

## **Systematic Yogic Practices Can Manage Occupational Health, Stress and Hypertension**

**Dr K Krishna Sharma\***

\*Chairman, Department of Human Consciousness and Yogic Sciences, Mangalore University, Mangalagangothri-574199, Karnataka, India.

### **Abstract:**

The present study aimed at finding the effect of yogic practice on occupational health mainly on stress and hypertension. The study was carried out on the employees of mangalore chemicals and fertilizers (M.C.F.), panambur. Practice time was one hour daily for a total period of one month. 15 subjects were taken for the study from the different stream of M.C.F. The result shows significance in both systolic and diastolic B.P, total cholesterol and L.D.L. where as there is no significance in the weight, triglyceride, H.D.L. and Tc/H.D.L ratio. Modern life style of speed and competition seems to be the underlying factor for developing stress. Stress which is response of the body to demanding situation is main factor for early aging changes, leading to hypertension. Reactions to stress are manifold. No one situation is stressful to all the people all the time. Some of the factors that can produce stress are children or lack of them, the boss or the subordinate, the traffic, the telephone or lack of it, over work or not enough to do, too much money or too little of it, making decisions, a dull routine job, lack of authority and apprehensions about the future.

**Key Words:** Stress, Occupational health, HDL, LDL

---

### **Introduction:**

Stress is uniquely different from what we normally think of disease. It has no biological structure such as a germ or virus. It is the result of how our mind and body function and interact. It is psychosomatic in the true sense of the word – psyche meaning “mind” and soma means “body”. It is the consequence of how we regulate or put it more appropriately, how we do not regulate, the mental and physical functioning of our being. In a few short words, stress is the result of the way we have consciously or unconsciously chosen to live. The reason

stress is harmful is because we are consciously creating it, and we become accustomed to sustain it. Consequently we come to accept stress as a “normal” part of everyday life. We do variety of things to cope with this problem, much of which however is only palliative. For instance, medical treatment is focused upon the symptoms but does little for the underlying condition or cause. The causes of stress may be summarized as follows,

- Sources at home
- Sources at work

- Sources from home – job interface

**Occupational stress (work related stress):**

Most adults spend more time at work than in any other single activity. It is not surprising, then, that jobs or careers are a central source of stress. These are obvious factor producing work related stress like – being asked to do much work in too short time. Interestingly, being asked to do too little can also cause stress. Such under load produces intense feelings of boredom, and these, in turn, can be very stressful.

The factors that have been found to contribute to stress at work are summarized as follows:

- Role ambiguity
- Lack of participation in decision making
- Conflict with other employee
- Lack of support from co-workers
- Responsibility for others.
- Difficult or unpleasant work environment.

**Stress and hypertension:**

The incidence of hypertension is increasing throughout the world and the reason behind it is stress. When the body is under stress it constantly awaits emergency state which makes the adrenaline is fore front this in turn raise the blood in the blood flow through the blood vessels. This constantly rises in pressure lead to hypertension. Hypertension is persistent increase in systemic arterial blood pressure. Clinically the term hypertension is used to describe blood pressure that is sustained at a higher level than the generally accepted normal maximum level for a particular age group.

Hypertension is a finding recorded by a sphygmomanometer. It has no characteristic symptom or manifestation of its own. Naturally one cannot find a word corresponding to hypertension in ancient Ayurvedic texts. However, all the manifestations of hypertension have been described in various chapters and their treatment outlined.

**Yogic treatment of stress and hypertension:**

Stress is the outcome of modern life style. Stress is produced out of dissatisfaction, frustration and dejection. When there is a negative interaction between the self projection and the adverse internal as well as external environmental conditions. At the present the human existence is challenged by the stress disorders or the psychosomatic diseases such as hypertension, hyperacidity, insomnia, heart diseases, diabetes, asthma etc. it has been observed through the applied research that the regular practice of yoga not only controls these diseases but also promotes and maintains the healthy condition of the body and mind and prevent the disease process. Yoga has a potential to tranquilize and balance the mind, which is the kee in the management of stress disorders.

**Panchakosha theory:**

A series of yogic practices were introduced to improve the mental receptivity and to maintain the tolerance. The sedentary habits like effect of back ache due to wrong posture of sitting are effectively replaced by the asanas practice bhastrika kriya was

especially implemented to revitalize the respiratory system. The basic set of asanas is done to rejuvenate the various organs and parts of the body with the additional intension to develop an inner awareness and steadiness of various yogic postures. This was followed by bodily relaxation techniques like yoganidra. The improper food habits causes increase of blood pressure. So annamayakosha is involved in the hyper tension. This can be corrected only by correcting the food habit. This is by reducing the amount of salt, chilly added to food items, always taking nutritious and balanced food of sathvika nature.

The imbalance in the prana probably carries the psychological stress and emotional upsurges resulting with partial breathing. Bhasthrika, anuloma-viloma and ujjayi Pranayama were used to rejuvenate at this level. Prana causes the circulation of blood in the body. So in the hypertension functioning of prana is improper. Pranayama kosha can be corrected by the practice of Pranayama. The Pranayama which are good to control the hypertension, are ujjayi, anuloma viloma, sitali and chandrabhedana Pranayama. Characterized by deep relaxation like yoga nidra with alertful rest, single thought and expensive feeling have proved a great boon and could become a fine tool in the management of both mental and physical stress. The hypertension is due to stress and strain then manomaya kosha is the cause of the disease. By proper attitude and regular meditation this can be corrected. Various corrections through counseling are brought about at this level. Various lectures to achieve the same are also extremely useful in

correcting ones attitude and behavior. Characterized by the state of bliss was achieved through interaction partially and the moment after yoga nidra had resulted better relaxation to feel the internal bliss of silence.

#### **Tridosha theory:**

According to tridosha theory hypertension is due to abnormalities of vata, pitta or kapha. The abnormal dosha is confirmed by knowing the causative factors of the hypertension. The vamanadhauti kriya, asana, sitali Pranayama are good to reduce the pitta. The ghee tender coconut, green gram are the foods which helps to reduce the aggravated pitta. The vata can be controlled by basthi kriya, some asanas and bhasthrika Pranayama. The jira, gingili, methi are advisable to control vata.

#### **Sadvimshathi thathva theory:**

According to this theory the gross body is made from panch mahabhuthas. They are pruthvi, AP, thejas, Akasha and vayu. In a healthy person all these are in equilibrium. Any imbalance in any one of these mahabhuthas leads to ill health. In the case of hypertension the Akasha is reduced, vayu is increased, teja, ap, pruthvi may or may not vary. This imbalance in the panchamahabhuthas is because of thamoguna in the body. This can be corrected by increase of sathva and rajo guna.

All the yogic techniques like Kriyas, asanas, Pranayamas and meditation should be taught partially and gradually, carefully by a yoga

instructor. By regularly, sincerely following all above techniques the hypertension becomes normal within two to three months.

### Materials and method:

Total number of subjects selected for the project was 15, out of them 13 is male and 2 are female subjects. They are from different streams of mangalore chemicals and fertilizers, panambur. They volunteered with their own interest. The subjects were of the age group 50 to 60. Except one subject all others had hypertension. Duration of the study was one month. Yoga therapy was given regularly for the period of one month in the evening from 5.15 to 6.15. The therapy was carried out in a well ventilated training hall of M.C.F, panambur.

### Parameters:

- B.P. reading
- Weight
- Lipid profile test

- Stress scale (questionnaire)

To see the general improvement or the total health through yoga therapy, before starting the practice the case history of the subjects was taken after the end of one month of yoga therapy the improvements were noted. After analyzing the case histories the following yoga practice were advised.

Swasthikasana, vajrasana, tadasana, tadasana1, trikonasana, parsvakonasana, purvottanasana, pavanamukthasana, bhujangasana, ujjayi Pranayama, anulomaviloma Pranayama, bhramari Pranayama, sitali Pranayama, yoga nidra.

### Results:

In general, after the practice, all the subjects felt good and got enhanced relaxation. Every day they were showing a higher interest in the practices.

### List of weight and BP of the subjects before and after the practice:

Sl no.1	Weight in kg		Systolic BP		Diastolic BP	
	Before yoga	After yoga	Before yoga	After yoga	Before yoga	After yoga
1	58	58	132	122	86	78
2	70	67	150	140	94	90
3	67.5	66.5	180	164	114	100
4	66	52	150	144	108	100
5	77	65	154	128	100	88
6	78	75	140	146	98	86
7	61	78	150	130	96	84
8	58	61	140	134	98	86
9	70	59	174	130	98	90
10	64	66	160	150	92	88

**Tabulation of lipid profile test before and after the yoga therapy:**

Sl no.	Total cholesterol (mg/dl)		Triglyceride (mg/dl)		HDL (mg/dl)		LDL (mg/dl)		TC/HDL	
	BY	AY	BY	AY	BY	AY	By	AY	BY	AY
1	219	178	79	116	52	32	151	121	4.2	5.6
2	246	209	178	194	50	50	166	128	4.9	4.2
3	171	161	62	56	46	40	113	107	3.7	4
4	241	225	145	119	51	50	164	150	4.7	4.5
5	232	170	215	201	32	41	161	99	7.3	4.1
6	225	179.5	220	168.9	44	40.3	149	105	5.1	4.4
7	218	170	61	80	36	53	169	101	6.1	3.2
8	177	168	172	121	43	43	106	101	4.1	3.9
9	229	194	231	189	38	38	157	125	6	5.1
10	202	2156	129	62	31.1	58	147	142	6.5	3.7

**Tabulation of marks obtained by the subjects before and after one month of yogic practice.**

Sl no.	Marks.	
	BY	AY
1	170	188
2	166	179
3	160	182
4	158	170
5	168	188
6	171	190
7	153	179
8	168	184
9	158	175
10	140	176

**Statistical analysis**

Tabulation of paired sample test (for means)

Number of subjects: 15

Significance level: 0.05

S.n.	parameters	Mean		S.D		p-value	t-stat
		BY	AY	BY	AY		
1	Weight in kg	64.4	63.73	7.9082	6.9304	0.1528	1.5118
2	Systolic BP in mmhg	155.33	140.53	15.3	11.5	0.000004196	6.815
3	Diastolic BP in mmhg	98.66	90	6.8724	6.1871	0.000001588	7.435

4	Total cholesterol in mg/dl	213.66	188.17	26.788	25.836	0.0001539	5.1266
5	Triglyceride in mg/dl	144.26	134.06	67.26	54.255	0.2633	1.1653
6	H.D.L. in mg/dl	43.67	43.88	8.572	7.7711	0.9403	-0.07618
7	L.D.L in mg/dl	146.13	119.13	23.05	20.993	0.000095007	5.3917
8	Tc/H.D.L. ratio	5.04	4.35	1.0766	0.6896	0.0608	2.0381

The mean of both systolic and diastolic B.P in 15 subjects has reduced after yoga therapy and p-value is less than 0.05, so the B.P has significantly reduced towards the normal range. Similarly the total cholesterol and L.D.L. in the blood also significantly reduced.

In case of parameter weight the mean of 15 subjects has reduced from 64.4kg to 63.73kg, but p value is greater than 0.05 hence which is statistically not significant. Similarly the triglycerides in blood, H.D.L. and Tc/H.D.L. ratio are also statistically not significant.

**Discussion:**

After one month of yoga therapy, a lot of improvements were observed. Almost all the subjects are mentally calm after the yoga therapy. Some of them changed their aggressive behavior. It has been found in the study that there is an improvement in the overall of the subjects. Yoga therapy helps to tone up the muscles, brings proper elasticity to the blood vessels and also tones the respiratory, nervous system. Hence it gives

**References:**

1. Bhattacharya L N and Ashwathanarayana ( editors): ashtanga Hrudaya. Angalore, publication cell, department of Indian system of medicine and homeopathy, Govt of Karnataka, second reprint 1980

physical and mental relaxation. So yoga therapy is very effective for stress and hypertension and to prevent its complications.

**Conclusion:**

In spite of great limitations of the present study, namely, lack of control on the food intake, lack of continuity of the treatment over longer periods, the results are encouraging. Based on the individual and statistical analysis of the individual we can come to the following conclusion;

1. The yogic practices which has mentioned above can be used efficiently to control stress and hypertension.
2. These yogic techniques can be used to normalize the total cholesterol and LDL effectively.
3. These practices will help for the betterment of the total health.
4. Longer practice of these yogic techniques will normalize the triglyceride and H.D.L. level in the body.

2. Kundalini yoga by swami shivananda: 2001: Phd-the devine life society. Shivananda nagar, Uttaranchal.
3. Digambarji swami and gharote M L(editors): gheranda samhitha. Lonavala, kaivalyadhamaSMYM samiti, 2<sup>nd</sup> edition.1997.
4. Digambarji swami: hatayoga pradipika of svathmarama. Pune, kaivalyadhama, shreeman madhava yoga mandir samithi, 1970.
5. Ramaswami HN; taittiriya Upanishads. Bharathiya vidyabhavan,1995
6. Shasthri pandith Mahadeva A (editor); the yoga Upanishads with commentary of sri Upanishads- Brahmayogin, madras, the Adyar library, and research center, 1968.
7. Satyananda saraswathi swami; A systematic source in the ancient tantric Techniques of Yoga and Kriya. Munger, Bihar school of Yoga.
8. Shasthri Kashinath; Caraka Samhitha of Agnivesha with Ayurveda Dipika commentary of chakrapanidutta, vol. 1, Varanasi, Chaukamba Sanskrit asthan, 5<sup>th</sup> edition.
9. Swami Vivekanda; karma yoga. Calcutta, Advaita Ashrama.
10. Swami Nikhilananda; Vedanthasara of Sadananda. Calcutta. Advaita Ashrama.
11. Swami Vivekananda; raja yoga. Calcutta. Advaita Ashrama.