

Ayurveda is a shaasthra which means it is a 'shaasana' or 'directions' from people with wisdom. It aims at an accomplished life of human beings which is happy, healthy and dharmic. So it speaks about the factors that negatively and positively affects the mental, physical and spiritual health of a human being. It addresses the problems created by these factors and suggests solutions also. Here in this article I address the different pathways that affect the physiology according to Ayurveda to cause roga and aroga in a person. These are vascular, neuronal, infectious, cosmic and spiritual.

1. VASCULAR PATHWAY

We know that water, macro nutrients like fats, carbohydrates, proteins and micro nutrients like vitamins, minerals and phytochemicals are absorbed into the blood through the walls of the gastrointestinal tract. These nutrients reach the blood, interstitial space and then the cells. So these nutrient molecules physically reach the cells and do the actions. This can be considered as vascular pathway since these macro and micro nutrient molecules are transported to the site through blood.

2. NEURONAL PATHWAY

Many of the macro and micro nutrients can affect the physiological function with out the nutrient being physically present at the site. This is done by activating the sensory nervous system. The sensory nerves are activated and an electro chemical message reaches the brain. Then the brain sends responding electro chemical messages by activating the motor neurons to the concerned parts in the body. Veeryam, rasam, gandham are some examples that can be explained on the basis of neuronal pathway. Veerya - The classification of herbs as ushnaveerya and sheethaveerya are based on this neuronal phenomenon. The phytochemical piperine in pepper activates the sharp (burning) pain receptors of certain neurons. So if pepper comes in touch with the tongue, these neurons on the tongue are activated. The message reaches the brain. The natural response of the brain is to speed

FIVE PATHWAYS THAT AFFECT PHYSIOLOGY IN AYURVEDA

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up the sympathetic nervous system. The speed of metabolism is increased. So fat or glucose is broken down on a faster pace. This causes the faster production of CO₂, water and heat. This in turn causes a faster respiration and perspiration. The generated heat causes the feeling of ushna.

Sheethaveerya herbs do just the opposite function. The receptors on the cold sensing neurons are activated and the response from brain is to reduce the speed of metabolism. So there will be less production of water, CO₂ and heat. This in turn causes slow respiration and perspiration. Since the heat production is low, the person feels cool. Here the parasympathetic system is activated.

Veerya affects mental state also. When the sympathetic system is activated through ushnaveerya oushadhas, the person shows raajasaguna and when the parasympathetic system is activated, through sheethaveerya oushadhas, it creates thaamasaguna.

Snehasweda- In the case of snehasweda also the neurons of touch pain pressure are activated. All these sensations activate the brain. As the response the concerned part of the body gets more blood circulation.

Shadrasas- Ayurveda says that meal should contain shadrasas. The shadrasas we feel on the tongue also have neuronal effect. , in metabolism. The glucose molecule activates certain sensory neurons and the response from the brain to the pancreas is to release more insulin into the blood. So before the glucose molecule is taken into the system, insulin is made available in the blood. Katurasa activates the sharp pain receptors and the response is to speed up metabolism as I told earlier in the case of phytochemical called piperine. Kashayathiktha tastes activate the liver and the gall bladder and more bile is released into the small intestine. Salt and sour also cause more mucous and water into the gastrointestinal tract and cause a smooth peristaltic movement. So through the activation of neurons, a total activation of metabolism is achieved by consuming shadrasas.

Gandha- Many kinds of gandha can activate the olfactory neurons in the nostrils. This is the most effective pathway to activate the brain. In nasym and dhoopanam this phenomenon is exploited. Different phytochemicals or essential oils arouse

Ayurveda holds information about micro and macro organisms affecting the physiology of humans. This include all parasitic, bacterial, fungal and protozoic infections. All come under the label krimi. These can be seen inside or outside the body and named aabhyanthara and baahya krimi respectively. There are stthoola krimis and sookshma krimis which infect the inside or outside of the body. Stthoola krimis are helminths, lice etc. Sookshmakrimis are not visible to human eye.

different gandhas. These gandhas activate the concerned parts of brain. Different gandhas can arouse negative or positive moods also in a person. Prabhaava- In the case of vamanam certain phytochemicals activate the chemo receptors on the stomach wall and the brain sends messages to activate the stomach walls and an anti peristaltic movement takes place. A lot of water and mucus are also released into the stomach to ease the process of vamanam. The same way the activation of chemo receptors on the small intestinal wall by certain phytochemicals cause virechanam.

So all these examples show that Ayurveda has very good knowledge about the possibilities of nervous system.

INFECTIOUS PATHWAY

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sahaja krimi also. These are the probiotics which are beneficial for the body.

3. COSMIC PATHWAY

Grahavesha and Bhoothavesha can be considered as cosmic pathway.

Grahavesha- Human physiology is affected negatively and positively by the rays coming from cosmic bodies. The simplest example is Sun rays. Photons are reaching the earth with different wavelengths and different frequencies. Different rays cause different physiological effect in the human body. We are aware of light rays and heat rays because these rays can be detected by our sense organs. But the ultraviolet rays which we can not detect with any of our sense organs are also interfering with human physiology. UVB rays helps in the synthesis of vitamin D3 in the body. UVA rays causes skin cancer. Some of the UV rays cause damages in the genetic material in fetus.

Chapter Rithucharya deals with the physiological changes in the human body during seasonal changes. Seasonal changes simply means that the planetary configuration is changed. So those planets which had no visibility towards earth at sometime, gets visibility when the positions change. Different planets may be sending different kinds of rays to the earth. I say this because physicists found out that many kinds of energy rays are coming from the cosmic world, which nobody knows where it comes from or what it does to the plant or animal kingdom. These energy rays are not perceptible to humans because we do not have a suitable sense organ.

Ayurveda speaks about certain medical problems called Grahabadha. The person affected by the Graha shows a deep rooted change in personality. This is Unmaada. Among many reasons, only one reason for Unmaada is Grahabadha. In Kaumarabhruthya also we see the chapter Balagrahavesha, which speaks about the symptoms of Autism, Asperger syndrome etc. Here in these cases the pattern of thinking and behavior of the child is abnormal. It could be the influence of some energy rays coming from some cosmic bodies that affected the brain. Other than the well known Navagrahas, there are other small planets which are collectively known as baby planets, which are not understood much.

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Ayurveda speaks about certain medical problems called Grahabadha. The person affected by the Graha shows a deep rooted change in personality. This is Unmaada. Among many reasons, only one reason for Unmaada is Grahabadha. In the case of abnormal behavior of any kind, its reason is in the brain. Medical world has done a lot of studies on neurons, but not much known about the Glial cells like Astrocytes, Microglia etc.

lot of studies on neurons, but not much known about the Glial cells like Astrocytes, Microglia etc. There is a chance that the reason for the deep rooted abnormal behavior of a person is in the Glial cells. In a comment box of a video about Schizophrenia, I read a comment that 'Aliens communicate with Astrocytes'. At present there is not any proof for this statement is available. But this piece of information could have been from the very distant past., carried over through generations. Since this peace of information suits the content of some chapters in Ayurvedic texts, this can be taken as a clue for doing research. We can not deny the fact that the west also had a medical and astronomical science, which got lost in the course of time. Anyway research scientists of the medical field and physics should do a combined research. Think that when some ultraviolet rays which are cosmic can make changes in the genetics of a foetus (which is proved), there is a possibility that some other type of cosmic rays also can affect the developing brain of the foetus or the infant to alter the physiology. Bhoothavesha- Bhootha means something manifests or takes shape. I understand bhootha as virus. Virus is only a genetic material ie DNR or RNA. It occasionally changes its shape and the new form affects the humans with new sets of symptoms. This alteration of structure can be due to the influence of energy rays from of some graha. Mostly this alteration takes place during seasonal changes. So we have reasons to believe that some planets which got visibility towards earth in the new configuration, caused the alteration of the Virus which is only a genetic material.

Some studies say that the virus resides in the distant layer of earth's atmosphere and gets activated during a seasonal change.

In transactional language Bhootha means something that horrifies humans. We need to suspect that certain virus may be creating terrifying visual and auditory hallucinations in the affected persons and thus came the impression of 'terrifying bhootha'.

4. SPIRITUAL EFFECT

Ayurveda establishes that there are spiritual reasons also for the onset of a pathology. It can be the result of some karmas done in the past life. Some of the genetic disorders are said to be of this category. But all genetic disorders are not due to spiritual reasons. It can be due to the wrong aharvihara of the garbhini or some cosmic effect (grahabaadha) in the foetus. But some reasons can be from the past life. This is why Ayurveda teaches humans how to take care of mental, physical and

spiritual health. It urges humans to follow some dos like 'archayeth Deva gow vipra vaidya vruddha nrupa athitdheen'. Dongs are like himsa stheya anyatthaakaama paishoonya parusha anrutham. The chapter Dinachrya in ashtangahrudayam gives the guidelines for an accomplished life and total welfare of the shareera, man; and athma.

So when somebody approaches Ayurveda for an understanding, one needs to look at it from different angles and understand it on different planes. Everybody may not be able to accept spirituality in a medical science. But even avoiding that area, there are reasons to trust Ayurveda and to look for possibilities for doing research in Ayurveda and accepting it for the benefit of the mankind.

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