disturbances of a joint, that will be present, whether it is vāta, pitta or kapha; but the severity of that, prognosis there, all those will be determined; a vāta induced disorder, there is an osteoarthritis, an acute arthritis. The entire manifestation, severity, the chronicity, prognosis, all these are different, because the doṣa involved is different. That is the point which is being made. If the surgical intervention is required in the fifth stage, by that time, the disease already, fully manifests.

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BODY CHANNELS AND DISEASE PROCESS

- ❖ **Body compartment exists between skin externally and the lining of the alimentary canal (koṣṭha) extending from mouth to ano-rectum. This compartment is the abode of channels (srotas) which are ubiquitous.**
- ❖ **Channels can be counted as thirteen in number purely based on their origin and what they transport, but they are countless when viewed in their visible and invisible forms. Sira, dhamani, rasāyani, nāḍī etc., are their synonyms.**



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Now, then, we come to this interesting question of body channels, srotas. This is where we have to spend a little time on that. What do you mean by body compartment? Because the skin outside the boundary, or external boundary and the inside is the koṣṭha, the alimentary canals, starting from the gut, from mouth, going up to ano-rectum. Now, between that koṣṭha and the skin outside, is a large compartment. The Charaka famously said, if you want to make a diagnosis, a physician who does not get a gnanabuddhi pradeepa, the lamp of wisdom and knowledge, if you cannot get in to this dark compartment, you can never hope to make a diagnosis or treat diseases. Now, that is the body compartment. Now, that body compartment, there are innumerable, countless channels, srotas; this is most fully developed in Charaka Samhitha. There are channels, large channels are there, srotas; but there are also countless small channels. Now, that, these play a very crucial role in the disease process.

I do not believe that, this has received adequate attention in many of the discussions, because the disease process itself is not well discussed, and the role of this very important, it seems to be. So, the channels, the large channels are 13 in number, which Charaka talks about, purely based on their origin, what they transport, but they are countless when they are viewed in their entirety. The names, they are confusing; sira, dhamani, rasayani, nadi; these are all used interchangeably; this creates a very big problem. Brajendra Nath Seal was a very great scholar who lived in the early twentieth century. For a while, he was professor of philosophy in Mysore University, a great scholar. In his book, he made a special study of these and these terms, do they, dhamani, sira, nadi, do they really correspond to anything that we understand today; artery, vein, lymphatics, can we say anything, capillaries. He concluded sadly, this is standing puzzle; it simply cannot be equated with any of these. Blood can go through it; doṣas can transit through it; nerve impulses can go through it, like dhamani. So, it is very difficult to make out the character of this. We have to, some guess work is required in this; but here, channels are, the large channels certain, yes, you can have some understanding of that. But, this sira, what is sira? Is it a nerve, is it artery? Sira vyadha, when you look at that, that, it looks like vein. So, that way, but it is also used in other context. So, there is a great problem in identifying exactly, what these conduits are? They are conduits, that everybody agrees.

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BODY CHANNELS AND DISEASE PROCESS

- ❖ They provide conduits for vital breath, water, food, āhārasa, blood, muscle, fat, bone, marrow, semen, urine, feces, and sweat.
- ❖ They are large or tiny and share the colour of the respective body component (dhātu). The three doṣas transit through them.
- ❖ So long as the channels remain open and transport substances uninterruptedly, body remains free from disorders.

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Now, Charaka goes on and says, vital breath, water, food, ahararasa, blood, muscle fat, all these dhātus have siras in them; srothas in them; like muscle, bone, they all have srothas; these channels are present there, in all the dhātus. Now, the importance of that will come as we proceed. They have the same color as that of the dhātu, where they are located, depending on which dhātu they are located; if it is bone, or if it is flesh, it has a color of the same, share the same color and three doṣas transit through them; and, so long as these channels remain, this is the fundamental claim which Charaka makes, so long as the channels remain open and transport substances uninterruptedly, body remains free from disorders. So, these channels must remain open and they must allow free transit all the time; this is a fundamental condition he makes.

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BODY CHANNELS AND DISEASE PROCESS

- ❖ Derangements and signs of disease appear when the channels are blocked by perturbed doṣas; they may also get blocked when natural urges are suppressed.
- ❖ The blockage of channels associated with important organs is characterised by typical signs and symptoms. (Table)

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When there is a derangement, or a disease appears, channels are either blocked, or they are in some way affected; need not be blocked, maybe partly blocked. They may get blocked, when natural urges, urges, vegas are suppressed. Then also, this can happen; these channels can get blocked. The blockage of channels is associated, typical signs and symptoms, which there is a table here to show that.

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BODY CHANNELS AND DISEASE PROCESS	
TABLE : examples of blocked channels and their clinical manifestations	
Channels	Clinical Manifestations
Vital breath (origin from heart and great channel – mahasrota)	Shortness of breath: noisy, painful breathing.
Water (origin in palate and lungs)	Severe thirst: dryness of tongue, palate, throat.
Food (origin from stomach)	Loss of appetite, vomiting, indigestion.

The symptoms of the blockage of channels of rasa, blood, and other dhātus are the same as those of the disorders of the dhātus themselves.

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Like vital breath, mahasrota; mahasrota, I find, as you know, it is also considered as gut, but it is also regarded as pranavahia srothas. So, I think, it has both meanings. There are several references where air, prana is passing through this. So, if there is a blockage there, obviously there is shortness of breath. Typical example, water channel, if that is blocked, there is severe thirst, dryness of tongue. Food, that is food passage - that loss of appetite, vomiting. So, all these are typical example, if a channel is blocked, there will be clinical manifestations and the symptoms of blockage of rasa, blood and other dhātus are the same as those of the disorders of that dhātu. If there is a bone disease, bone channels are blocked; it will manifest as a bone disease. So, when we say bone disease, we have to assume, we have to understand that, the srothas of the bone, which characteristic, they are diseased, which cannot be separated.

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BODY CHANNELS AND DISEASE PROCESS

- Visible and invisible channels (srotas) pervade the entire body compartment between the skin outside and alimentary canal within. As conduits for a variety of substances, they must always remain open for transport uninterruptedly.
- No body phenomenon can make an appearance in the body or disappear without a role for the channels.
- If the channels are open and flow of substances is uninterrupted, no disease can occur.



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I do not think, either Vagbhata or Suśruta goes to this extent about srothas. These visible and invisible channels, srothas in their entirety, they pervade the entire body compartment; between the skin outside and the alimentary canal within. As conduits for a variety of substances, they must always remain open for their transport uninterruptedly; this is the definite statement that he makes. Now, no body phenomenon can take place without the srothas being involved; that is again, and if the channels are opened and flow substances are uninterrupted, no disease can occur. So, this is a very confident claim which you find in Charaka.

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BODY CHANNELS AND DISEASE PROCESS

- When symptoms indicate that a particular organ or part or organ has become the seat of a disorder, it does mean that their specific channels have become vitiated. Vitiating could mean occlusion of varying degrees and excitement of some kind which could excite the substances passing through them.
- Nidānas are agents to cause the perturbation of not only doṣas but also body channels.



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When the symptoms indicate that a particular organ, or part has become the seat of a disease, it does mean that, their specific channels have become vitiated, the srothas.

Not only that, the vitiation, not only the srothas is affected, some kind of an excitement of substances passing through them; in other words, they are not only conduits; if the srothas is involved in the disease, that substance passing through the, that also becomes involved; that substance also becomes involved. So, nidanas are agents to cause the perturbation of not only doṣas, but also channels. So, earlier on we said, the nidana, that equilibrium is broken down and the doṣa is perturbed; but now, we understand from this, it is not only that, that channels which transit, gives transit to these doṣas, they are also involved; they must be involved if the disease has to manifest.

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BODY CHANNELS AND DISEASE PROCESS

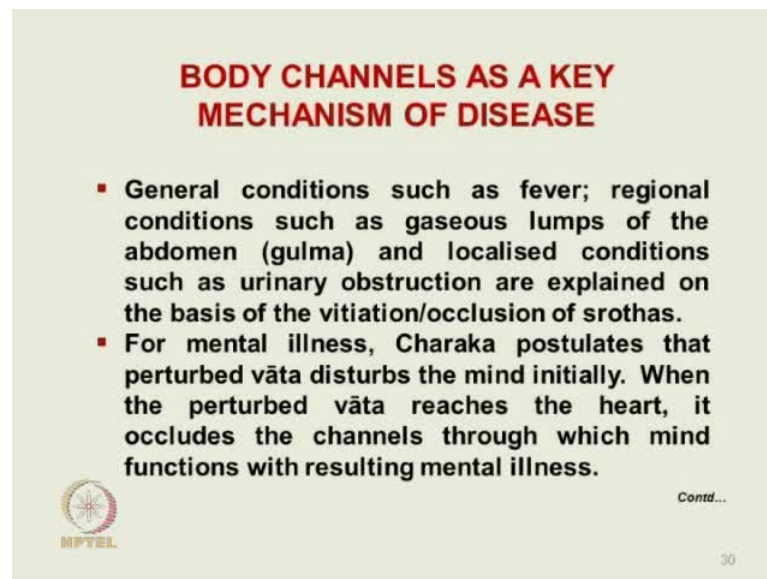
- Disease process, according to Charaka, must have three parts. They are cause (nidāna), doṣas and body components (dhātus) which are connected by the network of channels (srotas).
- Causes of various kinds – endogenous or exogenous -perturb or derange doṣas – vāta, pitta and kapha - ; they also vitiate/excite/occlude body channels (srotas) which exist in body components and serve as their conduit.
- The excited/vitiated body channels vitiate the dhātus wherein they exist. Eg. If the channels in bone are vitiated, they would in turn vitiate bone. Body channels are therefore not just passive conduits.

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This is something which Charaka talks about with very great emphasis, or great length, actually. Now, the disease process, according to Charaka, must have three parts, we already saw that. One is the cause; the doṣas and the body components; they are all connected by srothas. These three agents, which we started by saying, these causes can be endogenous or exogenous, vāta, pitta, kapha, they can vitiate, excite, occlude the bodies channels, again, he comes to that, which exist in body components and serve as... All these seven dhātus, they have these srothas, they exist and any kind of derangement taking place, along with the derangement of the doṣas, there is also an excitement, or damage, occlusion of the srothas; that has to be an integral part of pathogenesis. Once


these srothas is excited, or damaged, the dhātu in which it exists is also damaged, and if the channels of the bone are vitiated, they would vitiate the bone. A bone disease when we say, the srothas is also involved, that is also damaged. So, body channels are therefore, not just passive conduits, that is the conclusion. I do not think that, any other, I have not seen, neither Suśruta nor Vagbhata paying so much attention to the importance of srothas as a organic basis for disease progressing.

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BODY CHANNELS AS A KEY MECHANISM OF DISEASE

- General conditions such as fever; regional conditions such as gaseous lumps of the abdomen (gulma) and localised conditions such as urinary obstruction are explained on the basis of the vitiation/occlusion of srothas.
- For mental illness, Charaka postulates that perturbed vāta disturbs the mind initially. When the perturbed vāta reaches the heart, it occludes the channels through which mind functions with resulting mental illness.


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The body channels has a key mechanism of disease, general conditions such as fever, regional conditions such as gaseous lumps of the abdomen, or gulma, and localized conditions such as urinary obstruction, are explained on the basis of the vitiation, or occlusion of srothas again. So, it is not only a localized, one particular area, even generalized conditions, fever, there again the srothas, because they are universal. All the tissues, everywhere you find srothas, which are extremely minute, countless, so that has to be there, even general conditions, or purely localized conditions. Mental illness for example, as you know, heart is identified with consciousness, with all kinds of emotional, cognitive disorders; and even in mental illness, there are conduits of the mind, according to Charaka. So, initially, a perturbation starts with vāta, but the conduits of the mind, the srothas, they are affected and that is the, what really precipitates mental illness.

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**BODY CHANNELS AS A KEY
MECHANISM OF DISEASE**

- While localisation of perturbed doṣa as the fourth stage or sthāna samśraya was identified by Suśruta, srothas as the mechanism for the spread and localisation of perturbed doṣas and the active role of srothas, not mere conduits, were the conceptual contributions of Charaka.




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So, even at that point, he says, srothas is the important. So, that localization in the fourth stage, stanasamshraya, was identified by Suśruta, as a critical stage for intervention. Srothas has the mechanism and they spread and localization of perturbed doṣas, and the active role of srothas, not just passive conduits; that was a definite contribution of Charaka, which nobody else has done.

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DISEASE PROCESS

- Ayurveda recognised structure (body parts, organs, viscera), functions (digestion, blood distribution, breathing), food and dietetics, and materia medica as topics meriting detailed and separate discussion among the foundational subjects of medicine.
- Diseases and their treatment claimed the bulk of attention as the chief good of Ayurveda.
- However, the mechanisms of diseases and their course – called disease process here and pathophysiology in recent terminology – was not given a separate status. Nevertheless several ideas relating to disease process were touched upon in the teachings of Suśruta and Charaka.

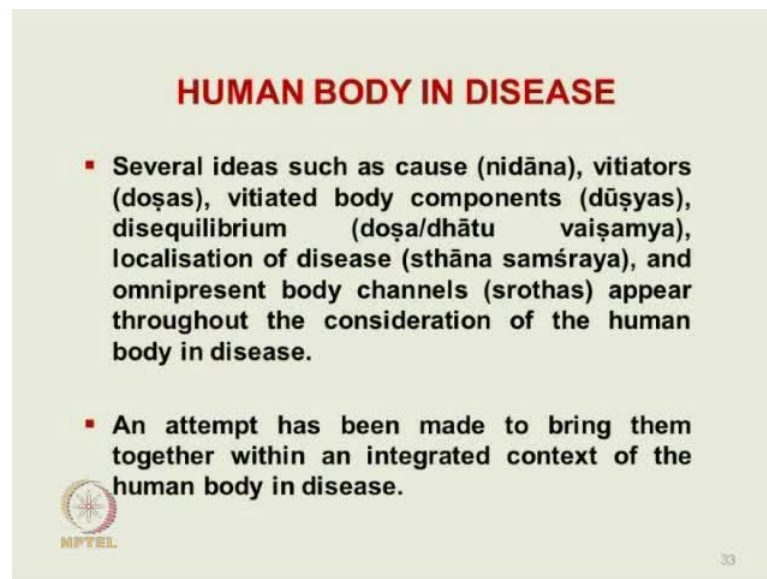


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Now, the Ayurveda recognized... You will find the classic, the body parts, organs, functions like digestion, blood distribution, etcetera, food and dietetics, materia, medica,


these are all, well, big subjects discussed in Ayurveda; long discussions are there; many chapters are there. But this, srothas happening, a change taking place at the tissue level, that has not deserved, it has not been mentioned anywhere as a subject of its own, except, the only place is srothas as a chapter in Charaka Samhita. But in the disease process, there is no question that, srothas explains what the changes taking place at a tissue level; otherwise you cannot explain all that happens in the disease process.

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HUMAN BODY IN DISEASE

- Several ideas such as cause (nidāna), vitiators (doṣas), vitiated body components (dūṣyas), disequilibrium (doṣa/dhātu vaiṣamya), localisation of disease (sthāna samśraya), and omnipresent body channels (srothas) appear throughout the consideration of the human body in disease.
- An attempt has been made to bring them together within an integrated context of the human body in disease.

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Again, if we look at the cause, the vitiators, vitiated body disequilibrium, we have talked about it so much this today. To linking all these together, whether it is doṣa, or the perturbation of doṣa, or the dusyas, or their dhātus which are being vitiated, all these are connected. What is the connecting link, and that is the srothas again. So, here, all that I have attempted to do, it is a little provocative, but if you want to understand the disease process happening at the tissue level, then, I think, the srothas is the answer, which was emphasized by Charaka.

Disease process, I think, it is a vague subject, but it needs to be understood because, it is not enough, a causation, vāta, pitta, doṣas are disturbed and then, the disease manifests. But, what happens in the, at the tissue level during this process? 3 weeks, or 4 weeks, or whatever time period it takes. For example, take a process like rheumatic heart disease; rheumatic heart disease starts with sore throat. A child in the school, 5 or 6 years old gets sore throat. Many sore throats will cure itself; there is no need to do anything; but some

of them are caused by streptococcus. Now, those children, they are not sick; they recover from that; but they are not very well, that is the point, that first stage, what we call caya, something is happening; but it is an immunology process in our system. After weeks, may be months, the child has a cardiac murmur, because the valve has been affected, not by the streptococcus. Streptococcus is gone, after setting up the initial infection; but that infection has produced an immunological reaction. Antibodies are made, acting against a streptococcal antigen, not streptococcus, that antigen. Now, that keeps on increasing; more and more antibodies are produced, and they find a target organ, a receptor side on the heart valve, connective tissue in the joints. That connective tissue is affected by this antigen, antibody complex; they find a focus there.

So, the (()) child complains about joint pains, maybe some effusion in the joint and maybe neglected; parents or teachers may not pay any attention. We used to be told rheumatic fever licks the joints, but bites the heart; that is what we were taught; because it is too trivial; you pay no attention to that. But, later on, when the cardiac murmur comes, people are scared and they take to the hospital, and everything follows. So, here, there is a long process here. Now, that part is essentially what I am trying to explain. If you want to explain in Ayurvedic terms, was there anything in Ayurveda, they have said, during this process of weeks or months, what was taking place in the body? Now, this is the, Charaka wrote this 2000 years ago, but this is the nearest that it is coming; otherwise, it is not mentioned at all; but in these long drawn out processes, it is not an acute infection that is easy to understand; but here there is a long process; tuberculosis, everywhere, many of these, this is not immediate; there is a immediate causation; the equilibrium is broken and that starts that process; but then, there is a long wait before it becomes manifested, purvarupa or the rupa, that stage comes after long period.

During that process what is happening in the body? What is happening in the dhātus? Now, there, this idea of the srothas, countless, enormous; in fact, if the, where he says as long as they are opened, as long as they permit free transit, body cannot become sick. This is a confident statement he makes. So, in that, he says also there is damage to the srothas, it is not only the disturbed doṣas; doṣas going through the srothas, srothas also get infected. So, it is an active role that it is playing. An inflamed or excited srothas through which something is passing, that also is involved; so, it plays an active role. Now, that way, the pathogenesis, the whole process taking place, srothas holds the key. I

think that, if that message has given you some food for thought, I will be very happy; that is it.

Now, the recording is off, you can ask your questions now. Any, any questions? Of course, there is a lot of confusion about the terminology, because srothas, dhamani, sira, nadi, all these terms using interchangeably, that does create a problems in understanding. Even after reading many times, we are not very sure some of these...They are also permitting, so many different things can, substances can transit through them, including nerve impulses, like dhamani for example; nerve impulses are also transmitted. So, all that makes it difficult, but at that time, none of these things could be seen, very little was known.

This whole idea is important, that is a incubation of a disease, the progression, how does it remain in the body and these are the srothas. It can contain huge volumes, if you look at the, calculate the volume, like capillaries for example; if the whole capillaries open up suddenly, they all ave a tone; they are kind of half closed. But, if they are suddenly opening up, as you know very well, the whole blood volume can go, like a man suddenly fainting. He gets scared and he faints; and that is happening because his pressure has dropped to 50 or 60; all that is happening, all his blood is flowing into his own capillaries; they have dilated. So, here srothas are very small; so, if they become excited, they are partly occluded and then, you can imagine, there can be severe generalized illness. So, that emphasis on srothas is something which is an interesting concept.