

Masala

THE BENEFITS OF PHYSICAL ACTIVITY

To get born, your body makes a pact with death, and from that moment, all it tries to do is cheat

—Louise Gluck - *A Slip of Paper*

In a previous *Masala*,¹ I had discussed 2 papers on how ‘4000 steps per day’ is the sweet spot for optimal physical activity and how any activity is better than none. Since then, there has been a spurt of research on the benefits of physical activity and my focus is on some of the salient articles that discuss these benefits.

Blood pressure

‘Aerobic exercise training, dynamic resistance training, combined training, high-intensity interval training and isometric exercise training are all significantly effective in reducing resting systolic and diastolic blood pressure. Overall, isometric exercise training is the most effective mode in reducing both systolic and diastolic blood pressure.’ This is from a meta-analysis of 270 randomized controlled trials,² stressing that while any activity is good, strength training is perhaps better for blood pressure (BP) management and therefore a combined activity programme including both aerobic and strength training works best.

Another study also using UK Biobank data³ found that in 49 060 patients with diagnosed high BP, moderate physical activity (MPA) measured by accelerometers was significantly associated with all-cause mortality improvement of 34%–54% (i.e. people with high BP lived longer if they were physically active).

Diabetes

An interesting study using the UK Biobank data⁴ showed that moderate to vigorous physical activity (MVPA; i.e. 30–45 minutes of brisk walking per day or equivalent) measured by accelerometer was strongly inversely associated with the development of diabetes (i.e. more active the person, less the chance of developing diabetes) including in those with the highest genetic risk of type 2 diabetes. This means that irrespective of genetic risk, the more active you are, the less the chance of developing type 2 diabetes.

Cancers

Many papers in the recent past have shown that MVPA or vigorous physical activity (VPA) reduces all-cause or even cancer-specific mortality. What about the effect of PA on reducing the occurrence of cancer in the first place? It is not easy to evaluate such cause and effect given that correlation does not imply causation. When papers on this subject are published in high quality journals, maybe it is time to go through the data.

One thought-provoking study by Stamatikis *et al.*⁵ again looking at the UK Biobank evaluated 22 398 people who said they were non-exercising, but then checked their accelerometer data for vigorous intensity and vigorous intermittent lifestyle physical activity (VILPA) and found that a minimum of 3.4 to 3.6 minutes of VILPA was associated with a 17%–18% reduction in the incidence of cancer risk. By extension, this implies that those who exercise more are likely to have higher benefits, which was shown in a meta-analysis⁶ that concluded that MVPA or VPA was associated with a reduction in cancers of the colon, breast, kidney, myeloma, liver and non-Hodgkin lymphoma.

Sleep

While optimal sleep 7–9 hours is ideal, many people typically sleep shorter and a few, longer, which may have adverse health outcomes. In keeping with earlier research on this subject, another UK Biobank related study⁷ found that MVPA or VPA attenuated the downsides of poor sleep, significantly. If for whatever reason you are not able to find 7 hours of sleep per day, being active can help reduce the deleterious effects of poor sleep.

Falls and fractures

Not falling and not fracturing if you fall are critical for a long, healthy life. An article by Wing Kwok and colleagues using data from the Australian Longitudinal Study on Women’s Health⁸ showed that both MVPA and MPA are associated with a reduced incidence of falls and falls related fractures.

Cognitive decline and dementia

PA can reduce the rate of cognitive decline but a study from the USA⁹ of 91 298 patients with Alzheimer disease found that VPA of around 40 weekly minutes would reduce 12 238 deaths per year, improving to 37 710 deaths with a VPA of 140 weekly minutes.

What does this all mean for us? PA is the ‘magic pill’, guaranteed to increase our healthspan and lifespan.

New data from 2023 and early 2024 clearly shows that MPA, MVPA and VPA can improve blood pressure control, blood sugar control, reduce the incidence of some forms of cancer, attenuate the downsides of poor sleep, reduce falls and falls related fractures and reduce deaths associated with dementia. What more does anyone want?

REFERENCES

- 1 Jankharia B. *Masala*. *Natl Med J India* 2021;**34**:380.
- 2 Edwards JJ, Deenmamode AHP, Griffiths M, Arnold O, Cooper NJ, Wiles JD, *et al.* Exercise training and resting blood pressure: A large-scale pairwise and network meta-analysis of randomised controlled trials. *Br J Sports Med* 2023;**57**:1317–26.
- 3 Xiang B, Zhou Y, Wu X, Zhou X. Association of device-measured physical activity with cardiovascular outcomes in individuals with hypertension. *Hypertension* 2023;**80**:2455–63.
- 4 Luo M, Yu C, Del Pozo Cruz B, Chen L, Ding D. Accelerometer-measured intensity-specific physical activity, genetic risk and incident type 2 diabetes: A prospective cohort study. *Br J Sports Med* 2023;**57**:1257–64.
- 5 Stamatikis E, Ahmadi MN, Friedenreich CM, Blodgett JM, Koster A, Holtermann A, *et al.* Vigorous intermittent lifestyle physical activity and cancer incidence among nonexercising adults: The UK Biobank Accelerometry study. *JAMA Oncol* 2023;**9**:1255–9.
- 6 Matthews CE, Moore SC, Arem H, Cook MB, Traber B, Håkansson N, *et al.* Amount and intensity of leisure-time physical activity and lower cancer risk. *J Clin Oncol* 2020;**38**:686–97.
- 7 Liang YY, Feng H, Chen Y, Jin X, Xue H, Zhou M, *et al.* Joint association of physical activity and sleep duration with risk of all-cause and cause-specific mortality: A population-based cohort study using accelerometry. *Eur J Prev Cardiol* 2023;**30**:832–43.
- 8 Kwok WS, Khalatbari-Soltani S, Dolja-Gore X, Byles J, Tiedemann A, Pinheiro MB, *et al.* Leisure-time physical activity and falls with and without injuries among older adult women. *JAMA Netw Open* 2024;**7**:e2354036.
- 9 López-Bueno R, Yang L, Stamatikis E, Del Pozo Cruz B. Moderate and vigorous leisure time physical activity in older adults and Alzheimer’s disease-related mortality in the USA: A dose-response, population-based study. *Lancet Healthy Longev* 2023;**4**:e703–e710.

BHAVIN JANKHARIA

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