

## ROLE OF TRIDOSH IN SHVASAN PRAKRIYA

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**ABSTRACT**

Respiration is very much essential for the life. Respiration (*shvasan prakriya*) mainly includes 2 phases -*Nishvas* (inspiration) and *Uchchhvas* (expiration). According to Ayurveda, *Prana vayu* controls the process of respiration, by active dilation of chest and *udana vayu* is responsible for expiration. In *Pranavaha srotas*, external *prana dravya* is converted in to absorbable form and then it is transported with *rakta* through-out the body. This *prana vayu* enters each and every part of the body and supplies pure to all the cells located at that place and satisfies all the cells with life, in which the *prinan* (instant refreshing effect due to intake of O<sub>2</sub>) of the body takes place and this pure air fills each and every cell. By being present in the cell, they generate energy by stimulation of digestive fire (means stimulation of oxidation

process), converting one substance in to another substance, so that this body can run all its activities properly. The ancient Ayurvedic scholars had clearly depicted the process of respiration in parlance of modern medical sciences. *Yogachudamani Upanishad* has given the reference of exact number of normal respiration in human being (1 day = 21,000 respiration, 1 hr = 900, 1 minute = 15 respiration). the same respiratory rate (15/min.) is now, also accepted by the modern physiology.

**INTRODUCTION**

Respiration is an important physiological process by which the oxygenated air (*Suddha vayu*) is inhaled (*Nishavas*) and simultaneously the deoxygenated air (*Ashuddha vayu*) is exhaled

(*ucchvas*). Respiration process is not directly described in *Brihat-trayi*(*charak*, *Sushrut* and *Astang hridaya*). But respiratory problems are mentioned in abnormalities of *pranavaha srotas*. The process of respiration and the ventilation mechanism described by *Sharangadhara* is closely related to the modern physiological description of respiratory system. *Shvasan* process is mainly concerned with *Prana* and *Udana vayu*, *sadhaka pitta*, *avalambaka kapha*, *rasa*, *rakta*, *mamsa*, *asthi*, *majja* and subtle gaseous waste products.

## AIM AND OBJECTIVES

Physiology of respiration as described by Ayurvedic scholars in ancient times.

### Organs related with shvasan prakriya

*Shvasan* occurs, mainly through *Pranavaha srotas*. But for proper respiration, the functioning of other *srotas*, should also be normal. The main site of *shvasan* is chest. The following organs related with the *shvasan prakriya* –

- (1) 1<sup>st</sup> part (Upper respiratory tract)- from nose to pharynx
- (2) 2<sup>nd</sup> part (Lower respiratory tract)-from pharynx to lungs

### Organs

- Mouth
- Nasika
- Trachea
- *Apastambha* (Bronchi)
- *Phupphusa* (Lungs)

### Relation between Shvasan & Tridosh

*Shvasan* process is mainly concerned with *prana* & *udana vayu*, *sadhak pitta*, *avalambak kapha*, *rasa*, *rakta*, *mamsa*, *asthi*, *majja* & subtle gaseous waste products.

1. ***Prana vayu***- The type of *vata* which helps to take in the useful elements from nature (Like air, Food & Water) is known as *Prana*.

This is also energy on which the life is dependent. The *Prana vayu* plays a vital role in the process of respiration.

**Sites of *prana vayu***- Head & chest are two main sites. Head, throat, mouth, tongue, nose, heart, mind & intelligence are also included in sites of *prana vayu*.

**Function of *prana vayu*** -Inspiration & deglutition are most important functions of *Prana vayu*. Pure air & food (External prana) are taken in. The direction of *Prana* activity is from nature to body (External to internal). If this inward movements get obstructed, problems like asthma begin.

*Prana vayu* from head gives stimulation to all the muscle of respiration, for expansion. It also stimulates diaphragm & abdominal muscles. Due to its activity the chest cavity broadens & inspiration occurs. External *prana* (Pure air & oxygen) gives strength to internal *Prana* (Energy in physical body + senses + mind). If respiration remains normal (With the proper functioning of *prana*) life is maintained.

*Charak* has mentioned following functions- *shthivana*, *kshavathu*, *shvasa*, *udgara* and *aharana*. *Sushruta* has mentioned - *pranavalambana*, *hridaya dharan*. *Vagbhata* has mentioned-control over *buddhi*, *indriya*, *hridaya*, mind, *dhamni* and respiration.

***Pranavaha srotas*** -The *prana vayu* is circulated through *Pranavaha srotas*. The *Pranavaha srotas* is first *srotas* among other *srotas*. This *prana vayu* signifies the atmospheric air which is essential for respiration & vitality of life.

2. ***Udana vayu*** – *Prana vayu* is responsible for inspiration & *Udana vayu* is responsible for expiration. If *prana* activity from nature to human body is considered as *anuloma*, then direction of *Udana vayu* activity is *pratiloma* i.e. opposite to *prana* (although the activity area of both is same).

**Site of *udana vayu***- Nose, pharynx, chest & abdominal organs near umbilicus. Expiration is main function of *udana vayu*. Subtle, gaseous waste, formed during metabolism is expelled out in expiration, but when this function gets disturbed, CO<sub>2</sub> gets accumulated inside the body. Acidosis develops and many functions get hampered, like cyanosis (Discoloration) occurs, patient loses his strength & energy. Sometimes, in serious conditions patient becomes drowsy, memory gets lost, irrelevant speech can occur. Speech, efforts, to give energy & strength, colour to the skin & maintain memory are also the function of *udana vayu*. All above activities have similarity i.e., each activity is an outward expression from the human body, which is matching with the direction of activity of *udana vayu*. The functions expiration & speech are easy to understand.

**Diseases due to vitiation of *Udana vayu*-** The diseases of the organs which are above clavicle (*Urdhwa jatrugata*) due to vitiation of *udana* e.g. The disease of nose, eye, mouth, ear & head. In practice many times problem arise due to disturbance in the co-ordination of *Prana* & *Udana* e.g. hiccough, bronchial asthma. Abnormalities of speech & colour are also common with *udana vayu*.

**3. *Sadhak pitta*-** *Sadhak pitta* is responsible for proper functioning of *buddhi*(intellect), *medha* (Understanding capacity) & *abhimana* (Selfesteem). *Sadhak pitta* exist in the heart & and maintains normal functioning of *buddhi* and mind. *Sadhak pitta* removes the obstacles of *tamas* (Ignorance) and *kapha* (Inertia) and stimulates the mind to understand it's subjects (Knowledge matters). Today we know that intelligence and mental activity are controlled by some part of brain. Hence the site of *sadhak pitta* related with *buddhi* and *Medha*, is in the brain. Vitiated *sadhak pitta* can disturb the mental functions producing mental stress, anxiety, anger and fear which can affect cardiac activity and respiratory rate.

**4. *Avalambaka kapha*-** *Avalambaka kapha* stays in chest and support trick - three elements. *Avalamban* means to give strength and to help the normal functioning of that organ. *Trik* denotes heart, lungs and mediastinum. Unctuous and slimy properties of *kapha* can protect the important organs like heart and lungs. Respiration is a continuous process from birth to death. To prevent the damage of heart and lungs from its continued activity, *kapha* helps by its properties like cool, unctious, soft and steady.

*Avalambaka kapha* from chest by its *udaka karm* (hydration) like *kledana* (moisturizing), *tarpan* (replenish) and *purana* (supplementary) help to other types of *kapha* for their smooth functioning. Due to *kapha*, heart and lungs can function for a longer time, contraction and relaxation can occur smoothly. It helps to hold any foreign matter coming along with the air.

### ***Shwasan - Prakriya* (Respiration process)**

Physiology of respiration is available in ayurvedic and Sanskrit literature. *Shwasa kriya* (Respiration) is a process which takes place from first minute of birth to last minute of death. This process involves two faces as *Nishwasa* (Inspiration) and *uchawasa* (Expiration) going on alternatively.

*Sharangadhara* has explained this procedure in brief. *Pran vayu*, located in the navel comes

out through the throat, passing through or touching the Lotus like heart, which goes out and drinks the nectar (Oxygen) of *Vishnu's feet*. From there, after drinking or taking the *piyush* or nectar of the sky, it again returns rapidly through the same route. In this way, it illuminates the gastric fire while pleasing or satisfying the body till the end of life.

*Sharangadhara* has described first Expiration then Inspiration. Abdominal respiration is the exhalation of the oxygen in the navel. '*Hritkamalantaram*' means the lungs situated near or near the heart, that absorbs oxygenated air from outside and expels expired air from the body. Respiration process has two parts inspiration and Expiration. In this the process of inspiration is active, whereas the process of expiration is passive. That's why *Acharya* has used the word '*Vegetah*' while describing inspiration, it gives the sense of active action.

*Vishnupadamrit* and *Amber Piyush*, both these words are used for oxygen. It satisfies the entire body and revives the fire in the abdomen.

Life of every person depends on *Prana* supplied by *rakta dhatu*. *Prana-dravya* is nothing but oxygen present in air.

### **Difference between *prana Vayu* and *Prana***

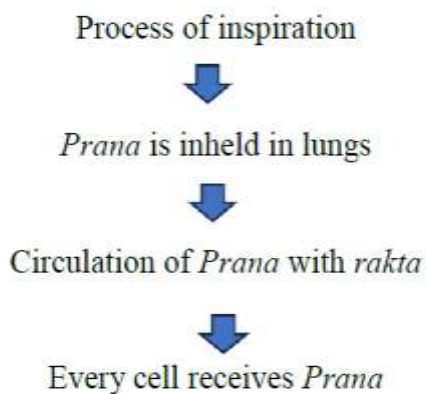
***Prana vayu***- A type of *vata dosha* which is located in cerebral cortex and which controls process of inspiration is called *prana vayu*.

***Prana***- Nutrient in the gaseous form present in air and which enters lungs is called as *prana*. In human beings *prana* is circulated with blood. According to *sharngadhara samhita*, *Prana* is oxygen (*Amber-piyush*) in the air.

***Prananuvartana***- Circulation of oxygen along with *rakta dhatu* is called *Prananuvartana*.

### **Effect of *prananuvartana* on body**

In the process of inspiration *Pran* (oxygen) enters in lungs. In lungs *Prana* combines with *rakta dhatu*. *Pran* along with *rakta* circulates in every part of body. Every cell has *Prana* or oxygen. Human cell uses *Prana* to obtain energy. Human cell needs *prana* to enlight fire and to generate body heat.



## DISCUSSION AND CONCLUSION

There are three *doshas* *vata*, *pitta* and *kapha* which contributes all the body. But out of these three doshas, *prana* and *udana vayu* have very important functions in respiration. According to Ayurveda, *Prana vayu* controls the process of respiration, by active dilatation of chest (expiration is a passive recoiling) and *Udan* *vayu* is responsible for expiration. *Prana vayu* is circulated in *Pranavaha srotas*. In *Pranavaha srotas*, external *Pran dravya* is converted in to absorbable form and then it is transported with *rakta* through out the body.

By the process of inspiration, human being accept *prana dravya* from nature and through expiration, gaseous wastes formed during metabolism is thrown out of the body. Respiration is very much essential for the life. When respiration get disturb, all the body elements suffer. Specially *sadyah pranahara marmas* like heart and brain may stop functioning and the person can die.

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