The Thread of Life

In a recent book called the *South Asian Health Solution* there is a chapter on getting Indians to exercise. The author is a well-known Silicon Valley medical doctor who is rightly concerned with the growing epidemic of heart disease among the peoples of the Indian subcontinent. The book contains many good points, but, unfortunately, the author has bought into an insidious, pervasive myth that South Asians do not like moving, let alone exercising.

The author is in good company. Many Indians and Pakistanis have also bought into the same myth that somehow they are not designed or inclined to exercise. Yet this myth is false and like many things in modern-day India its roots can be traced to British colonial administrators.

British colonial educators and the popular press of that time presented Indians as a weakling race inclined to laziness and lacking in athletic prowess. This supposed feeble race deserved to be colonized, then dominated, then ruled. During British rule education divorced from any physical activity was stressed resulting in the decline of Indian physical culture. As the Indian middle classes aspired and flocked to the newly installed Anglicised education system they internalized the belief the physical culture was not a necessary part of schooling or life, and, as physical training was neglected the myth that Indians are somehow naturally not inclined to exercise was perpetrated. This myth needs to be demolished.

Indian physical culture can be traced back four thousand years. In the Vedic Age people knew the value of training their body, then strengthening it further with dairy products. At that time it was believed that the upper limit of healthy human life was between 108–120 year’s old—a figure that is identical to that proposed by modern scientists. By the Age of Ramayan, we find stone lifting, jumping, and pull-ups being performed, as well as deep belly breathing exercises. But it was in the Islamic period, from the time of Babur onwards, that strenuous exercise took off. The leisure hours of the early Mughals were devoted to strength and stamina, and they were soon stronger, fitter, and healthier than local Hindus, Buddhists, and even Rajputs, who were, at that time, famed for their strength. Babur personally exemplified this trend by swimming, strength training, and often did an early example of the farmer’s carry by holding a man under each arm, then walking with him as far as he could. That’s roughly the equivalent of holding a 70kg barbell in each hand then then going for a walk. Babur believed that if a
person could develop a strong, powerful body then he could face any danger and any amount of hardship. At this time we find mention of exercises such as squatting with heavy weights, lifting the stone, competitive heavy stone ball lifting, club swinging, Hindi push-ups, Hindi squats, ascending and descending small hills or steps at speed, and wrestling. On top of this physical activities such as horse-riding, swimming, and archery were widely practiced, and people walked almost everywhere.

During this early Islamic period of India’s history the Muslims were known for being strong, long-lived, and free from disease. With the decline of the Mughal empire and the subsequent rise of British colonialism Muslims in Indian slowly moved away from their physical culture of strength and stamina training to the detriment of their health. It is hoped that this indigenous Indian physical culture might be recovered.

This type of Mughal strength training brings a range of unique benefits, but to understand these benefits we need to temporarily relocate from Mughal India to Ancient Greece. In Greek mythology Zeus had a daughter called Klotho. The myth relates how Klotho owned a spinning wheel from which she spun out the thread of life. Each human was assigned a portion of thread by Klotho and that was their allotted lifespan. The myth is obviously just a story, but the story took a new turn in 1997 when a new gene was discovered. This particular gene produces a protein and scientists soon named both the gene and protein Klotho after Zeus’s daughter. This was because the protein Klotho has a major effect upon longevity. The more Klotho a person produces the longer they live and the more likely they are to age free of degenerative disease. Yet Klotho does much more than help a person to live longer. From her laboratory at the University of California in San Francisco, Professor Dena Dubal works as an endowed Professor of Aging and Neurodegenerative Diseases. She is a prominent researcher in genetics and Klotho and her team has comprehensively shown how an increase in Klotho leads to better brain function. There are now hundreds of studies on Klotho.

In these studies it was found that Klotho is primarily produced in the brain, the kidneys, and the spine. Once Klotho is expressed in the kidneys it regulates calcium and phosphorus levels, reduces oxidative stress, improves vascular endothelial cells, meaning your arteries remain smooth and unblocked. It gives you a surge of nitrous oxide, which also improves your arteries, and prevents heart disease. It helps with glucose metabolism, which reduces the risk of diabetes. It
dramatically improves kidney health. These effects of Klotho are of the utmost importance for people of South Asian descent, who have a higher risk for heart disease, diabetes, and chronic kidney disease.

However, it is in brain health that Klotho shines. It delays dementia and significantly helps cognitive health. Its effects on the brain are strong enough to counter the APOE4 gene that is one of the strongest genetic influences upon Alzheimer’s disease. Perhaps many of us aren’t too concerned with dementia, Alzheimer’s disease, or age-related cognitive decline. After all, these are diseases that are far into the future. The problem with this way of thinking is that the foundations for these diseases are often laid down in person’s thirties, forties, fifties. Klotho also helps you in the here and now. It leads to better executive function in the brain, which means better organization, better planning, and a greater propensity to complete tasks and projects. If Klotho were a medicine it would attract headlines as the next miraculous drug to cure all ills. But Klotho isn’t a drug, it’s a protein our body can make, which means we can all do things to increase it to improve our health and reduce disease.

There are several things that suppress Klotho. Depression and stress both reduce it. Our old foe phosphates and phosphoric acid in soda and fizzy drinks, which we talked about at the British Suhba, decreases Klotho, as does a long-term low carbohydrate diet. In contrast, vitamin D, although only from the sun, increases Klotho, as do probiotics found in dairy products. In fact, Indian buffalo milk yoghurt, rich in bacteria, has been found to raise Klotho levels, with the bacteria found in strains of milk curd and yoghurt found at local Indian shops. This bacteria is better than the bacteria found in commercial western strains, and is one of the reasons why mood and thought are elevated after eating local Hyderabadi buffalo milk yoghurt.

However, the main way to increase Klotho is through exercise, specifically by strength training.

The health marker that correlates most strongly with Klotho concentrations in the body is total body muscle strength. Exercise increases Klotho, but not just any exercise. Cardio training, such as cycling and running, only increases Klotho in young people, but not older people, who do excessive cardio exercise, have a blunted response and do not produce as much. In contrast, when people strength train, and build muscular strength, regardless of age, they produce Klotho and gain myriad health benefits. The very best way to increase Klotho is to strength
train in a way that gives functional muscle strength, to get some sun, and to eat probiotic rich dairy products—exactly the very things that previous generations of Indians practiced.

Beyond Klotho, strength training brings a number of other important benefits. It makes you much less likely to end up in a wheelchair, and a glance around Hyderabad Airport reveals a good number of people, who aren’t that old, in wheelchairs due to ill health in old age, rather than because they are physically disabled. Strong legs with good functional mobility means prayers are easier to perform, as is walking to the mosque, and going up and down stairs. The effects on the body go beyond mobility and strength. They go beyond fixing up common diseases such as heart disease and diabetes. The effects of strength training also help a range of autoimmune diseases.

Autoimmune diseases are a scourge of our time. Not so long ago there were only a few known autoimmune diseases. Now, there are at least eighty. They range from multiple sclerosis to asthma, and include well-known diseases such as thyroid disorders, arthritis, lupus, and celiac disease. It is estimated seven hundred million worldwide now have some form of autoimmune disease. Previously, autoimmune diseases were not thought to be a problem in India, but now these complex diseases are on the upswing in the Sub-continent. Most, if not all autoimmune diseases have an inflammatory component. When people who have an autoimmune disease strength train there is a huge effect on their pro-inflammatory cytokine levels. Their inflammation reduces. Moreover, measures of fatigue and health-related quality of life measurements all drastically improve. It has been suggested that strength training has a direct effect upon autoimmune disease by modulating blood cytokine levels. This is in line with recent research that has showed that skeletal muscles are in fact a secretary organ that can release anti-inflammatory cytokines. This led to one research team stating, ‘It may be speculated that strength training will have a profound effect on the inflammatory processes of autoimmune disease.’ We might also speculate that the release of anti-inflammatory cytokines from skeletal muscles will prevent cancer, Alzheimer’s disease, and heart disease, as all have a strong inflammatory component.

While the body benefits from strength training so does the brain. Aside from the upsurge in Klotho, strength training helps the brain in several important ways. It improves a person’s working memory and helps them to organize tasks. It gives
better inhibitory memory, which leads to better self-control and the avoidance of addictive behaviour. Anyone with addictions should take up strength training. Once strength training has been performed regularly for over one year it starts to improve long-term memory as well as short-term memory, and brain plasticity improves. As brain plasticity improves there is a reduced risk of dementia and Alzheimer’s disease. Here then is an activity that improves body and mind, helps prevent a wide range of common diseases, helps heal chronic disease, facilitates a healthy, active old age and gives profound sense of well-being. But there is yet more.

At last year’s Hyderabadi Suhba we mentioned that India was rapidly becoming the world’s capital for type 2 diabetes, with middle class Hyderabadies particularly at risk. There have been recent studies on the effects of strength training on people of Indian heritage. These studies found that strength training significantly improved type 2 diabetes in Indians. It significantly improved cholesterol, with people who strength trained have double the improvement in their cholesterol profile over those who did aerobic exercise. Blood pressure also declined. There was one other unexpected outcome from these studies: Indians who did strength training over aerobic exercise rated their mood and sense of well-being as being three times higher than those who did aerobic exercise. This is not surprising given the worn out, washed out, sometimes aged look endurance athletes have.

There’s a pretty convincing case for people to strength train, and by people we mean both men and women. So long as you do not over train you will experience a profound sense of vitality and improved cognitive function. You will become inwardly and outwardly strong, while handling the physical and mental stresses of life. Day-to-day you will have a spring in your step, find ease when walking upstairs, and comfort in your obligatory prayers. The question is what form of strength training should a person do. For people short of time, space, or money they should learn the Hindi Squat and Hindi push-up. This can optionally be supplemented with other bodyweight exercises such as the pull-up. If you just did these three exercises on regular basis it would be enough to build the functional muscular strength that you need as you age. People with access to kettlebells should take up kettlebell training. However, one of the very best exercises is the barbell deadlift. This strength exercise is akin to the heavy stone lifting that many ancient cultures, including Indian culture, practiced. It works virtually every
muscle in the body, and is used by professional athlete trainers as the primary marker for strength and explosive speed. Learn the exercise properly to avoid injury and follow a plan such as Pavel Tsatsouline’s *Power to the People*. This plan takes but fifteen minutes a day five days a week. However, these plans and exercises are suggestions, they are not a *fard* or a *sunnah*. They are a *nasihah* because I have personally found benefit in them. Otherwise, people should do whatever form of strength training they find benefits them the most and fits with their body type and schedule. But strength train you must if you want an excellent body and brain as you age, and if you want to extend the thread of your own life living well into old age.

**Postscript on observations in Hyderabad**

We’d like to add a small postscript to this epitome based on some observations we have made during our time in Hyderabad. Anyone taking a road trip to a maqam outside the city and who pays even a cursory glance to the poorer inhabitants of the region will notice how healthy many of them look. Their features are defined, their skin smooth, their limbs supple and often strong from carrying objects needed for their day-to-day activities. None are overweight. None have a belly. They don’t have black bags under their eyes and their eyes are clear. Many have a smile on their face. Most look much healthier than their wealthier, overweight Hyderabadi compatriots. There are two reasons for this. Firstly, they are active all day, effectively performing very low-level aerobic exercise. This does not harm the body like endurance exercise, and it brings a host of health benefits, including some of those we have mentioned today. In addition, they are often carrying an object that is working their functional muscle strength. They don’t need to strength train. However, perhaps the main reason they look healthy is that they are not eating much food. In most traditional cultures the poorer members of society went through a period of involuntary starvation every day. People with ready access to food would either fast or only eat two meals a day. This extended period of time without food every day is crucial for optimal health. Even if you find it hard to change your diet, even if you just can’t conquer that urge for delicious Hyderabadi food, you can at least miss a meal most days of the week by going without breakfast. This extended overnight fast brings many, many health benefits, especially for the brain. It helps protect from some of the diseases of aging, and it may well help people to lose weight. Going without food for between
twelve and sixteen hours in every twenty-four hour cycle is something we strongly encourage you all to do, even if you just can’t give up the biriyani.