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## Unveiling the concepts of Kapalbhathi - Shatkarma and Bhastrika - Pranayama

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### Abstract

The Kapalbhathi-Shatkarma and Bhastrika-Pranayama, two traditional yogic disciplines are deeply rooted in Indian Philosophy of Yoga. In this modern era, these yogic practices have gained worldwide recognition for their potential health benefits. However, in general public, there is a myth of considering Kapalbhathi as a Pranayama. This article provides a comprehensive overview of the historical and philosophical underpinnings of Kapalbhathi-Shatkarma and Bhastrika-Pranayama, tracing their origins to ancient texts and scriptures. Further we discuss the scientific aspects of these practices, considering the potential challenges and precautions associated with their adoption for reaping the maximum benefits. This review article bridges the gap between ancient wisdom and contemporary science, providing valuable insights into the potential applications of these practices in promoting physical and mental well-being in today's world.

**Keywords:** Bhastrika, kapalbhathi, pranayama, shatkarma

### 1. Introduction

Yoga, an ancient Indian philosophy, encompasses a comprehensive approach to well-being through integrating physical, mental, and spiritual practices. The yogic practices like Yama and Niyama (ethical principles), Shatkarma (cleansing practices), Asana (physical postures), Pranayama (controlled breathing) and Dhayana (meditation) harmonize the body, mind and soul.

Various types of Yoga offer unique methods and philosophies to suit individual preferences and needs *viz.* Hatha Yoga, Raja Yoga, Gyana Yoga, Karma Yoga, Bhakti Yoga etc. Within this rich tapestry of yogic traditions, Hatha Yoga stands out as the foundational cornerstone for physical health and mental harmony. Hatha Yoga consists of seven limbs: Shatkarma, Asana, Pranayama, Pratyahara (sensory withdrawal), Dharana (concentration), Dhyana, and Samadhi (contemplation) <sup>[1]</sup>. Among the diverse yogic practices Kapalbhathi-Shatkarma and Bhastrika-Pranayama are popular and offering a comprehensive approach to physical health and mental harmony. This article reveals the techniques and scientific benefits of Kapalbhathi-Shatkarma and Bhastrika-Pranayama.

### 2. Kapalbhathi - Shatkarma

The Shatkarma encompasses a series of six purification techniques designed to cleanse the body by removing impurities and toxins from various bodily systems, for health promotion. Shatkarma are Neti (nasal cleansing), Dhauti (digestive tract cleansing), Nauli (abdominal massage), Basti (colonic irrigation), Kapalbhathi (frontal brain cleansing), and Trataka (gazing). These practices purify the body and prepare the practitioner for advanced yogic techniques.)<sup>[1]</sup> Out of these practices the Kapalbhathi is popular and widely practiced. Kapalbhathi - Shatkarma is mentioned in various ancient yogic texts, providing insights into its technique and significance. Known for its invigorating effects, Kapalbhathi involves rapid and forceful expirations while maintaining passive inspirations. This dynamic technique not only clears the respiratory passages but also enhances oxygenation of the blood, revitalizes the brain, and sharpens mental clarity.

## 2.1 Kapalbhathi in Hatha Yoga Pradipika

The sequence of Shatkarma described in Hatha Yoga Pradipika are Dhauti, Basti, Neti, Trataka, Nauli and Kapalbhathi. Kapalbhathi - Shatkarma described here as, performing rapid expirations and inspirations, resembling the bellows of a blacksmith. This practice of Kapalbhathi is renowned for its ability to effectively alleviate Kapha Dosha (mucous disorders)<sup>[2]</sup>.

## 2.2 Kapalbhathi in Gherand Samhita<sup>[1]</sup>

In Gherand Samhita, the Shatkarma practices namely Dhauti, Basti, Neti, Lauliki, Trataka, Kapalbhathi (Bhalabhathi) are detailed as essential purification techniques. Bhalabhathi should be practised in three different ways viz. Vatakrama, Vyutkrama and Shitakrama and thus cure disorders of phlegm. Types of Kapalbhathi described in Gherand Samhita are as under:

### 2.2.1 Vatakrama Kapalbhathi

In this practice, one should inhale through the left nostril (Ida) and exhale through the right nostril (Pingala), and then inhale through the right nostril (Pingala) and exhale through the left nostril (Ida). This is one round of Vatakrama Kapalbhathi. One should rapidly inhale and exhale without any retention of breath (Kumbhak), and this practice effectively prevent phlegm-related disorders.

### 2.2.2 Vyutkrama Kapalbhathi

The drawing of water through both nostrils and expelling it through mouth is called Vyutkrama Kapalbhathi. The repeatedly practicing this technique aids in the healing of phlegm-related diseases.

### 2.2.3 Shitakrama Kapalbhathi

The sucking of water by mouth with producing hissing sound, and then expelling it through both nostrils is known as Shitakrama Kapalbhathi. To engage in this practice could enhance physical appearance. With the regular practice of it, the onset of old age is delayed, fever is prevented, and the body is brought under control. Additionally, this practice helps in maintaining a healthy state by alleviating phlegm-related disorders.

## 2.3 Kapalbhathi in Hatha Ratnawali<sup>[3]</sup>

In Hatha Ratnawali, the Kapalbhathi is described under the Ashta-Karma (8 cleansing practices). These Ashta-Karma are Chakri, Nauli, Dhauti, Neti, Basti, Gajakarini, Trataka and Mastakabhranti (Kapalbhathi). Performing rapid inspiration and expiration, akin to the bellows of an ironsmith, is known as Kapalbhathi (Kapalabhathi). This renowned practice has ability to eliminate all diseases.

By swiftly moving the head from side to side with inspiration and expiration, one engages in the practice of Kapalbhathi. This practice helps in relieving Kapha and Pitta dosha, as well as diseases caused by excessive water accumulation. Further, it cleanses the forehead and Brahmachakra (third eye region).

### 2.3.1 Benefits

The purification of the ajana-chakra is achieved through the practices of Neti (nasal cleansing) and Trataka (gazing meditation). On the other hand, the entire body is purified through Basti (cleansing of the colon) and Bhastri-karma (Kapalabhathi).

## 2.4 Contemporary practice of Kapalbhathi - Shatkarma

Sit in any comfortable meditative posture, keep the head and

spine straight with both hands resting on respective knees. Close the eyes, take normal breath and relax the body. Exhale forcefully through both nostrils with the contraction of anterior-abdominal-wall muscles, then with the relaxation of abdominal muscles the inspiration takes place itself (passively). This is one round of Kapalbhathi. Repeat it for 10 to 20 rounds at a time, with precautions and direct guidance of Yoga expert. It stimulates the abdominal muscles, tones the abdominal organs, improve digestive power and facilitate the removal of toxins from different channels of body and beneficial in stress. It should not be practiced by the patients with hypertension, hernia, peptic ulcer, heart diseases, epilepsy etc<sup>[4]</sup>.

## 3. Bhastrika - Pranayama

Pranayama is a practice that focuses on the regulation and control of breath to harness vital energy (prana) within the body. Among different Pranayama techniques viz, Sahita, Suryabhedha, Ujjayi, Sheetal, Bhastrika, Bhramari, Murcha, Kevali, Sitkari, Plavini<sup>[1]</sup>.

The Bhastrika Pranayama is described in various ancient yogic texts, offering comprehensive insights into its practice and significance in the realm of Yoga.

### 3.1 Bhastrika in Hatha Yoga Pradipika<sup>[2]</sup>

The eight Kumbhakas described in Hatha Yoga Pradipika are Suryabhedha, Ujjayi, Sitkari, Sheetal, Bhastrika, Bhramari, Moorchha and Plavini.

For the practice of Bhastrika Pranayama, firstly sit in Padmasana with aligning the neck and abdomen, then exhale through both nostrils. Subsequently, inhale the air swiftly up to the heart lotus, creating a resonating sensation from the heart, through the throat, and up to the cranium.

The breath is repeatedly inhaled and exhaled in a manner resembling the motion of bellows being pumped. In this manner, one maintains the continuous movement of breath with mindfulness and a steady body. If the body becomes fatigued, then inhale through the right nostril.

When the abdomen is filled with air, promptly and securely close the nostrils without employing the index and middle fingers, but rather using the thumb and ring finger, as in the Nasikagra Mudra.

Following a systematic practice of pranayama and retention, exhale through the left nostril. This process aids in the elimination of imbalances related to wind, bile, and mucus while enhancing the digestive fire.

#### 3.1.1 Benefits

Bhastrika Pranayama swiftly awakens the kundalini energy, offering a pleasurable and beneficial experience while clearing obstructions caused by excessive mucus accumulation at the entrance to the brahma nadi. The kumbhaka known as Bhastrika plays a pivotal role in breaking the three granthis (psychic/pranic knots). Therefore, it is the yogi's responsibility to diligently practice Bhastrika.

### 3.2 Bhastrika in Gherand Samhita<sup>[1]</sup>

There are eight Kumbhakas, namely Sahita, Suryabhedha, Ujjayi, Sheetal, Bhastrika, Bhramari, Murcha and Kevali.

As the bellows of the blacksmith is inflated again and again, similarly, one should steadily move the air in and out using both the nostrils.

Doing it twenty times, with Kumbhaka and then exhale in the manner laid down.

A wise man should perform this Bhastrika three times (in one

sitting). There will be no disease or suffering. Day by day he will gain in health.

### 3.3 Bhastrika in Hatha Ratnawali<sup>[3]</sup>

Bhastrika, Bhramari, Suryabhedha, Ujjayi, Sitali, Murccha, Sitkari and Kevali are the eight Kumbhakas. Bhujangakarani is the ninth Kumbhakas.

Pranayama, which is of the nature of pranava, is three-fold, i.e. rechaka, puraka and kumbhaka. Rechaka stands for expiration to the limit. Puraka means opposite of it, while kumbhaka is maintenance of stillness of breath.

A wise should rapidly blow the bodily air like the bellows of an ironsmith until he becomes exhausted. Thereafter, he should slowly inhale through the right nostril so that the cavity fully fills up with air. Now using the fingers other than the middle and the index fingers, he should firmly hold the nose and retain the air as told before and exhale through the left nostril.

#### 3.3.1 Benefits

This Bhastrika-Kumbhaka cures the disorders caused due to vitiation of Vata, Pitta and Kapha, stimulates the gastric fire, removes the obstacles like phlegm etc. that stuck at the opening of brahma-nadi (Susumna). This practice should be given a special emphasis.

### 3.4 Contemporary practice of Bhastrika - Pranayama

Sit comfortably in a meditative pose, put hands on knees and close the eyes. Take forceful inspiration and forceful expiration through both nostrils, with the help of chest muscles. This method of respiration produces bellows-like sound and diaphragm moves rapidly and to massage and stimulate the abdominal organs. Practice 10 to 20 rounds, under the guidance of a Yoga expert. The rapid breath exchange boosts oxygen intake, regulates metabolism, generate heat and eliminate toxins. Bhastrika is not recommended for individuals with insomnia, high blood pressure, heart disease, hernia, gastric ulcer, stroke, epilepsy, glaucoma and retinal problems.<sup>[4]</sup>

## 4. Relevant Researches related to Kapalbhati - Shatakarma

There are many anecdotal claims about the benefits of Kapalbhati, however scientific researches on this specific practice are limited. Few are listed here.

### 4.1 Effect of Kapalbhati on Blood Pressure and Heart Rate

Nivethitha *et al.*, found that during the practice of Kapalabhathi by 20 healthy individuals led to a significant increase in systolic blood pressure (SBP), diastolic blood pressure (DBP), mean arterial pressure (MAP), heart rate (HR), and cardiac output (CO) and reduction in pulse interval (PI)<sup>[5]</sup>. Hence it should be avoided by hypertensives.

### 4.2 Effect of Kapalbhati on Pulmonary Function

Masanta found that practice of Kapalbhathi, Anuloma Viloma and Bhramari Pranayama in middle age sedentary women lead to significantly improved resting respiratory rate, vital capacity, peak expiratory flow rate and systolic blood pressure as compared to that of control group<sup>[6]</sup>.

### 4.3 Effect of Kapalbhathi Pranayama in the Blood Sugar level in Diabetic patients

Raja *et al.*, found that regular practice of Kapalbhathi can

reduce the blood sugar level of the borderline diabetics<sup>[7]</sup>.

## 5. Relevant Researches related to Bhastrika - Pranayama

Some scientific researches specifically on Bhastrika Pranayama are as under

### 5.1 Effects of Pranayama Techniques on Pulmonary Function

Budhi *et al.*, found that the forced vital capacity (FVC), forced expiratory volume in the first second (FEV1), peak expiratory flow rate (PEFR), and maximum voluntary ventilation (MVV) functions of lungs were increased after the practice of Bhastrika Pranayama<sup>[8]</sup>.

### 5.2 Impact of Bhastrika Pranayama on Heart Function

Niveditha *et al.*, find that there is significant increase in diastolic blood pressure, mean arterial pressure, heart rate and cardiac output as well as significant decrease in pulse interval during and after 5 min of Bhastrika practice compared to baseline<sup>[5]</sup>.

### 5.3 Impact of Bhastrika Pranayama on Anxiety

Sharma *et al.*, found that there is significant decrease in state trait anxiety after 18 min of Bhastrika practice compared to baseline<sup>[9]</sup>.

### 5.4 Bhastrika Pranayama and body Weight

Bal *et al.*, found that a significant decrease in body fat percentage and increase in lean body weight in Bhastrika group compared to control group<sup>[10]</sup>.

### 5.5 Bhastrika Pranayama and Insomnia

Ranawat *et al.*, found significant decrease in insomnia scores in all three groups (Bhastrika group, ayurvedic drug group and mixed group) at 45<sup>th</sup> day as compared to day 0 (Baseline). Although the intensity was higher in mixed group, followed by Bhastrika group and drug group<sup>[11]</sup>.

## 6. Conclusion

The insight of ancient textual and modern scientific aspects of Kapalbhathi - Shatkarma and Bhastrika – Pranayama are discussed at length with their health benefits. As per hatha yogic texts the procedures of both are compared to bellows of a blacksmith, however in contemporary practice their techniques are different. Kapalbhathi alleviate Kapha Dosha as described Hatha Yoga Pradipika and Gherand Samhita where as in Hatha Ratnawali it is described as to eliminate all diseases. This yogic technique involves forceful expiration through both nostrils with the help of anterior-abdominal-wall muscles. It stimulates the abdominal muscles, tones the digestive organs, improve digestive power and facilitate the removal of toxins from different channels of body and beneficial in stress. On the other hand, the Bhastrika Pranayama eliminates the imbalance of Vata, Pitta and Kapha Dosha as described in Hatha Yoga Pradipika and Hatha Ratnawali, and removes all diseases as described in Gherand Samhita. This yogic breathing technique, involves forceful inspiration and expiration with the help of chest muscles. It improves lung capacity, enhances blood circulation, increases oxygen intake, regulates fat metabolism and beneficial in anxiety and insomnia. These cost-effective yogic practices have the potential to promote physical and mental well-being. Hence, considering the precautions and guidelines, the Kapalbhathi - Shatkarma and Bhastrika – Pranayama should be inculcated in daily routine.

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