

A Critical Analysis on Pranayama

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ABSTRACT

Pranayama is explained as one among the Astanga yoga. Here an attempt is made to analyze critically on its procedure, multi dimensional benefits and limitations. Discussion has been made regarding particular posture while practice, duration, diet prior to practice and difference with breathing exercises, physiological changes and effect on nervous system.

Key words: Pranayama, Kumbhaka, Bandha, Pathya, Padmasana

Method of performing Pranayama

Baddha padmasane yogi praanam chandrena poorayat |
Dhaarayitvaa yathaa shakti bhooya suryena rechayet ||
Praanam suryena chakrushya purayet udaram shanai |
Vidhivat kumbhakam krutvaa punah chandrena rechayet ||

Hatha Yoga Pradipika 2/7-8

Sitting in the Padmasana posture, Yogi should inhale Prana through the left nostril (closing the right one) and keeping it confined according to one's ability, it should be expelled slowly through the surya nadi (Right nostril). Then inhaling slowly through surya nadi, the belly should be filled and after performing Kumbhaka, it should be expelled slowly through Chandra nadi (left nostril).

Analysis on sloka

Sloka conveys the general instructions regarding procedure. It gives general idea, theme for the practice, necessity, examples, reasoning for the practice. It also explains General idea about the practice, Posture and

limitations in practice and Assessment of exact strength or self capacity. It gives Preventive, promotive and restorative aspects of its benefits and awares regarding excessive practice and if does do its complication.

Analysis on duration of practice

pranaayaamadiyuktena sarvaroga kshayo bhavet
|
ayukta abhyasa yogena sarvaroga samudbhavah
||
hikkaswasakasascha kasascha shirah
karnakshivedanah |
bhavanti vividha rogaah pavanasya prakopatat ||
HYP 2-16

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If it is done keeping in mind regarding strength of the practioner, then it allivates all the aliments. But if it is not practised accordingly, then it will become cause for many aliments like Hikka, swasa, kasa karna

roga shiroroga and netraroga due to the aggravation of pavana by improper practice.

Analysis on Duration

Pratarmadhyam dine saayam ardharaatre cha kumbhakaan ||
Shanairsheetiparyantam chaturvaaram samabhyaset ||

HYP 2/11

Kumbhaka should be performed gradually 4 times during day and night (morning, noon, evening and midnight), till the number of Kumbhaka for one time is 80 and for day and night together it is 320. This surely is and absurd task for a work a day person and 80 cycles is too hard for an average householder. The practice begins after evacuation of bowels and the bladder. The practice is also advocated on an empty stomach although the modern yogis make allowance for a cup of tea, coffee or milk. At least six hours should elapse after a meal before one can start Pranayama.

Analysis on Diet

Abhyasakale prathame shastam
ksheerajyabhojanam ||

Tathoabhyase drudibhoote na taadrud
niyamagraha: ||

HYP 2/14

During the first stage of the practice the food consisting of milk and ghee is wholesome. When the practice become established, no such restriction is necessary.

This is justifiable as this procedure involves movement of the diaphragm and its pressure on the abdominal viscera and the pelvic floor muscles. These bring about disturbances of O₂ /CO₂ concentration in blood which indirectly affects pH of blood, secretion of HCL in stomach and emptying the pyloric junction and finally the peristaltic movements of the intestines.

Light food is usually taken half an hour after pranayama at least the advanced lessons, demand a lot of mental concentration, the practitioner must choose a quiet, clean and airy place, free from noise, insects and distractions.

Warming up exercises before starting?

Warming up exercises in early morning practice ensure proper blood supply to various parts - as pranayama involves conscious, forcible recruitment of a large number of muscle around the neck, chest, abdomen, perineum and peripheral joints which have to be maintained in a static posture for a long period. Hence a brief sequence of utkatasana, padahastasana, trikonasana, chakravakasana and dandasana can be practiced priorly for a couple of minutes.

How exercises help?

Exercises involve movement of diaphragm and its pressure on abdominal viscera and pelvic floor muscles. Disturbances of Oxygen/ Carbon di oxide concentration in blood which indirectly affects pH of blood, Secretion of HCL in stomach, Emptying pyloric junction, Peristaltic moments of intestine

Why specific posture?

Spine is kept erect and perpendicular to floor and pelvis remains tilted at angle of 30 degree. The cross legged extended arm positions are deliberate as they give stability of posture. This specific posture relaxes the big muscle of arms and thighs which can get tensed up in standing.

PADMASANA IS BEST

Upper part of vertebral column remains relatively more stretched in Siddhasana and in Vajrasana, while the lumbar region suffers from mild stretching. Whereas in the final posture (stithi) of Padmasana, thighs are lower level than groins, the lower part of abdomen remains stretched and diaphragm finds a lot of space for its wide excursions. Hence the

padmasana is the most suitable posture to practice pranayama.

How differ from deep breathing exercises?

In pranayama, respiration carried out against increased resistance created at the airways. It involves specific time sequence. Kumbhaka phase in it is a unique characteristic. In Deep Breathing Exercises, muscles of lower limb & arms are kept inactive by adopting sitting postures whereas in this pranayama, one can appreciate the active participation of Lower abdomen muscles & pelvic floor muscles. Bandha involved here are set of novel features. By the focus of attention, auto suggestive experiences are invoked. Special significance is there in alternate breathing techniques.

PHYSIOLOGICAL CHANGES

By the Lung ventilation, lung circulation improves. Diaphragm pushed up to high level and thereby reducing the dead space volume of lung. CO₂ tension in exhaled air and in alveolar air increases. It increases the vital capacity of lungs. Mild hypoxia toleration stimulates myocardium to increase its vascularization as recorded at higher altitudes

INFLUENCES NERVOUS SYSTEM

Respiratory centers and their controlling influences come from a level higher than the centers responsible for maintenance of muscle tone. Regions higher than hypothalamic level like medial, basal cortical & sub cortical areas

exerts their influence over the respiratory centre. It brings about the integration of involuntary (Autonomic) nervous mechanism geared towards postural tone and balance with higher cortical (CN centers) that are under voluntary control. It sets up a cortical neural activity, which becomes operational in influencing or controlling many involuntary and AN activities.

LIMITATIONS

Longer time unit of pranayama was not found more advantageous as far as elimination of CO₂ and absorption of O₂ concerned. Value of Kumbhaka in regard to O₂ absorption and CO₂ elimination was found to be negligible. Kumbhaka with Uddiyana and Jalandhara bandha - slowing down of HR

CONCLUSION

Pranayama is a unique procedure in yoga and having multi dimensional benefits. One should practice under guidance of the masters. Daily practice is advised. Further researches on physiological changes are need for the hour.

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