

## A STUDY ON ROLE OF BHASTRIKA PRANAYAMA IN PREMATURE AGEING PROCESS

Rajendra Singh Ranawat<sup>1\*</sup>, Pushpendra Sharma<sup>2</sup>, Vishnu Prasad Gautam<sup>3</sup>,  
Narayan Singh Chundawat<sup>4</sup>

1. Assistant Professor, Dept. of Swasthavritta and Yoga, MSM Institute of Ayurveda, BPSMV, Khanpur Kalan, Sonapat, Haryana, India.
2. Associate Professor, Dept. of Basic Principles, MSM Institute of Ayurveda, BPSMV, Khanpur Kalan, Sonapat, Haryana, India.
3. Associate Professor, Dept. of Rasashastra, MSM Institute of Ayurveda, BPSMV, Khanpur Kalan, Sonapat, Haryana, India.
4. Professor & Head, Dept. of Swasthavritta and Yoga, Tatiya Ayurved College, Sri Ganganagar, Rajasthan, India.

Received: 13-08-2014; Revised: 30-09-2014; Accepted: 21-10-2014

### Abstract

Ageing is a universal and natural phenomenon that affects each and everyone in a certain way. According to Ayurveda the Jara (Ageing) is a natural phenomenon like hunger, thirst and sleep. The ageing (Jara) is described as of two types i.e. Kalaja (natural ageing) and Akalaja (premature ageing). The Bhastrika Yogic Kriya is a well known breathing exercise (Pranayama) which is effective in premature ageing phenomenon. The study was conducted on 30 clinically diagnosed and confirmed cases of Akalaja Jara (premature ageing) and was asked to perform Bhastrika Pranayama. These 30 registered patients were recommended to do Bhastrika Kriya for 15-20 min. after performing Sukshma Vyayama for 60 days. It was observed that Bhastrika Pranayama not only provides better relief in symptoms of Akalaja Jara but also increases the antioxidant potential of body.

**Keywords:** Premature Ageing; Yoga; Bhastrika Pranayama.

### \*Address for correspondence:

Dr. Rajendra Singh Ranawat,  
Assistant Professor,  
Department of Swasthavritta and Yoga,  
MSM Institute of Ayurveda,  
BPSMV, Khanpur Kalan, Sonapat, Haryana – 131 305  
Email: [raj007ranawat@gmail.com](mailto:raj007ranawat@gmail.com)

### Cite This Article

Rajendra Singh Ranawat, Pushpendra Sharma, Vishnu Prasad Gautam, Narayan Singh Chundawat. A study on role of bhastrika pranayama in premature ageing process. Ayurpharm Int J Ayur Alli Sci. 2014;3(12):361-368.

## INTRODUCTION

Ageing is a universal and natural phenomenon that affects each and everyone in a certain way. Generally ageing may be considered an irreversible process that begins or accelerates at maturity and results either in an increasing or range of deviation from the ideal state or in a decreasing rate of return to ideal state or both.

According to Ayurveda the Jara (Ageing) is a natural phenomenon like hunger, thirst and sleep.<sup>[1]</sup> The mean life expectancy has changed significantly in the past decades and the growing number of older people has already made a significant impact on the health care system as well as socio economic condition of the country.

In India and world population of older person in 2000 A.D. is more than 65% of total population.<sup>[2]</sup> This population comes under dependent population because part of population is non-productive.

The ageing (Jara) is described is two types.<sup>[3]</sup>

1. Kalaja – We cannot prevent it.
2. Akalaja – It is considered as early ageing process due to various etiological factors and most of them belong to psychosomatic factors so some efforts could be made for preventing the early ageing process or Akalaja Jara.

Nobody knows exactly why a person growing older. According to Ayurvedic text Charaka Samhita, some factors are needed in creation of any matter but nothing is liable for devastation.<sup>[4]</sup> Another theory says ageing is the result of randomly occurring cell injuries but not repairing of them.<sup>[5]</sup> Some say that ageing is an evitable process built into genetic program of any survival being. Some says that cells gradually become less capable to maintain themselves healthy and active.<sup>[6]</sup>

Ayurveda and Yoga are the sciences of Indian origin and these both believe in happy and long life which is away from diseases. Therefore it is tried to establish a non medicinal remedy for the people who are suffering from premature ageing phenomenon or who are susceptible for Akalaja Jara.

The Bhastrika Yogic Kriya is a well known breathing exercise (Pranayama) which is effective in premature ageing phenomenon.

## MATERIAL AND METHODS

### Selection of Cases

The study was conducted on 30 clinically diagnosed and confirmed cases of premature ageing (Akalaja Jara) selected from the OPD/IPD of Govt. Ashtang Ayurved College and Hospital, Indore, Madhya Pradesh.

### Inclusion criteria

1. Individuals between ages of 40 to 70 years of both sexes were selected randomly for the study.
2. Individuals who were either healthy or having diseases, which are generally found in aged people without any complication of other disease were included in the study.

### Exclusion criteria

1. Individuals above 70 years and below 40 years of age of both sexes.
2. Patients with acute and severe illness like Myocardial Infarction (M.I.) Cerebro-vascular Accident (C.V.A.), Congestive Cardiac failure (C.C.F.) Chronic obstructive pulmonary disease (COPD), Meningitis, Tuberculosis, Carcinomas, Hepatitis, Acute pain condition and similar other disorders.
3. Patients having severe and malignant Hypertension.

4. Patients with Major psychiatric illness like Epilepsy, Schizophrenia, Major Depressive Psychosis, etc.
5. Patients with Alcohol dependence, drug addicts e.g. Opioid, Smack, Charas etc.
6. Patients having severe malnourishment.

## 2. Criteria of assessment

For evaluation of the clinical efficacy of Bhastrika Yogic Kriya to assessment of Akalaja Jara to the patients following parameters were adopted before and after the therapy.

### A. Clinical Parameters

- i. All patients registered for the clinical trial were looked for any changes in their clinical manifestations and growing feeling of well being, if any produced after the therapy.
- ii. Through clinical examination of the patients including measurement of pulse, blood pressure in mm. of Hg., general built, weight, height, cyanosis, pallor, clubbing lymph nodes etc., at every follow up visit.

## Contents of the Trial Therapy

### Bhastrika Yogic Kriya

After performance of the Sukshma Vyayama, Yogic Kriya Bhastrika were recommended for 15-20 minutes.

### Administration of the therapy

30 clinically diagnosed and confirmed patients of Akalaja Jara (premature ageing) were selected. These 30 registered patients were recommended Bhastrika Kriya for 15-20 min. after performance of Sukshma Vyayama (Minor exercise consisting of stretching hands and toes). This process was carried out for 60

days. All the patients were advised to follow the Pathya and Apathya, as per the descriptions available in Ayurvedic<sup>[3]</sup> and modern text, during the therapy.

### Duration of clinical trial

Duration of clinical trial was for 60 days.

### The method of practice Padmasanam and Bhastrika

After sitting on the plane floor, unfold both the legs straight. Now establish the left foot on the right thigh (groin), in the position that ankle remain near to umbilicus. Again by using same method, place the right foot on the left thigh, keep both ankles near the umbilicus and keep straight the backbone. Keep both knees touch the floor. After sitting in Padmasanam, patients should be advised to inhale slowly, deeply as long as possible and with the mouth closed, to exhale forcibly through both the nostrils in a series of sixty expulsing within one minute. Initially this procedure was repeated for total three rounds of one hundred and eighty expulsions, gradually the repetition were increased according to the capacity and practice of the patient or a maximum for 20 minutes.<sup>[7][8][9]</sup> (Figure 1)

According to various texts of Yoga i.e. Gheranda Samhita Yoga Kundalyoupanishada and Hatha Yoga Pradipika, there is explored that the Bhastrika Pranayama deliberates the human being from these Granthis or karmas (Aagami, Samchit and Prarabdha) and may be helpful to achieve the main target of life or birth, that is Nirvana (Moksha).<sup>[5]</sup>

Apart from this philosophical view, for the elimination of Akalaja Jara in the population, by the Bhastrika Yogic Kriya we can consider these three Granthis (Glands) as under,

- Pineal gland - Brahma granthi

- Pituitary gland - Poshanak granthi or Vishnu granthi.
- Adrenaline gland - Rudra or Maheshwar granthi.

In present era due to ultra modernization and mechanization human being bears a great amount of mental stress and strain. This has resulted into marked increase of mental unrest causing various psychological and psychosomatic disorders.<sup>[10]</sup> And here is exactly where Yoga plays a very important role in averting and treating them. Yoga is not the science of particular field but it is the science of human life itself. Yogic practices are not mere physical exercise but they recondition mind and body to their utmost. Yoga constitutes an overall effect on human body. Yoga procedures affect the vital organs and the vital systems to their utmost.

It has been proved that Yoga in general, achieves voluntary control over the autonomous nervous system by establishing equilibrium between the sympathetic and parasympathetic nervous systems through the hypothalamic limbic system. Thus Yoga easily achieves control over mind which depends entirely on an autonomous nervous system.

Bhastrika Pranayama removes the excess of the Vata, Pitta, Kapha, vitalizes the Agni, arouses the Kundali, removes defects in the mouth, bestows auspiciousness, removes impediments such as Kapha remaining in the interior of the opening of the Brahma Nadi and is capable of bursting through the three knots as the result of effectively practicing Bandhas. The Bhastrika Pranayama balances and strengthens the nervous system as well as endocrine system by inducing peace, tranquility and one-pointedness of mind. It works on microcirculation of blood and improves that. It results the regulation of pineal, pituitary and adrenaline glands, which are responsible for metabolism.<sup>[11]</sup>

## Evaluation Parameters for Assessment of Treatment Efficacy

Subjective Assessment: Ageing symptoms with reference to different system (Table 1)

- Sleep
- Anorexia
- Indigestion
- Constipation
- Weight loss
- Poor Sensory Perception
- Lack of Memory
- Adjustment to weather
- Wrinkle of Skin
- Dyspnoea
- Palpitation
- Chest pain
- Joint pain
- Sex desire
- Incontinence of urine<sup>[12]</sup>

TLC, DLC and ESR, Hb%, lipid profile, Blood sugar were recorded to rule out any pathological condition.

## RESULTS AND DISCUSSION

According to Bhagavadgita, Yoga is the state of that eternal tranquility of mind which keeps the mind being undistracted and allows self-realization.<sup>[13]</sup>

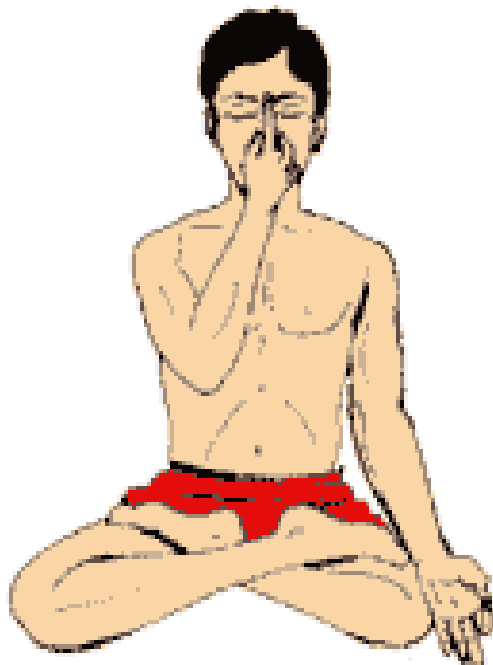
In present era due to ultra-modernization and mechanization human being bears a great amount of mental stress and strain. This has resulted into marked increase of mental unrest causing various psychological and psychosomatic disorders. And here is exactly where Yoga plays a very important role in averting and treating them. Yoga is not the science of particular field but it is the science of human life itself. Yogic practices are not mere physical exercise but they recondition mind and body to their utmost. Yoga constitutes an overall effect on human body.

**Table 1: Gradation of Subjective parameters**

<b>Sleep</b>		
0	-	Normal
1	-	Occasionally disturbed
2	-	Frequently disturbed
3	-	Insomnia
<b>Anorexia</b>		
0	-	Person takes normal diet (3 meal of usual amount)
1	-	Person takes 2 meal of slightly reduced amount
2	-	Person takes only 1 meal of small amount
3	-	Person is unable to take any food
<b>Indigestion</b>		
0	-	no Indigestion
1	-	Indigestion on heavy meal
2	-	Indigestion on taking normal diet
3	-	Indigestion on taking below normal diet
<b>Constipation</b>		
0	-	No constipation
1	-	Slight constipation with one stool/day
2	-	Marked constipation with one motion in two or more days
3	-	Marked constipation with drug abuse
<b>Weight loss</b>		
0	-	No weight loss
1	-	Slight weight loss
2	-	Demarkable weight loss but healthy feeling
3	-	Drastic weight loss with feeling of weakness
<b>Poor Sensory Perception</b>		
0	-	Normal perception
1	-	Occasionally difficulty in perception
2	-	Marked limitation in perception
3	-	Persist disturbed perception every time
<b>Lack of Memory</b>		
0	-	Normal memory
1	-	Loss of long-term memory
2	-	Loss of short-term memory
3	-	Forget name and identify things
<b>Adjustment to weather</b>		
0	-	Well tolerated
1	-	Slight intolerance to seasonal variation
2	-	Intolerance to seasonal variation for a week
3	-	Intolerance to season variation for a month
<b>Wrinkle of Skin</b>		
0	-	No wrinkle
1	-	Wrinkle on face
2	-	Wrinkle on some part of body
3	-	Wrinkle on whole body
<b>Dyspnoea</b>		
0	-	No limitation of ordinary physical activity
1	-	Slight limitation of physical activity
2	-	Marked limitation of physical activity
3	-	Symptoms present even at rest
<b>Palpitation</b>		
0	-	No palpitation
1	-	Palpitation on marked exertion
2	-	Palpitation on mild exertion
3	-	Palpitation having no relation to exertion and time

		<b>Chest pain</b>
0	-	No limitation of ordinary physical activity
1	-	Slight limitation of physical activity
2	-	Marked limitation of physical activity
3	-	Symptoms present even at rest
		<b>Joint pain</b>
0	-	Absent
1	-	Often
2	-	Always but bearable
3	-	Always affects the routine work
		<b>Sex desire</b>
0	-	Sex desire more than once in a week
1	-	Sex desire in a week
2	-	Sex desire in a month
3	-	Sex desire not at all
		<b>Incontinence of urine</b>
0	-	Full control
1	-	Occasional
2	-	Dribbling in Micturition
3	-	Dribbling with marked pain and urgency of urine

**Figure 1: The method of practicing Bhastrika Pranayama**



Yoga procedures affect the vital organs and the vital systems to their utmost.

It has been proved that Yoga in general, achieves voluntary control over the autonomous nervous system by establishing equilibrium between the sympathetic and parasympathetic nervous systems through the Hypothalamic limbic system.<sup>[14]</sup> Thus Yoga easily achieves control over mind which depends entirely an autonomous nervous system.

According to Gheranda Samhita, Bhastrika Pranayama removes the excess of the Vata, Pitta, Kapha, vitalizes the Agni, arouses the Kundali, removes defects in the mouth, bestows auspiciousness, removes impediments such as kapha remaining in the interior of the opening of the Brahma Nadi and is capable of bursting through the three knots as the result of effectively practicing Bandhas. The Bhastrika Pranayama balances and strengthens the nervous system as well as endocrine system by inducing peace, tranquility and one-pointedness of mind. It works on microcirculation of blood and improves that. It results the regulation of pineal, pituitary and adrenaline glands, which are responsible for metabolism.<sup>[15]</sup>



**Table 2: Clinical Evaluation of patients treated with Bhastrika Pranayama**

Symptoms	N	Mean		Dif.	% of Change	SD	SE	t	P
		BT	AT						
Sleep	27	1.74	0.37	1.37	78.72	0.56	0.11	12.61	<0.001
Anorexia	22	1.91	0.36	1.55	80.95	0.86	0.18	8.45	<0.001
Indigestion	20	1.95	0.50	1.45	74.36	0.60	0.14	10.72	<0.001
Constipation	27	2.48	0.19	2.30	92.54	0.54	0.10	22.03	<0.001
Weight loss	9	1.22	0.44	0.78	63.64	0.44	0.15	5.29	<0.001
Poor Sensory Perception	5	1.20	0.40	0.80	66.67	0.45	0.20	4.00	<0.001
Lack of Memory	9	1.22	0.67	0.56	45.45	0.53	0.18	3.16	<0.05
Adjustment to weather	21	1.14	0.10	1.05	91.67	0.38	0.08	12.50	<0.001
Wrinkle of Skin	30	1.77	1.37	0.40	22.64	0.50	0.09	4.40	<0.001
Dyspnoea	25	1.28	0.64	0.64	50.00	0.49	0.10	6.53	<0.001
Palpitation	26	1.42	0.69	0.73	51.35	0.45	0.09	8.24	<0.001
Chest pain	17	1.18	0.24	0.94	80.00	0.43	0.10	9.05	<0.001
Joint pain	28	1.25	0.79	0.46	37.14	0.51	0.10	4.84	<0.001
Sex desire	14	1.07	0.71	0.36	33.33	0.50	0.13	2.69	<0.05
Incontinence of urine	4	1.00	0.75	0.25	25.00	0.50	0.25	1.00	>0.01

Bhastrika regulates the functions of three knots (Trayagranthi) pineal, pituitary and adrenaline glands. There are so many scientific views regarding with these three glands hormones and effects on metabolism are available in modern medical science.<sup>[11]</sup> It is very clear from above discussion that the exploration of a Yogic remedy of Akalaja Jara may be stopped at Bhastrika Pranayama.

Administration of Bhastrika Pranayama has reduced the burden of the patients in terms of loss of vital capacity and economic power. Sleep, Ajirna (Indigestion), Agnimandhya (anorexia) and Malabaddhata also reduced significantly by Bhastrika Pranayama. (Table 2)

## CONCLUSION

Bhastrika regulates the functions of three knots (Trayagranthi) pineal, pituitary and adrenaline glands. There are so many scientific views regarding with these three glands hormones and effects on metabolism are available in modern medical science.

It is clear that, Bhastrika Yogic Kriya regulates these three glands and this research establishes the Bhastrika Pranayama as a best non-medicinal yogic remedy for pre mature ageing syndromes.

Bhastrika Pranayama alone may diminish above symptoms because it not only produces symptomatic improvement but also improves various mental faculties to produce significant improvement in metabolism of all the patients. Thus it can be concluded that Bhastrika Pranayama not only provides better relief in symptoms of Akalaja Jara but also increases the antioxidant potential of body. So it is expected that this procedure must be effective in ageing process.

## REFERENCES

1. Amar Singh. Amarkosha. Bhanuji Dixit, editor. 4<sup>th</sup> ed. Varanasi: Chaukhambha Sanskrit series Office; 1944.p.125
2. Suryakantha AH. Community Medicine with Recent Advances. 2<sup>nd</sup> ed. New Delhi: Jaypee Publication; 2010.p.710.

3. Caraka. Caraka Samhita (Vidyotini Hindi Commentary), Vol.1. Sastri KN, Caturvedi GN, editors. 1<sup>st</sup> ed. Varanasi: Caukhambha Bharati Academy; 2001. Sutra sthana, 17/77.p.341.
4. Caraka. Caraka Samhita (Vidyotini Hindi Commentary), Vol.1. Sastri KN, Caturvedi GN, editors. 1<sup>st</sup> ed. Varanasi: Caukhambha Bharati Academy; 2001. Sutra sthana, 16/28.p.253.
5. Swatmarama. Hatha Yoga Pradipika. Chamanlal Gautam, editor. 1<sup>st</sup> ed. Bareilly: Sanskriti Samsthan; 1982.p.35.
6. Sharma OP. Geriatric care in India, Geriatric & Gerontology - A Text book. 1<sup>st</sup> ed. New Delhi: A 'N' B Publishers Pvt. Ltd.; 1976.p.86.
7. Chundawat NS, Sharma Kamlesh. Yogasanon ke Shastriya Sandarbha. 1<sup>st</sup> ed. Jaipur: National Institute of Ayurveda; 2003.p.3.
8. Rao MV. A Text book of Swasthavritta. 1<sup>st</sup> ed. Varanasi: Chaukhambha Orientalia; 2007.p. 415.
9. Chaudhary SK. Concise Medical Physiology. 3<sup>rd</sup> ed. Calcutta: New Central Book Agency (P) Ltd.; 1999.p.189.
10. Ranawat RS, Chundawat NS. A comparative study of bhastrika yogic kriya and jatamansi ghana vati in the management of insomnia. Journal of Ayurveda, 2011;5(4):51-56.
11. Retrieved from: <http://www.abc-of-yoga.com/pranayama/advanced/bhastrika.asp> [15/06/2014]
12. Oza D, Tanna I, Ravishankar B, Chandola HM. Evaluation of Bharangyadi Rasayana in Premature ageing. Ayu 2009; 30(2):109-120.
13. Yogi M. Maharishi Mahesh Yogi on the Bhagavad-gita: A new translation and commentary with Sanskrit text. 1<sup>st</sup> ed. Harmondsworth, London: Penguin; 1969. p.32.
14. Recordati G. A thermodynamic model of the sympathetic and parasympathetic nervous systems. Autonomic Neuroscience 2003; 103(1):1-12.
15. Chatterjee CC. Human Physiology. 7<sup>th</sup> ed. Calcutta: Medical Allied Agency; 1995.p.128.

Source of Support: Nil

Conflict of Interest: None Declared