



Letter to Editor

IJSEHR 2023; 7(2): 32-33
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www.sportscienceresearch.com
Received: 06-9-2023
Accepted: 04-11-2023
DOI: 10.31254/sportmed.7201

**The Importance Of Type 2 Diabetes And Physical Activity
Research During The COVID-19 Pandemic And Beyond: A
Letter To The Editor**

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Abstract

Diabetes and diabetes-related diseases or health problems are global issues, and they cause human distress and great expenditures in a society. Therefore, diabetes and physical activity research is remarkable from a viewpoint of individual and public health especially during the COVID-19 pandemic and beyond. In a Corona-changing world it is important to prioritize physical activity in health promotion and strengthen scientific research to highlight the significance and the health benefits of physical activity for improving the management of diabetes (especially type 2), as well as to prevent the increase in global burden of diabetes, other non-communicable diseases and COVID-19. The new research findings could contribute solid scientific-based evidence to the international guidelines on physical activity in preventing and managing type 2 diabetes, and decreasing the diabetes-related risk of morbidity and mortality. Therefore, type 2 diabetes and physical activity research is timely and relevant, focusing on one of the leading health problems that our time is currently facing. Finally, in order to be successful, to change and save lives, the diabetes research requires more funding.

Keywords: Diabetes, Health, Physical activity, Research, Type 2 diabetes.

With this letter I want to draw attention to the importance of diabetes and physical activity (PA) research during the COVID-19 pandemic and beyond. Diabetes is extremely one of the most important medical problems of our time, affecting a diverse age range of people globally ^[1]. Estimated 1.6 million deaths were directly caused by diabetes in 2016 ^[1], and deaths from diabetes increased by 70% globally during 2000-2019 ^[2]. Furthermore, diabetes is a major cause of kidney failure, stroke, heart attacks, blindness, and lower limb amputation ^[1]. Diabetes is recognized as the second most prevalent non-communicable chronic diseases (NCDs) in individuals with COVID-19 disease, and diabetes is highly associated with increased incidence of COVID-19 disease severity and mortality ^[3]. It has also been observed that there was 33.5% reduction in PA and 28.6% increase in sedentary behavior during COVID-19 outbreak related to home confinement ^[3].

As described previously, diabetes and diabetes-related diseases or health problems are global issues, and they cause human distress and great expenditures in a society [1, 2]. Therefore, type 2 diabetes mellitus (T2DM) and PA research is remarkable from a viewpoint of individual and public health especially during the COVID-19 pandemic and beyond. In a Corona-changing world it is important to prioritize PA in health promotion and strengthen scientific research to highlight the significance and the health benefits of PA for improving the management of diabetes (especially T2DM), as well as to prevent the increase in global burden of diabetes, others NCDs and COVID-19 ^[3].

Prevention is a priority aim of health policies, and scientific studies have shown that PA plays a significant role in primary and secondary prevention and the treatment of several chronic diseases, decreasing the risk of premature mortality among general population and people with T2DM ^[4, 5]. PA is also an important way to prevent or delay the onset of T2DM ^[1]. There is a scientific evidence based on meta-analysis that moderate intensity of PA (e.g. brisk walking) can substantially reduce the risk of T2DM ^[6], whereas physical inactivity is a risk factor for mortality by diabetes ^[7]. Meta-analysis also supports the evidence that a structured exercise intervention program is effective for improving insulin resistance in T2DM ^[8]. It has been observed that moderate or high levels of PA reduce total and cardiovascular mortality among Finnish patients with T2DM, both leisure-time and occupational PA are essential components of healthy lifestyle ^[5]. Meta-analysis also suggests that higher levels of PA are associated with lower risk of

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cardiovascular disease and total mortality in individuals with diabetes [9].

However, there is still less high-quality scientific data based on the relationship between all-cause and cardiovascular mortality among general population and people with T2DM at different ages and different PA domains (leisure-time, domestic, active transport, total walking and total PA), PA intensity (light, moderate and vigorous), and PA level. There is need for new randomized controlled trials and prospective cohort studies with larger population at different ages and longer follow-up time. It could be also investigated whether there were differences between age groups, sexes or nationalities. Overall, new research findings might substantiate the evidence on the beneficial effects of PA on reducing the risk of mortality among general population and people with T2DM. Deeper understanding could also help to reduce globally high T2DM and others NCDs prevalence in the future. New research could reveal new information on the possible protective effect of PA, according to its domains, intensity and level, on all-cause and cardiovascular mortality among general population and people with T2DM. New results, in addition to being socially important, could be truly novel in terms of the possible effect of some biomarkers on mortality.

In conclusion, new research findings could provide empirical evidence supporting the widely shared view that general population and individuals with T2DM should engage in regular PA. Findings might also highlight that not only leisure-time PA but also occupational activity and walking to and from work are essential components of healthy lifestyle by reducing the risk of mortality and morbidity among general population and individuals with T2DM. Therefore, findings could be considered as a stimulus for engaging in regular PA both among general population and especially individuals with T2DM or others NCDs. This could reduce healthcare expenditure and losses of productivity. Furthermore, the new findings could contribute solid scientific-based evidence to the international guidelines on PA in preventing and managing T2DM, and decreasing the diabetes-related risk of morbidity and mortality. Therefore, T2DM and PA research is timely and relevant, focusing on one of the leading health problems that our time is currently facing. Finally, in order to be successful, to change and save lives, the diabetes research requires more funding. This view is also supported by WHO which launched *The Global Diabetes Compact* in 2021 [10].

Conflict of interest

None.

Funding

None.

Ethical issues

This letter to the editor was conducted according to a good scientific practice. Dr. Titta K. Kontro declares that this letter to the editor was presented clearly, honestly, and without fabrication, falsification or inappropriate data manipulation. Data was published only in anonymized form.

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REFERENCES

1. WHO. 2020a. Diabetes. (Access date 25th December 2020) Available online at: <https://www.who.int/news-room/fact>

[eets/detail/diabetes#:~:text=Diabetes%20is%20a%20major%20cause,high%20blood%20glucose%20in%202012.](https://www.who.int/news-room/fact-sheets/detail/diabetes#:~:text=Diabetes%20is%20a%20major%20cause,high%20blood%20glucose%20in%202012.)

2. WHO. 2020b. Heart disease remains the number 1 killer; diabetes and dementia enter top 10. (Access date 25th December 2020) Available online at: <https://www.who.int/news/item/09-12-2020-who-reveals-leading-causes-of-death-and-disability-worldwide-2000-2019>.
3. Marcal, I. R., et al. 2020. The Urgent Need for Recommending Physical Activity for the Management of Diabetes During and Beyond COVID-19 Outbreak. *Frontiers in Endocrinology* Vol 11, 584642.
4. World Health Organization (WHO) (2014). Global status report on non-communicable diseases 2014. (Access date August 20th, 2019) Available online at: https://apps.who.int/iris/bitstream/handle/10665/148114/9789241564854_eng.pdf;jsessionid=78E432C751DECDAFE80FD92FFBC9D200?sequence=1
5. Hu, G. et al. 2004. Occupational, Commuting, and Leisure-Time Physical Activity in Relation to Total and Cardiovascular Mortality Among Finnish Subjects With Type 2 Diabetes. *Circulation* 110, 666-673.
6. Jeon, C. J, et al. 2007. Physical Activity of Moderate Intensity and Risk of Type 2 Diabetes. A systematic review. *Diabetes Care*, Vol 30 (3), 744-752.
7. Silva et al. 2019. Physical inactivity as risk factor for mortality by diabetes mellitus in Brazil in 1990, 2006, and 2016. *Diabetol Metab Syndr*, 11, 23.
8. Kumar, A.S. et al. 2019. Exercise and insulin resistance in type 2 diabetes mellitus: A systematic review and meta-analysis. *Annals of Physical and Rehabilitation Medicine* 62, 98–103.
9. Sluik, D., et al. 2012. Physical Activity and Mortality in Individuals With Diabetes Mellitus. A Prospective Study and Meta-analysis. *Arch Intern Med*.172(17), 1285-1295.
10. WHO. 2020c. WHO announces the Global Diabetes Compact. (Access date 25th December 2020) Available online at: <https://www.who.int/news/item/17-11-2020-who-announces-the-global-diabetes-compact>

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