



## Editorial

## Exercise in medicine



Last autumn, the United States (US) Department of Health and Human Services presented the new updated edition of The Physical Activity Guidelines for Americans based on the scientific evidence available.<sup>1</sup> These guidelines provide new evidence for which dose physical activity (PA) is likely beneficial, claiming that achieving the recommendations will substantially improve individual and population health.<sup>2</sup> The guidelines emphasize that moving more and sitting less will benefit nearly everyone; that individuals performing the least PA will benefit most by even modest increases in moderate-to-vigorous PA; and that additional benefits will occur with more PA. This is of great importance since approximately 80% of US adults and adolescents are insufficiently active, which puts them at unnecessary risk for chronic diseases and conditions.<sup>1</sup>

It is well documented that regular PA or exercise training play an important role in the management of at least 26 medical conditions, including cardiovascular (CV) disease (CVD), stroke, hypertension, colon and breast cancer, and type 2 diabetes (T2D).<sup>3</sup> Large population studies have also shown a strong correlation between exercise and risk reduction for premature death. In a general population, as little as 15 min of exercise each day is associated with a 14% reduction in mortality, and a further 4% reduction can be applied to each additional 15 min of daily exercise performed.<sup>4</sup> Also among people with coronary heart disease (CHD) exercise has shown to reduce risks, with a reduction in CVD mortality of about 26% and 18% fewer new hospital admissions.<sup>5</sup> A recently published study showed that only 10 min of brisk walking per day in this patient group was associated with 33% risk reduction in premature mortality, and that high-risk individuals were the ones with the greatest benefit from the exercise.<sup>6</sup> Calculations even indicate that exercise in some cases can be as effective as optimal medication in secondary prevention of CHD, stroke rehabilitation, heart failure treatment, and T2D prevention.<sup>7</sup>

Engaging in regular PA is one of our best medicines and should therefore be used more extensively. There is a need for a paradigm shift allowing for more emphasis on comprehensive assessment of CV health and implementation of health promoting measures across the human lifespan. The society needs to encourage PA for everybody and promote PA opportunities in workplaces, schools, and communities.<sup>8</sup> With these challenges in mind, the Cardiac Exercise Research Group (CERG, [ntnu.edu/cerg](http://ntnu.edu/cerg)) at the Norwegian University of Science and Technology (NTNU) hosted the 7th Seminar on Exercise in Medicine in December 2017. During the seminar, various presentations were given regarding the impact of PA, ranging from mechanisms to implementation in the society.

In the current issue of Progress in Cardiovascular Diseases, we have world-leading researchers contributing with papers covering their topics from the seminar. The papers deal with various aspects of PA and fitness,

among others: the prevalence of physical inactivity in the US population; cardiorespiratory fitness and its clinical significance; a motivational tool for adopting a healthier lifestyle; a national integrated marketing campaign to increase PA; a framework to improve the delivery of high-intensity interval training (HIIT); CVD risk of women with breast cancer; discovery of a novel molecular target of exercise in failing hearts; a new metric to motivate people for PA, the role and mechanisms for exercise-induced troponin release; and exercise as a new therapeutic strategy to better prevent and treat dementia. Enjoy reading!

## COI/disclosures

None.

## References

1. Piercy KL, Troiano RP, Ballard RM, et al. The physical activity guidelines for Americans. *JAMA* 2018;320:2020-2028.
2. Thompson PD, Eijssvogels TMH. New physical activity guidelines: a call to activity for clinicians and patients. *JAMA* 2018;320:1983-1984.
3. Pedersen BK, Saltin B. Exercise as medicine - evidence for prescribing exercise as therapy in 26 different chronic diseases. *Scand J Med Sci Sports* 2015;25(suppl 3):1-72.
4. Wen CP, Wai JP, Tsai MK, et al. Minimum amount of physical activity for reduced mortality and extended life expectancy: a prospective cohort study. *Lancet* 2011;378:1244-1253.
5. Anderson L, Thompson DR, Oldridge N, Zwisler AD, Rees K, Martin N, Taylor RS. Exercise-based cardiac rehabilitation for coronary heart disease. *Cochrane Database Syst Rev* 2016(1), CD001800 <https://doi.org/10.1002/14651858.CD001800.pub3>.
6. Stewart RAH, Held C, Hadziomanovic N, et al. Physical activity and mortality in patients with stable coronary heart disease. *J Am Coll Cardiol* 2017;70:1689-1700.
7. Naci H, Ioannidis JP. Comparative effectiveness of exercise and drug interventions on mortality outcomes: metaepidemiological study. *BMJ* 2013;347:f5577.
8. Sallis R. Exercise is medicine: a call to action for physicians to assess and prescribe exercise. *Phys Sportsmed* 2015;43:22-26.

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