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SHORT COMMUNICATION

Sitting is equivalent to smoking: The perils of sedentary lifestyle

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Noncommunicable diseases (NCD's) account for 63 % of all death globally and 80 % of it are from low and middle income countries [1]. Physical inactivity is one of the major risk factor for NCD's accounting for 5.3 million deaths globally every year; more than 5.1 million deaths attributed to smoking [1]. In multiple interventional trials, the magnitude of benefit of physical exercise is equal to that achieved by cessation of smoking. Hence physical inactivity/prolonged sitting is considered as equivalent of smoking.

It is worth recounting that regular physical activity results in multiple health benefits as tabled below:

Physical Activity decreases

- Coronary artery disease (CAD) by 45%
- Stroke by 60%
- Hypertension by 30%
- Colon cancer by 41%
- Breast cancer by 31%
- Type 2 diabetes by 50%
- Osteoporosis by 59%
- Obesity
- Metabolic Syndrome, Dyslipidemias

Apart from above, it

- Increases life span
- Improves Erectile Dysfunction (ED)
- Improves mood, Sleep quality, Immunity, Vitamin D levels, Lung Volumes, Cognitive function, Quality of life

- Also improves Smoking Cessation rates,
- In patients with established CAD
- Improves Angina, decrease MI rates, improves survival,
- In patients with heart failure
- Increases heart function
- Increases quality of life
- In patients with Peripheral Arterial Disease (PAD)
- Increases walking distance

On the other side of coin, physical inactivity increases risk of cancer, stroke, heart diseases, and diabetes by 22 % and shortens life span. Even though the above statements of exercise benefits and harms of inactivity seem like two sides of a coin, the message of benefits with exercise had a neutral connotation implying that inactivity is non harmful. Thus the time has come for medical fraternity to emphasize the harms of physical inactivity and not the benefits of physical exercise.

WHO recommends moderate-intensity aerobic physical activity for a minimum of 30 minutes on five days each week and additionally activities to maintain or increase muscular strength and endurance a minimum of two days each week. A Cohort study done in Taiwan involving 4,16,175 individuals revealed the least minimum duration of exercise for mortality benefit as 15 minutes per day or 90 minutes per week [2]. Despite cognisance of above facts, population studies reveal large scale prevalence of physical inactivity and sedentarism. In place of leisure time physical activity (LTPA), children and adults are spending time in front television. According to studies 45 % to 70 % LTPA is being spent viewing TV in Indians, Europeans and Americans. Watching TV for 2 hrs increases risk of diabetes by 20 % and all cause (including cancer related mortality) and cardiovascular mortality by 8 and 15 % respectively [3]. A review of several studies has confirmed that prolonged total sedentary time (measured objectively via accelerometer) has a deleterious relationship with cardiovascular risk factors, disease, and mortality outcomes [4].

One of the common excuses for not performing daily exercises is lack of time. It's a well established firm that 2, 3 or 4 bouts of 10 minutes exercise have

similar benefit when compared to uninterrupted physical activity [5]. The review of multiple clinical trials established a fact that repeated short bouts of exercise over a period of day is as good as continuous exercise for health benefit. This is a very useful fact considering the commonest reason cited for not exercising is lack of time.

Repeated small scale physical activity like walking around in workplace and use of staircase skipping the elevator proved to have immense benefits. In a landmark GENEVA stair case study, Philippe Meyer and his group demonstrated in a 12 week trial of using stair case skipping elevator has significantly decreased diastolic BP, LDL cholesterol, fat mass, body weight and waist circumference, increase in VO2 max at the same time [6]. It is now well known that stair case ascent burns more calories than aerobics, jogging, rowing or tennis!

It is never too late to start exercise. In a study where 2,205 men aged about 50 years who took up physical activity for the first time at that age and followed-up for 35 years, it has been shown to have significant reduction in mortality and incidence and development of multiple risk factors [7]. Such quantum of benefits were also found in women [8], elderly [9] and physically challenged [8, 10].

It is clearer now that recommended 30 min activity per day may not be enough as prolonged sitting during work hours is undoing the benefits. So it is currently recommended that we need to interrupt sitting on hourly and 2 hourly basis. To do simple exercises either not moving from the chair or stepping aside (further information at www.nanoworkout.com).

The global challenge is clear that we have to make physical activity a public health priority to reduce burden of non communicable disease. However to achieve such a goal much work remains. Interventions at various levels are the urgent need of the hour to tackle this new risk factor. At personnel level daily exercise, mobility during the working hours including exercises while sitting and in the office room, using the stair case, active transportation at work place are few of the interventions. At government level creating public spaces/ parks for walking and physical activity, insisting compulsory physical education at school level, improved and well integrated public transport systems, urban planning

need to be persuaded. NGOs may have to do their bit by taking the message to masses and acting as liaison between them and government. Countries like Brazil and Columbia took physical activity programme on a large scale and as a national policy and within 3 to 5 years they found that the money is well spent as sedentaryism decreased from 9.6 % to 2.7 % with 50 % decrease in hospital admissions for Hypertension, decrease in prevalence of other risk factors [11].

Thus physical inactivity is as harmful as smoking. In fact it is 3rd leading cause of death worldwide following hypertension and smoking. The Homo sapiens who evolved 1.9 million years ago have become sedentary over a period of last 7 generations more so in the current digital age [12]. The onus is on the physicians as well as on the government to increase physical activity levels in community and thus achieve same health benefits as it has been achieved by quitting smoking.

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