IF A LITTLE RUNNING COULD SAVE LIVES, A LITTLE YOGA SHOULD TOO.

A recent study (1) followed more than 55,000 adults, divided into runners and non-runners, (mean age 44 years) for an average of 15 years. The study recorded a stunning 45% reduction in risk of death due to cardiovascular disease (CVD) in people who ran as little as 5-10 minutes a day and as slow as <6 miles/hour, as compared to the non-runners. This is remarkable data to have when confronted with CVD deaths that exceed 17 million (170 lakhs) a year; of which coronary heart disease (heart attacks) account for more than 7 million (seventy lakhs) (2-4). Several randomized studies have concluded that aerobic activities improve blood pressure, insulin sensitivity and blood cholesterol levels. There are observational evidence that running prevents stroke, hypertension, heart disease, diabetes and raised cholesterol.

One would intuitively presume that yoga discovered right here in India would be as effective as running in the prevention of hypertension and heart disease. India actually has millions suffering from cardiovascular disease with considerable morbidity and mortality, but most Indians are ignorant of basic life style modification measures to thwart this looming heart disease epidemic. One rarely sees anyone jogging or running in Indian cities; similarly there is little or no buzz at all on the preventive and therapeutic advantages of a few minutes of yoga exercises. There are numerous anecdotal data and small observational studies documenting significant clinical improvements in a variety of diseases. There is, however, little evidence based upon large long-term randomized trials on the benefits of yoga in the prevention and treatment of

hypertension and heart disease despite yoga being around for more than 4,000 years in India (5-7). Astonishingly, more than 30% of urban adult Indian population suffers from hypertension. Heart attacks are regularly seen in people as young as 25-30 years in big cities of India, largely due to ignorance and faulty life styles. The majority of people dying from heart attacks belong to low and middle -income nations. It is therefore of vital importance that we examine evidence on the efficacy of yoga to combat raised blood pressure and heart disease.

A Cochrane review (considered the gold standard of medical research) demonstrated, based upon 11 randomized studies , that yoga improved blood pressure, high-density lipoprotein (HDL) levels (the good cholesterol) and triglycerides. Small observational short-term studies with considerable heterogeneity in their design have documented improvement in risk factors leading to CVS disease and mortality (8-11).

A meta-analysis and review published in the American Journal of Hypertension in May 2014 concluded that yoga is a useful adjunct to medical therapy in the treatment of hypertensive patients. This met-analysis included seven randomized trials with a total of 452 patients (12). A randomized study of yoga on mild hypertension presented at the American Society of Hypertension (ASH) 2013, demonstrated modest albeit significant reduction of 4-5 mm Hg blood pressure as compared to the control group who were on diet/weight reduction program (13).

A German study (14) involving more than 300 known cardiac patients who had suffered a heart attack or had underwent coronary angioplasty/stenting reported significant lowering of blood pressure to the magnitude of 20 mm Hg (systolic), as opposed to the group practicing relaxation techniques. This improvement in blood pressure was over and above standard blood pressure. This data was presented in the euro PREVENT 2010 meeting.

Yoga practiced for an hour bi-weekly for as little as 5-6 months has been found in another randomized study to significantly reduce episodes of symptomatic and asymptomatic paroxysmal atrial fibrillation (15), heart rate, blood pressure, anxiety and depression. It is hypothesized that yoga improves heart rate variability, baro-receptor reflex, and the autonomic nervous system (reducing sympathetic discharge and enhancing parasympathetic activity). There is data that yoga rectifies the inflammatory state in the body and also probably reduces oxidative stress. There is a growing body of evidence that yoga is useful in the management of lower back ache, multiple sclerosis, stress and depression, asthma, chronic obstructive pulmonary disease, pulmonary tuberculosis, schizophrenia, rheumatoid arthritis, osteoarthritis.

Yoga would prove to be exquisitely effective in the management of hypertension keeping in mind that there are more than a billion people suffering from hypertension in the world, leading to more than 1.7 million (17 lakhs deaths) in a year. There are in the USA alone about 22 million patients with mild hypertension who consume approximately 32 billion $ worth of drugs annually (equal to the Indian defense budget). There could be 5-10 times that number of mild hypertensive patients in India. A couple of years back a Cochrane review on 4 randomized trials including more than 9000 patients with mild

hypertension (follow up of 4-5 years) found no difference in mortality, strokes or heart attacks in the treated group with drugs as opposed to participants on no treatment. Moreover 9% patients on anti- hypertensive medication actually withdrew from these trials because of adverse side effects of treatment drugs (16-18).

Yoga (19) attempts to integrate and balance the human body, mind and spirit by execution of 'Asanas' (position), 'Pranayama' (breathing) and 'Dhyan' (meditation). An individual practicing a particular posture will improve muscular strength and flexibility. Improved cardio-respiratory fitness can also be achieved by continuous posture and breathing exercises. The metabolic costs of Hath yoga represent low level of physical activity (walking on a treadmill at 3.2 km/h), but incorporating sun salutation and practicing yoga exercises for more than half hour a day should contribute to an adequately intense physical activity that should be as effective if not much more than 5-10 minutes of jogging a day. There is an urgent need for large adequately powered long -term follow- up randomized trials that confirm the many pleiotropic salutatory effects of yoga in the management of hypertension and heart disease.

Let me assure the readers that being an interventional cardiologist the author sees the patient at the other end of the spectrum and the sight is not for the faint hearted. There are too many patients rushing into emergency rooms of hospitals with heart attacks, chest pain (unstable angina), heart failure, severe hypertension and strokes leading to permanent paralysis. A substantial number of these patients either die or become disabled for life; most of this mortality/ morbidity could have been prevented by a simple life style modification technique that has been with us for thousands of years.

It is imperative that a national policy on yoga is adopted, which ensures that yoga is taught in schools, colleges, and offices and in fact wherever possible by certified yoga therapists. The general public must be informed of the huge burden of heart disease in this country and the role of yoga in its prevention. There are numerous websites for both initiation and information on the subject (20). The great yoga guru Mr. BKS Iyengar who passed away a few days ago at the ripe old age of 95 had appropriately said in an interview that " Yoga saved my life". Mr. Iyengar had discovered the powers of yoga as a teenager, subsequent to being ravaged by tuberculosis, typhoid and malaria while still not 16 years old. If a little jogging can save thousands of lives, yoga should jolly well too.

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