

## COMPREHENSIVE REVIEW OF *SROTAS* IN *AYURVEDA* AND ITS IMPORTANCE IN *SHARIR*

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### ABSTRACT

*Ayurveda* is the most ancient of all medical sciences which has withstood the ravages of time and still blooming steadily and gaining prime attention. For proper understanding of this science we must have knowledge of its basic principles. *Sharir* is one of them and it is conglomeration of innumerable structures called *Srotas* (micro and macro channels). The word "*Srota*" has been derived from the word root "*Su Sravane*" meaning to ooze, to exude, to filter, to permeate. According to the context "*Dosha Dhatu Mala Mulam He Shariram*" human body is composed of *Dosha*, *Dhatu* and *Mala*. These building

components of *Sharir* are continuously circulates throughout the body by micro and macro channels. These channels are *Akash Mahabhuta* dominant structures. The state of equilibrium of *Dhatu* is health and its disequilibrium is termed as disease. Healthier condition is all depends on unvitiated condition of *Srotas*. All the *Srotas* are apparently described as the major seat of diseases. So, for normal functioning of the body it is essential that these channels, both micro and macro should be intact. So in this article we emphasize on Review on concept of *Srotas* in *Ayurveda* and its importance in *Sharir*.

**KEYWORDS:** Channels, *Dosha*, *Dhatu*, *Sharir*, *Srotas*.

### INTRODUCTION

According to *Acharya Charaka* "*Sravanaat Srotansi*"<sup>[1]</sup> means through which *sravana* or flow of the body substances take place. So it can be defined as the channels through which the conduction of the nutrients for the *Dhatu* is take place regularly. During the process of *Uttroottar Dhatu Utpatti Kram*, circulating *Dhatu*s are transformed from the first to the last

tissue layer (i.e *Ras* to *Sukra*).<sup>[2]</sup> In this way each *Dhatu* has two aspects –one for nutrition for its own tissue layer and substance for the next developing *Dhatu*. The vitiation, depletion and maintenance of existed bodily structures are not possible without *Srotas*<sup>[3]</sup> and manifestation of a disease occurs in the body as a result of the defective *Srotas* of the body. Hence any defect of *Srotas* must be corrected, for the restoration of normal health.

### AIM AND OBJECTIVE

- To understand concept of *Srotas* in detail by review of literature.
- To understand their importance in *Sharir*

### MATERIAL AND METHOD

- Review of *Ayurvedic* literature from *Ayurvedic* classics including relevant commentaries.
- Other print media, online information, journals, books, magazines etc.

### Concept of *Srotas* in *Ayurveda* classics

In *Charaka Samhita*, *Acharya Charaka* mainly focussed the *Srotas* on physiological basis whereas *Shushruta* described the *Srotas* on Anatomical basis.<sup>[4]</sup> The frame work of human body is maintained by *Saptadhatu*. These are transported to each and every part of the body through channel called *Srotas*. The body contains numerous channels through which the *Dhatus*, *Doshas* and *Malas* circulate, known as *Srotas* in *Ayurveda*.

### Etymology of *Srotas*

According to *Damodar Sharma Gour*, the term '*Srotas*' is derived from the root '*Sru*' (*Gatyarthak*) *Dhatu* and '*Asrun*' suffix; '*Srotas*' means the hollow structures for circulation of substances in the body.

According to *Gangadhar Rai* *Srotas* are so called because they pose as the *Rasaadi Sravapaths*. Now the term *Srava* means release of something. Thus *Srotas* is a pathway for the released *Rasa* etc. probably after their production.

### Definition of *Srotas*

According to *Acharya Charaka* the channels of circulation carry the *Dhatus* (tissue elements or their constituents) undergoing transformation to their destination are called *Srotas*.<sup>[5]</sup> According to *Chakarapani*, the channels which transport the *poshaka Dhatu* to the *Poshya*, are called *Srotas*.

According to *Sushruta Srotas* that which originates from vacant spaces (hollow organ) spread throughout the body and purveys materials are to be understood as *Srotas* (channel) and apart from *Sira* and *Dhamani*.<sup>[6]</sup> According to *Dalhan* commentary those which carry or transport materials like *Prana*, *Anna*, *Vari*, *Mamsa*, *Meda* etc. are called *Srotas*. *Kaviraja Haranachandra*, commentator of *Sushruta Sharira*, has opined that *Srotas* are formed by the clear, thin, soft membranes which are very minute that they cannot be seen from the eyes. *Acharaya Sharangdhara* has also described *Manovahi Srotas* separately.

According to *Bhavmishra* *Srotas* are defined as the channels through which *Manas*, *Prana*, *Anna*, *Paniya*, *Dosha*, *Dhatus*, *Updhatu*, *Mala*, *Mutra* etc. circulate throughout the body. These are innumerable in number and can't count.<sup>[7]</sup> The description of *Srotas* in *Bhava Prakasha* is according to *Sharangadhara*. He has also applied term *Randhra* for presenting *Bahirmukha Srotas*.

#### **Parayaya (synonyms) of Srotas**

According to *Acharya Charaka* *Srotas*, *Sira*, *Dhamani*, *Rasayani*, *Rasavahanai*, *Nadi*, *Pantha*, *Marga*, *Sharircchidra*, *Ashaya*, *Niketa* these are the names attributed to various visible and invisible spaces inside the *Dhatu* (tissue elements) of the body.<sup>[8]</sup> *Acharya Charaka* stated these *Parayaya* according to their function and structures and also stated that *Sira*, *Dhamani* & *Srotas* are the same. *Acharya Sushruta* stresses that *Sira*, *Dhamani* & *Srotas* are not the same.

*Vagbhata* has added “*Kshaya*”, “*Jivitayatna*” & “*Dvarani*” as other synonyms of *Srotas*.<sup>[9]</sup> In the *Vividhasatapitiya Adhyaya* the term “*Ayanamukha*” has been used by *Charaka* & is explained by *Chakrapanidatta*.

#### **Swarup (structure) of Srotas**

According to *Charaka*, *Srotas* have the same colour to that of *Dhatu* they carry; they are *Tubular*, *Vritta*, either large or small in size and either straight or reticulated in shape.<sup>[10,11]</sup> *Purusha* cannot exist without the organisation of *Srotas* because of their pervasion all over the body and aggregators and alleviator of *Dosha*.<sup>[12]</sup>

*Vagbhata* has described *Srotas* along with *Sira* and *Dhamani* in both the text *Ashtanga Sangraha* and *Ashtanga Hridaya*. The orifices of the *Srotas* are small, spread long and far, like those in the *Vismranala* (lotus stalk) , through which *Rasa* (nutrient tissue) spreading to

the entire body<sup>[13]</sup> while *Sushruta* stated that pores like *Vismranala*, are present in the *Dhamani*.

### Classification of *Srotas*

1. Innumerable and Numerable.
2. *Drushya* (perceptible) and *Adrushya* (imperceptible).
3. *Bahirmukha Srotas* and *Antarmukha Srotas*.

Out of such innumerable, *Charaka* has described 13 main *Srotas* in the 5 chapter of *Vimansthana* depending upon their origin and abnormality produced in them on vitiation. These are *Pranvaha*, *Annavaha*, *Udakvaha*, *Rasavaha*, *Raktavaha*, *mamsavaha*, *Medavaha*, *Asthivaha*, *Majjavaha*, *Sukravaha*, *Mutravaha*, *Purishavaha*, *Swedavaha*. *Charaka* added one more *Srotas* in *Garbhavyakaran*, which is *Artavavaha Srotas*.

*Acharya Sushruta* has described 22 or 11 pairs of *Srotas* and called them *Yogvahi*, he listed them on the basis of clinical signs and symptoms related to trauma or injury to particular *Srotas*.<sup>[14]</sup> He didn't mentioned *Asthivaha*, *Majjavaha*, *Swedavaha Srotas*. In this context, *Dalhana Acharya* comments that the *Mula* of *Majjavaha Srotas* is *Asthi* and the *Mula* of *Asthi* and *Svedavaha Srotas* is *Meda* which is present all over the body. So, it will be very difficult to define the prognosis of any disease in case of any deformity occur in their *Mula Sthan*. But As *Sushruta Samhita* is *Shalya Pardhan* so it is not as so much importance as in *Charaka Samhita*.

In the same way according to *Astang Hridaya Srotas* are of two types, i.e.(1) *Bahya Srotas* (external orifice, channel): In male *Bahya Srotas* are nine in number i.e. – two in the nose, two in the ears, two in the eyes, one of the anus, one of the mouth and one of the urethra. In women there are three more *Srotas* two in breasts and one of the passage of blood.<sup>[15]</sup>(2) *Abhyantra Srotas* (internal channel): *Srotas* function as the base of life in the body. These are 13 in numbers. They are, one each of *Prana*, the *Dhatus* (the seven basic tissue), the *Mala* (the three chief wastes), *Ambu* and *Annavaha Srotas*.<sup>[16]</sup>

According to *Sharangadhara* the body has ten *Randhra* (orifice) viz. one in each of the eyes, nose and ears; one in urethra, one of the anus, one of the mouth and the tenth is in the head. Women have three more; one each in the breasts and the third in the uterus. There are

innumerable minute pores in the skin.<sup>[17]</sup> According to *Kashyapa Srotas* are two types *Sukshma* and *Mahana*. *Sukshma Srotas* are *Nabhi* and *Romakoopa*.<sup>[18]</sup>

### MULSTHANA OF SROTAS

*Mulsthana* is the site of formation, storage or elimination of *Bhava Padartha* of that *Srotas* is take place. *Chakrapani* has described *Mulam* as “*Mulamiti Prabhava Sthanam*”<sup>[19]</sup> meaning that *Mula* of a *Srotas* is the area from which *Srotas* evolves or arises (similar to the root of tree). This part of *Srotas* regulates and controls the function of the entire *Srotas*. Any abnormality in the root of *Srotas* affects the entire *Srotas*. Hence, due consideration has to be given to the root of the *Srotas* in the treatment of any pathology of the *Srotas*. *Chakradutta* explains this concept by illustrating the example of a tree. As a tree is seriously affected by injury to its root, similarly, the channels of circulation in the human body are seriously affected when their *Mulasthana* is injured. With this end in view, *Sushruta* has described symptoms due to the injury at the sites of origin of these channels of circulation.<sup>[20]</sup>

Determination of *mulasthana* of *Srotas*<sup>[21]</sup>

1. *Sangraha Sthana* (*Mulasthana* related with storage).
2. *Vahana Sthana* (*Mulasthana* related with conduction).
3. *Utpatti Sthana* (*Mulasthana* related with origin point of view).
4. *Naidanic Drishtikon* (*Mulasthana* related with diagnostic point of view).
5. *Chikitsatmak Drishtikon* (*Mulasthana* related to clinical point).

No	Name	<i>Srotomula</i>	<i>Srotomula</i>	<i>Srotomula</i>
		<i>Charaka</i> (ch.vi.5/16)	<i>Sushruta</i> (su.sha.9/12)	<i>Vagbhatta</i> (As.s.sh.6/25)
1	<i>Pranavaha</i>	<i>Hridaya, MahaSrotas</i>	<i>Hridaya, Rasavahi dhamani</i>	<i>Hridaya, MahaSrotas</i>
2	<i>Annavaha</i>	<i>Amashaya, Vamaparshwa</i>	<i>Amashaya, Annavahi dhamani</i>	<i>Amashaya, vamaparshwa</i>
3	<i>Udakavaha</i>	<i>Talu, Kloma</i>	<i>Talu, kloma</i>	<i>Talu, Kloma</i>
4	<i>Rasavaha</i>	<i>Hridaya, Dashadhamani</i>	<i>Hridaya, Rasavahidhamani</i>	<i>Hridaya, Dashadhamani</i>
5	<i>Raktavaha</i>	<i>Yakrut, Pleea</i>	<i>Yakrut, Pleea</i>	<i>Yakrut, Pleea</i>
6	<i>Mamsavaha</i>	<i>Snayu, Twak</i>	<i>Snayu, Twak</i>	<i>Snayu, Twak</i>
7	<i>Medovaha</i>	<i>Vrukka, Vapavahan</i>	<i>Kati, Vrukka</i>	<i>Vrukka, Mamsa</i>
8	<i>Asthivaha</i>	<i>Meda, Jaghan</i>		<i>Meda, Jaghan</i>
9	<i>Majjavaha</i>	<i>Asthi, Sandhi</i>		<i>Prava, Asthi</i>
10	<i>Sukravaha</i>	<i>Vrushana, Shefas</i>	<i>Stana, Vrushana</i>	<i>Mushka, Majja</i>
11	<i>Mutravaha</i>	<i>Basti, Vankshana</i>	<i>Basti, Medhra</i>	<i>Basti, Vankshan</i>
12	<i>Purishavaha</i>	<i>Pakwashaya, Sthulaguda</i>	<i>Pakwashaya, Guda</i>	<i>Pakwashaya, Sthulaguda</i>
13	<i>Swedavaha</i>	<i>Meda, Romkupa</i>		<i>Meda, Romkupa</i>
14	<i>Artavavaha</i>		<i>Garbhashaya, Artavavahi dhamani</i>	

***Hetu (Causes) of Srotodusti***

*Acharya Charaka* states that the food and regimens that promote the aggravation of *Dosha* and go contrary to the well-being of *Dhatus* (tissue elements) vitiate the channels. The *Lakshan* and *Nidana* of *Srotodusti* which are stated by *Vagabhatta* is alike the presentation of *Charaka*. These getting vitiated by indulgence in unsuitables (food and activities) give rise to disease, when unvitiated these make for health.<sup>[22,23]</sup>

***Lakshan of Srotodusti***

*Ayurveda* believes that fundamental causes of disease of *Srotas* are *Atipravritti* (increase flow of the contents of the channels), *Sanga* (obstruction of the flow of the contents of the channel), *Siragranthi* (Appearance of nodules in the channels) and *Vimarga Gamana* (diversion of the flow of the contents to improper channels).<sup>[24,25]</sup> It is obvious that transportation and exchange of substances is responsibility of *Srotas*.

*Arunadatta* has illustrated the phenomenon of *Atipravritti* with the example of an excessive flow of urine (*Bahumutrata*) as in *Prameha*, *Atisar* and *Sanga* with the example of *Mutrakricha* and the voiding of small quantity of faeces at frequent intervals or to the retention of it as in *Udavarta*.

***Vyadhi utpatti Sthana and Samprapti***

The concept of *Srotas* has been most widely explained in *Ayurveda* in regard to the disease process.

The concept of *Srotas* can be understood by the example of well-planned house in which there are two types of pipeline system-one system for inlet of fresh water and other for outlet of the waste products. If any blockage of these drainage systems of pipelines can result problem; in the same way any occlusion in *Srotas* can lead to disease. When these *Srotas* does proper work it is indication of easy and healthy life. When *Dosha* get aggravated by use of improper digestion foods and activities first and vitiated the *Koshthagani* leading to improper digestion, production of *Aama* and improperly processed *Rasa Dhatu*. At the same time (aggravation of *Dosha*) abnormal changes take place even in the *Dhatu* (tissue) and their *Srotas* this is called *Srotodusti* or *Kha vaigunya*. *Sroto vaigunya* plays an important role for the *Sammurchhana* of *Dosha & Dhatu* at a particular as a disease manifest inside the body. Due to *khavaigunya*, *Dosha & Dhatu* (*Dushya*) *Sammurchhana* takes place to form the *Samprapti* of the disease inside the body. One vitiated *Srotas* effects the other *Srotas*.



**Importance of Srotas in Sharir**

1. *Srotas* carry the *Dhatus* elements & their constituents undergoing transformation to their destination.
2. *Rasa, Mana, Prana, Anna, Udaka, Vata, Pitta, Kapha, Rasa, Rakta, Mamsa, Meda, Asthi, Majja, Shukra Dhātu, Stanyadi Updhātu, Mala, Mutra & Purisha* are transported in the body through *Srotas*.
3. Development & nourishment of different *Bhavas* of the body is not possible without *Srotas*
4. Affliction of these channels leads to the vitiation of the tissue elements residing there or passing through them, vitiation of one lead to the vitiation of the other. The vitiated channels and *Dhatus* (tissue elements) on their part vitiate other channels and *Dhātu* respectively. Because of their vitiating nature, *Dosha* viz. *vata, pita* and *kapha* are responsible for the vitiation of all of them (channels and tissue elements).

**DISCUSSION**

The human body is built by conglomeration of *Srotas*. They represent the internal transport system of the body. According to *Sushruta Srotas* that which originates from vacant spaces, (hollow organ) spread throughout the body and purveys materials are to be understood as *Srotas* (channel). *Rasavahini, Pantha, Marga, Sharirchhidra* etc. These *Paryaya* show their function and structures. *Srotas* can be correlated to capillary, lymphatics, lactiferous ducts, intercellular spaces. These all structures are hollow and carry substances from one site to another site of the body. All the cells have their internal circulatory system which is managed by endoplasmic reticulum inside the cells. This internal system of cells should also be considered in the same category of the *Srotas*. Cell membrane is made up of lipids and proteins and is semipermeable allowing some substances to pass through it and excluding other. However, its permeability also varies because it contains numerous regulated ion channels and other transport protein that can change the amount of substances moving across it. Capillaries have pores in the endothelial cells (60-80nm in diameter) that allow small molecules and limited amounts of protein to diffuse. At gap junction, the intercellular space narrows from 25 to 3 nm and they permit substances to pass between the cells without entering the ECF. The diameter of the channel is normally about 2nm, which permits the passage of ions, sugars, amino acids and other solutes. The biophysical knowledge adds to it that *Srawana Karma* includes filtration, osmosis, diffusion and conduction.

## CONCLUSION

Any hollow channel or space carrying *Poshaka Dhatu* to the *Sthayi Dhatu* by *Srawana Karma* and excrete *Mala* from the body can be considered as *Srotas*. Normal functioning of these *Srotas* maintains health and their abnormal functioning results in disease in the body due to (*Srotodusti*) vitiation of *Srotas*. It may be functionally identified by its specific functional structure through which to and fro exchange takes place.

*Srotas* can be considered by capillary, intercellular spaces, gap junction, lymphatics, lactiferous ducts, ion channels etc.

## REFERENCES

1. Tripathi Brahmanand Agnivesh. Charak Samhita: elaborated by Charaka & Dridhbala; volum1. Chaukhamba surbharati prakashan Varanasi; ed., 2006; 30(12): 561.
2. Tripathi Brahmanand Agnivesh Charak Samhita: elaborated by Charaka & Drdhibala; Edited with charaka chandrika Hindi commentary.vol-2. Chaukhamba Surbharati prakashan Varanasi; Edition, 2008; 15(16): 553-55.
3. Pawar praddep shivram Et Al an Analytical outlook of determination of Moola Sthana of *Srotas*, Review Article, Irjp, 2012; 3(6): ISSN: 2230-8407.
4. Compendium view on *Srotas Sharir*, Alapti vinod kumar & Alpati satya prabha, Varanasi printing press, first edition, 2007.
5. Agnivesh Charak Samhita: English translation & critical exposition based on Chakrapani Datta's Ayurveda Dipika, vol- 11. Chokhamba Sanskrit series Varanasi: 5<sup>th</sup> edit, 1998; 5(3): 171.
6. Ghanekar Bhaskar Govind. Sushruta Samhita: Sarira Sthanam Ayurvedarahsyadipika Hindi commentary. New Delhi: Meharchand Lachhmandas publication. Reprint, Nov 2008; 9(25): 245.
7. Bhavmishra. Bhavprakasha: volume-1.commentary by Dr. Bulusu Sitaram. Chaukhambha orientalia Varanasi; 1<sup>st</sup> edit., 2006; 3(271-272): 49.
8. Agnivesh Charak Samhita: English translation & critical exposition based on Chakrapani Datta's Ayurveda Dipika, vol- 11.Chokhamba Sanskrit series Varanasi: 5<sup>th</sup> edit, 199; 5(9): 177.
9. Murty k. r. srikantha. Vagbhata's Astanga Hridayam. vol- 1. Krishana Academy, Varanasi: 3<sup>rd</sup> ed, 1996; 3(41-42): 401-402.



10. Agnivesh Charak Samhita: English translation & critical exposition based on Chakrapani Datta's Ayurveda Dipika, vol- 11. Chokhamba Sanskrit series Varanasi: 5<sup>th</sup> edit, 1998; 5(25): 180.
11. Murty k. r. Srikantha. Vagbhata's Astanga Hridayam. volum-1. Krishana Academy, Varanasi: edit. 3<sup>rd</sup>, 1996; 3(43): 402.
12. Agnivesh Charak Samhita: English translation & critical exposition based on Chakrapani Datta's Ayurveda Dipika, vol-11. Chokhamba Sanskrit series Varanasi: 5<sup>th</sup> edit, 1998; 5(4): 172.
13. Murty k. r. Srikantha. Vagbhata's Astanga Hridayam. vol- 1. Krishana Academy, Varanasi: edit. 3<sup>rd</sup>, 1996; 3(46): 402.
14. Agnivesh Charak Samhita: English translation & critical exposition based on Chakrapani Datta's Ayurveda Dipika, vol- 11. Chokhamba Sanskrit series Varanasi: 5<sup>th</sup> edit, 1998; 5(6): 173.
15. Murty k. r. Srikantha. vagbhata's Astanga Hridayam. volum-1. Krishana Academy, Varanasi: edit. 3<sup>rd</sup>, *Sharir* Sthana, 1996; 3(40-41): 401.
16. Murty k.r. Srikantha. vagbhata's Astanga Hridayam. volum-1. Krishana Academy, Varanasi: edit. 3<sup>rd</sup>, *Sharir* Sthana, 1996; 3(40-41): 401.
17. Murthy K.R. Srikantha. Samhita. Chaukhambha orientalia Varanasi; Reprint edit. Purva khanda, 2009; 5(40-42): 24.
18. Tewari P.V. Kashyapa Samhita or vraddhijivakiya Tantra; chaukhambha visvabharti Varanasi: 1<sup>st</sup> edit., 1996; 4(19): 130.
19. Amarnath Sukhla, Review on concept of *Srotas* with special reference to clinical perspective WJAS, May 2016; 1(1).
20. Brude Priyanka Gajananrao, Concept of *Srotas*-An Ayurvedic Review, Review Article AAMJ (Anveshana, Ayurveda Medical Journal, July-Aug 2015; 1(4): ISSN: 2395-4159.
21. Pawar praddep shivram Et Al an Analytical outlook of determination of Moola Sthana of *Srotas*, Review Article, Irjp, 2012; 3(6): ISSN: 2230-8407.
22. Agnivesh Charak Samhita: English translation & critical exposition based on Chakrapani Datta's Ayurveda Dipika, vol- 11. Chokhamba Sanskrit series Varanasi: 5<sup>th</sup> edit., 1998; 5(23-24): 180.
23. Agnivesh Charak Samhita: English translation & critical exposition based on Chakrapani Datta's Ayurveda Dipika, vol- 11. Chokhamba Sanskrit series Varanasi: 5<sup>th</sup> edit., 1998; 5(23-24): 180.

24. Murty k. r. Srikantha. vagbhata's Astanga Hridayam.vol-1.Krishana Academy, Varanasi: edit.3<sup>rd</sup>, 1996; 3(44-45): 402.
25. Murty k. r. Srikantha. vagbhata's Astanga Hridayam.vol-1.Krishana Academy, Varanasi: edit.3<sup>rd</sup>, 1996; 3(44-45): 402.