

## HEALTH & DISEASE MANAGEMENT

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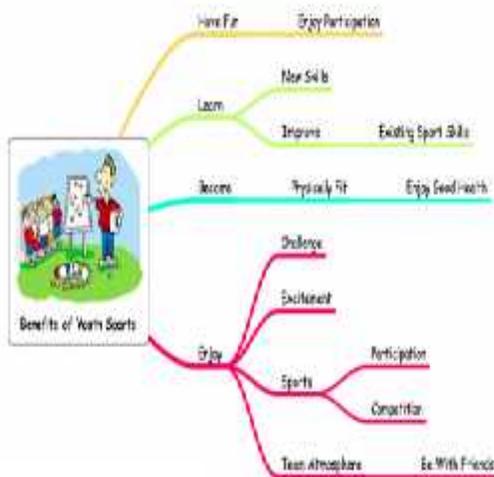
### Abstract

The way forward for Healthcare from time immemorial, man has been interested in trying to control disease. In ancient times, health and illness were interpreted in a cosmological and anthropological perspective. In the course of evolution, which proceeded by stages, with advances and halts, healthcare has truly undergone a momentous metamorphosis. From the initial disease control phase to the present “Health for all” phase, the journey has been truly remarkable. Health is not just absence of disease, it is about ‘Fitness’ and the ability to realize one’s potential to the fullest possible extent. WHO estimates that almost 66% of all deaths in 2020 would be from chronic diseases . Clinical, epidemiological and basic research evidence clearly supports the inclusion of regular physical activity as a tool for the prevention of chronic disease and the enhancement of overall health. In children, activities of a moderate intensity may enhance overall health, and assist in preventing chronic disease in at-risk youth. The numerous health benefits of regular exercise are dependent on the type, intensity and volume of activity pursued by the individual. These benefits include reduction of low density lipoproteins while increasing high density lipoprotein; improvement of glucose metabolism in patients with type II diabetes; improved strength, self esteem and body image; and reduction in the occurrence of back injuries. In addition, a progressive, moderate-intensity exercise program will not adversely affect the immune system and may have a beneficial effect on the interleukin-2/natural killer cell system. Furthermore, by decreasing sedentary behaviors and, thus, increasing daily physical activity, individuals may experience many stress-reducing benefits, which may enhance the immune system. Hope for the better management of diseases.

**Key words: Exercise, Physical activity, Healthcare & Disease Management.**

### INTRODUCTION

Health and healthcare though used interchangeably, need to be distinguished from each other; for no better reason than that the former is often incorrectly seen as a direct function of the later. Health is not just absence of disease, it is about ‘Fitness’ and the ability to realise one’s potential to the fullest possible extent. *A call to Action – Best route to Healthcare* , *The DM* way from time immemorial, man has been interested in trying to control disease. In ancient times, health and illness were interpreted in a cosmological and anthropological perspective. In the course of evolution, which proceeded by stages , with advances and halts, healthcare has truly undergone a momentous metamorphosis. From the initial disease control phase to the present “Health for all” phase, the journey has been truly remarkable. The origin of Indian healthcare system can be traced to the colonial medical services that emphasized costly high technology , urban based , curative care catering exclusively to the imperial men. When we became independent in 1947, we inherited healthcare systems modelled after the systems in industrialised nations . This lead to a mismatch between service and demand as the existing problems of the time varied significantly from the available solutions.The U.S. National Center for health statistics defines chronic diseases as one that persists for a long time i.e. for 3 months or more, e.g. cardio vascular diseases , cancer, diabetes & obesity etc.



### The benefits of exercise, activity and sport on mental health

- Reduced anxiety and depression
- Stress reliever
- Promotes positive mood
- Increase of Self Esteem
- Better sleep pattern
- Increased social confidence
- Distraction



### **The Health Benefits of Sport and Physical Activity**

Although research interest on physical activity and health dates back to the 1950s, the breakthrough in the scientific evidence on health benefits of physical activity largely took place during the 1980s and 1990s. There is an overwhelming amount of scientific evidence on the positive effects of sport and physical activity as part of a healthy lifestyle. The positive, direct effects of engaging in regular physical activity are particularly apparent in the prevention of several chronic diseases, including: cardiovascular disease, diabetes, cancer, hypertension, obesity, depression and osteoporosis.

### **Physical activity and psychosocial health**

The WHO has estimated that “one in four patients visiting a health service has at least one mental, neurological or behavioural disorder, but most of these disorders are neither diagnosed nor treated”. A number of studies have shown that exercise may play a therapeutic role in addressing a number of psychological disorders. Studies also show that exercise has a positive influence on depression. Physical self-worth and physical self-perception, including body image, has been linked to improved self-esteem. The evidence relating to health benefits of physical activity predominantly focuses on intra-personal factors such as physiological, cognitive and affective benefits, however, that does not exclude the social and inter-personal benefits of sport and physical activity which can also produce positive health effects in individuals and communities.

### **Sport and Physical Activity as part of a Healthy Lifestyle**

A number of factors influence the way in which sport and physical activity impacts on health in different populations. Sport and physical activity in itself may not directly lead to benefits but, in combination with other factors, can promote healthy lifestyles. There is evidence to suggest that changes in the environment can have a significant impact on opportunities for participation and in addition, the conditions under which the activity is taking place can heavily impact on health outcomes. Elements that may be determinants on health include nutrition, intensity and type of physical activity, appropriate footwear and clothing, climate, injury, stress levels and sleep patterns. Sport and physical activity can make a substantial contribution to the well-being of people in developing countries. Exercise, physical activity and sport have long been used in the treatment and rehabilitation of communicable and non-communicable diseases. Physical activity for individuals is a strong means for the prevention of diseases and for nations is a cost-effective method to improve public health across populations.

### **STATISTICS**

WHO estimates that 388 million people will die worldwide from chronic diseases in the next 10 years. WHO estimates that 36 million of these deaths could be averted. Four out of five chronic disease related deaths happen in the low and middle income countries. Almost 66% of all deaths in 2020 would be from chronic diseases. India being the largest democracy in the world, has 2.4 % of the land area , but it supports 16 % of the world population. 72 % of the population lives in rural India. More than 30 % of the population is illiterate. Density per 1000 population – Doctors -0.60, Nurses – 0.80, Dentist – 0.06, Pharmacist 0.56 – 2003 data, Hospital beds -0.70 . Two persons die of TB every minute. 75.3 % of children below 3 years in age in rural areas and 70.8 % in urban areas are anaemic. Chronic kidney disease affects about 175 to 200 million in India – Study by Indian society of nephrology and University of Harvard. National Kidney Foundation in 1994 had found that every fifth person ( age 25-45 Years) had hypertension and every seventh person had diabetes. At present, three million new people are diagnosed to be suffering from cancer every year. Fifty-three percent of all deaths in India are due to non-communicable diseases, and the estimated loss to India’s economy – just due to heart disease – was over US\$ 9 billion. The number of deaths due to Cancer -826000 , CVD-2980000 , Diabetes – 175000, Respiratory diseases – 674000.

Per capita expenses (\$) on health in India is 23 USD. Private health insurance coverage as a percentage of population < 2 % . In India , medical cost of diabetes care from private healthcare providers could be as high as 15-25 % of the household income. Even Rural Bharat has not been spared- the prevalence of diabetes has gone up from 2.4 per cent of the population to 6.4 per cent. Chronic kidney diseases have a prevalence rate of 24.3 % in urban areas and 9.2 % in rural areas. Clearly, centuries of medical science has not been successful in addressing sickness and disease, which cause social and economic upheaval for millions around the world. The time has come for a comprehensive paradigm change in basic healthcare delivery.

It is a fact that India would need more than 1.2 million doctors by 2020, and at present has about 600000 doctors. Suddenly, we cannot produce so many doctors . But what we can essentially do, is to create a system that can prevent people from reaching a stage where they need a doctor intervention. Infections in sports can be serious medical problems. They can affect individual athletes, resulting in morbidity and decreased performance . They can also be spread to other athletes, putting them at risk for similar disease and complications. The sports medicine physician may face challenging issues regarding infectious diseases when dealing with teams or highly competitive athletes who have difficulties taking time off to recover.



### **Public health, infectious diseases, and sports**

Public health plays an insidious role in our everyday lives to keep individuals safe from communicable diseases, accidents, environmental concerns, and countless other dangers. Programs are most successful when a disease no longer becomes a worry for the population through active prevention strategies. Much of our understanding comes from history and from recognizing the imminent dangers so we can prevent diseases from occurring the next time. Medical reports from major athletic events provide examples of issues that can be encountered by the sports medicine physician. Mass-gathering events, such as the Olympics, highlight some of the concerns that can occur with sports and infectious diseases. International athletes compete together from countries with different endemic microorganisms and variable health care practices. For example, an outbreak of measles occurred in a Special Olympics event in St. Paul, Minnesota. The point of infection was suspected to be a track and field athlete from Argentina, resulting in measles infections in 16 individuals from 7 different states. An outbreak of influenza that occurred during the 1988 Calgary Olympics was believed to have possibly affected the performances of some athletes. The pneumococcal vaccine was recommended to athletes before competing in the 1992 Barcelona Olympics because of resistant *Streptococcus pneumoniae* strains endemic in Spain. Medical reporting and surveillance of infections are extremely important to attempt to contain spread of disease. At the 1996 Atlanta Olympics, a priority of surveillance was to identify unusual presentations and infectious disease outbreaks to actively implement same-day medical and public health interventions. It is an important responsibility of physicians to report specific infectious diseases, especially if an outbreak is suspected. Health professionals should contact their local public health officer to determine whether other cases are occurring and what precautions need to be taken in the event of a serious outbreak. In the past few years, infections such as severe acute respiratory syndrome have required the need of quarantine to help control the spread of these dangerous diseases. Health care professionals should report all clinically significant adverse events following immunization to the Vaccine.

### **Exercise, Health And Disease Management**

Exercise is a profoundly powerful tool for enhancing human health, preventing disease, and even for treating or managing some diseases. People with injuries and illnesses often have the most to gain from the beneficial effects of exercise. Exercise physiologists and exercise scientists are educated to use exercise as a clinical intervention for disease management. Exercise scientists use exercise for health promotion, disease prevention and fitness. Accreditation for exercise physiologist and exercise scientists is provided by Exercise and Sports Science Australia (ESSA). Undertaken research is focused across a broad range of health issues including ageing, cardiovascular disease, cancer, musculoskeletal disorders and cognitive impairment. Some of our current project areas include:

- Exercise, cardiovascular function and health in ageing and disease.
- Cardiovascular responses to posture changes and “weightlessness”: implications for health and spaceflight!
- Effect of cold water immersion on cardiovascular dynamics and performance recovery in elite athletes
- Train and sustain: A model for quality supervision in work integrated learning.
- Exploring health literacy in tertiary students: An international study.

### **Disease Management**

Sports fields do not usually get many different diseases. For extra insurance when overseeding, be sure to use recommended varieties that have been proven to have disease resistance to lessen the chances of disease occurrence

***Disease management is the way to healthcare*** : A coordinated system of preventive, diagnostic, and therapeutic measures intended to provide cost-effective, quality healthcare. DM consists of preventive, early identification and management processes providing a cost effective, quality care for individuals who have or are at risk for certain chronic illnesses. A philosophy towards the treatment of the patient with an illness (usually chronic in nature) that seeks to prevent recurrence of symptoms, maintain high quality of life, and prevent future need for medical resources by using a comprehensive approach to health care. Disease management (DM) is the concept of reducing healthcare costs and/or improving quality of life for individuals with chronic disease conditions by preventing or minimizing the effects of a disease through integrative care. DM has been proven to lead to better retention of patients & better compliance to therapy, thereby leading to better outcomes from the treatment. India needs a different kind of Healthcare system. A system that focuses more on prevention. Disease never differentiates between urban and rural or literate or illiterate. The way forward for healthcare in India can be developed keeping in view the following:

- 92 % of the healthcare spend comes from individual pocket.
- Best of healthcare facilities are concentrated in the urban areas.
- Healthcare at the later stages of chronic diseases is expensive and the diseases progress rapidly if unchecked. The process of progression is irreversible.

- 44.2 % of the population in India lives below USD 1 per day.
- Per capita expenses (\$) on health in India is 23USD
- Awareness about symptoms and diseases is totally missing . Government is only talking of HIV / familyplanning
- 1.5 lakh new patients get end- stage renal failure every year. Of these , only 3500 undergo kidney transplants. About 6000 get dialysis while the rest perish. In India as per MOHFW Annual report GOI , 2006-7 . The number of projected deaths due to Cancer were-826000 , CVD-2980000 , Diabetes – 175000, Respiratory diseases – 674000.

**So going forward we need to do the following.**

1. Focus more on prevention than cure.
2. Government must give major thrust to self care.
3. Make basic health check ups like BMI, BP & Sugar mandatory. We could just start with BMI and those having BMI higher than 25 must be asked to do a further investigation. BMI could be checked by an individual as it does not require any diagnostic kits . Just needs a weighing machine and a height scale. No consumables are required , so it can be checked for free. This could be the starting point .
4. Set up instant testing centers across India , mobile vans to reach to the 72 % of the population- rural India.
5. Get the best technology for remote monitoring and treatment and make it affordable.
6. Government must promote healthy lifestyle and launch a massive drive against chronic diseases . (point to note -In 2005 , the U.S. introduced new dietary guidelines and set up a website in which individuals can track their food intake and exercise . In the first 72 hours of the website's existence , it logged 160 million hits , with 20 % of them originating from outside the U.S.-The Washington post, April-26,2005.).
7. NHRM should essentially focus on prevention & early detection of chronic diseases.
8. All hospitals should involve care givers for disease management post discharge of the patient who have undergone procedures for chronic ailments.
9. Government must initiate disease management in all its facilities.
10. All chronic patients should be encouraged to voluntarily take disease management programs.
11. Government must recruit counsellors to reach out to the population and encourage them to practice healthy lifestyle.
12. Fitness should be the aim of the healthcare efforts of the government of India.
13. Private players must play a proactive role.

In India , where the government spending is not only deficient but the facilities are also inefficient. We need to make a paradigm shift from the 'System driven Care to a Care driven System'. It was predicted that if India does not introduce disease management or wellness programs, it stands to lose approx USD 200 billion in national income due to deaths from heart disease, stroke and diabetes from 2005-2015. (Source : An estimation of impact of chronic non communicable diseases in selected countries, WHO 2005).



**9 HEALTH BENEFITS OF PLAYING SPORTS**

**#1 LOWER BODY FAT 90%**  
One great thing about sports is that they blast through body fat at an impressive rate. Most sports burn over 500 calories per hour and some sports burn as many as 900 calories per hour.  
In addition to this, playing sports naturally increases the amount of calories you burn while resting by up to 15% in the 48 hours after you play.  
Finally, the more high intensity burns, the more you burn when you play. Sports allow you to burn far more calories in a shorter time.

**#2 IMPROVED CARDIOVASCULAR FITNESS**  
Another great thing about playing sports is that they boost your cardiovascular fitness.  
The more you play, the more efficient your heart, lungs and vascular system become at circulating oxygen to your muscles and the more efficient your muscles become at utilizing the oxygen.  
This results in your being able to go longer in the same amount of time and use less energy to overcome fatigue and longer.

**#3 FEWER HEALTH PROBLEMS**  
Research has shown that playing sports can help prevent a number of health disorders including asthma, diabetes, and high blood pressure.  
So if you want to keep your body in the best possible condition, playing sports regularly is an excellent strategy.

**#4 GREATER MENTAL FITNESS**  
Sports don't just benefit your body - they also benefit your mind.  
Research has shown that people who play sports regularly have better memory, more focus, and better concentration.  
In addition, sports help to directly boost your focus and keep it healthy by increasing the flow of blood to and from the vital organs.

**#5 BETTER QUALITY SLEEP**  
If you struggle to sleep or don't feel fully rested when you wake up, taking up sports can help. Research has shown that people who participate in regular, high intensity exercise consistently find it much easier to sleep and experience higher quality sleep.

**#6 IMPROVED TEAMWORK SKILLS**  
One big advantage that sports have over other forms of exercise is that they help you learn to work as part of a team.  
In with as sports often play them in the form of group activities, you must be able to communicate and work with others, coordinate as a group and come together in a common goal.  
These are all valuable skills which you can use outside of sports when working with other people.

**#7 STRONGER IMMUNE SYSTEM**  
A major benefit of playing sports regularly is that it strengthens your immune system.  
It does this in two ways. First, it increases the production of disease fighting cells within your immune system. Second, it stimulates the flow of these immune system cells through your body and allows them to be available where they're needed.

**#8 INCREASED FLEXIBILITY**  
Sports are a highly functional form of exercise and it's directly related to your flexibility as you play.  
This increased flexibility has numerous benefits and can protect against injury by brightening your muscles, increasing the range of motion in your joints and more.

**#9 STRONGER BODY**  
One final point of playing sports regularly is that it strengthens both your bones and your muscles.  
This extra bone and muscle strength benefits your side of health, fractures, joint and sprains. It also has the potential to help you live a longer life by reducing the risk of osteoporosis and preventing osteoporosis from developing.  
It's a win-win situation for your bones and your muscles.

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"The benefits of daily practice of aerobic exercise, including the football or soccer are typical examples are evident in both healthy subjects and in those with elevated triglycerides, low HDL cholesterol (the cap), arterial hypertension, obesity, metabolic syndrome and diabetes, "says Robert Fox prevention and Protection Service of the CNR."There are many studies that show that, compared to sedentary people who engage in regular physical activity, with workouts 2-3 times a week and then play at the weekend, have an increase in HDL cholesterol and a reduction in triglycerides, the blood pressure, body weight, waist circumference, blood glucose and, consequently, cardiovascular risk. Also - continues the expert - the practice of football stimulates bone mineralization, helping to prevent osteoporosis, improves lung function, helps fight anxiety and release tension, and it is perhaps for this reason that people physically active smoke less. "

### **CONCLUSION**

The Disease Management Association of India (DMAI) has urged the Public Accounts Committee (PAC), set up for the auditing of government expenditures to various sectors, to seriously consider auditing of unspent funds to the healthcare sector. In a representation made to chairman of PAC, the association stressed it is essential to bring in accountability and transparency on why the funds that have been allocated for the use in various sectors go unused in spite of the requirement. Lot of international players are coming to India and make money from disease management . It is the right time for the Indian healthcare companies to act and occupy a dominant position in this arena. Disease management is a proven system which can reduce the healthcare cost and improve the healthcare outcomes for the beneficiaries. It has been developed over a period of time and is a big industry the world over today.

Moderate intensity exercise of a non-structured nature seems to facilitate most of the disease prevention goals and health promoting benefits. With new guidelines promoting a less intense and more time-efficient approach to regular physical activity, it is hoped that an upward trend in the physical activity patterns, and specifically children at risk for chronic disease, will develop in the near future.

### **HEALTH IS WEALTH**