

Polish Forum for Prevention Guidelines on physical activity

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Introduction

The widely accepted SCORE system which is used for the assessment of 10-year risk of cardiovascular death and which is recommended by the European Society of Cardiology takes into account the following risk factors: age, sex, blood pressure, cholesterol level and smoking, but not indices of physical activity [1]. It should be stressed, however, that as a result of analysis of the evidence-based literature on the role of physical activity in health and disease the greatest cardiac societies have included insufficient physical activity among the most important cardiovascular disease (CVD) risk factors, as it affects the state of health, morbidity and mortality all over the world.

The essential role of physical activity in the process of risk stratification and in risk reduction results from the following associations:

1. Insufficient physical activity promotes the development of other risk factors such as: dyslipidaemia, obesity, diabetes, smoking, stress and depression.

2. Physical exercise beneficially modulates factors that favour the initiation and development of atherosclerosis and its complications.

These are the reasons for considering the lack of appropriate counselling about physical activity as a substantial shortcoming in clinical practice. A summary of the recommendations on the type and intensity of exercise in primary prevention of CVD is presented in Table I. It is worth remembering that the optimal heart rate during exercise in primary prevention of CVD should be in the range 60-75% of maximum heart rate (HR), which can be calculated simply as $220 - \text{age}$ (Table II) [2].

In most developed countries for at least 20 years the extent of 'physical laziness' has been of epidemic proportions [3]. This results from the progress of civilization which affects our lifestyle, and also from the lack of knowledge about the role of physical activity in human health.

In Poland the scale of physical inactivity is a major problem [4]. The level of physical activity and knowledge about the harmful effects of a lack of it are low in the Polish population [5]. The sedentary lifestyle usually

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Table I. Summary of recommendations on adequate physical activity in primary prevention of cardiovascular disease

Frequency of exercise	minimum 3 times a week
Intensity of exercise	moderate (60–75% max heart rate)
Time of exercise	20–60 min, average 40 min
Recommended type of exercise	endurance
Resistance training	should account for 10–15% of exercise
Energy expenditure	minimum 200–300 kcal/training > 1 000 kcal/week optimally > 2000 kcal/week

Table II. Recommended heart rate during exercise in primary prevention of cardiovascular disease

Age [years]	Heart rate (HR)	
	60% of maximal HR [beats per min]	75% of maximal HR [beats per min]
21–30	115	145
31–40	110	140
41–50	105	130
51–60	100	125
61–70	95	115

begins in early childhood and translates later into unhealthy habits and underestimation of the positive role of regular exercise in adults. The problem concerns patients as well as individuals who are responsible for the health of society (physicians, central and self-government administration, politicians). There is a need for organizational, educational and promoting actions in this neglected area. The following guidelines which are the result of the common work of eight Polish societies associated in the Polish Forum for Prevention are a step forward in this direction.

References

1. Graham I, Atar D, Borch-Johnsen K, et al. European guidelines on cardiovascular disease prevention in clinical practice: full text. Fourth Joint Task Force of the European Society of Cardiology and other societies on cardiovascular disease prevention in clinical practice (constituted by representatives of nine societies and by invited experts). *Eur J Cardiovasc Prev Rehabil* 2007; 14 (Suppl. 2): S1–113.
2. Jegier A, Stasiótek D. Skuteczna dawka aktywności fizycznej w prewencji pierwotnej chorób układu krążenia i promocji zdrowia. *Med Sportiva* 2001; 5 (Supl. 2): 109–18.
3. Manson JE, Skerrett PJ, Greenland P, VanItallie TB. The escalating pandemics of obesity and sedentary lifestyle. A call to action for clinicians. *Arch Intern Med* 2004; 164: 249–58.
4. Drygas W, Kwaśniewska M, Szcześniewska D, et al. Ocena poziomu aktywności fizycznej dorosłej populacji Polski. Wyniki Programu WOBASZ. *Kardiologia Polska* 2005; 63 (Supl. 4): 636–40.
5. Kopeć G, Sobieć B, Podolec M, et al. The level of knowledge and sources of information about cardiovascular risk factors in the Polish population. *Acta Cardiologica* 2007; 62: 631–2.

Guidelines

1. **Sedentary lifestyle**, also called 'physical laziness', is an important risk factor for cardiovascular diseases (CVD) and many other chronic illnesses. Over 50% of Polish adults – similarly to other countries – are physically inactive. Additionally, sedentary lifestyle with its harmful consequences for health is a rapidly emerging problem in children and adolescents.
2. **Increased CVD risk** associated with physical inactivity affects healthy people as well as patients with coronary artery disease (especially after acute coronary syndrome), heart failure, metabolic syndrome, hypertension, after stroke and cardiosurgery operations, and results in elevated overall mortality and cardiovascular mortality.
3. **Regular physical exercise** is one of the most important factors which have beneficial effects on most physiological processes in humans. Due to its pleiotropic action physical activity promotes proper psychophysical development, improves quality of life, and prevents atherogenesis and its complications, hypertension, diabetes, metabolic syndrome, cancer, depression and osteoporosis. Physically active persons live about 5-7 years longer than others.
4. **Promotion of physical fitness** should be implemented from early childhood and maintained until late senescence. Physical activity that is adapted to age, physical fitness and health status is an important component of health promotion.
5. **Excessive physical activity**, which means irrational, unadjusted to individual exercise capacity and environmental conditions, can be dangerous even in healthy persons. Some types of exercise may lead to injury and overload of the musculoskeletal system and increase the risk of sudden cardiac events (myocardial infarction, cardiac arrest, sudden cardiac death). Physical examination by a specialist should precede planned increase in the intensity of physical activity, especially before extreme activities or professional sport.
6. **Recommended level of physical activity**: regular (at least 3 times a week, every day if possible) activity of moderate intensity lasting for at least 30 min. The suggested activities are: brisk walking or jogging, cycling, physical exercises, swimming. Exertion of lower intensity or shorter is always better than physical inactivity.
7. **Insufficient physical activity** from the primary and secondary prevention point of view is activity of too low intensity, less than 4-5 MET (50-70 W) or of too short duration with energy expenditure of less than 500 kcal/week, for example:
 - a. leisure-time activity limited to washing, dressing, housework, slight gardening, shopping, official affairs, slight exertion during recreation (slow walking, slow cycling, angling, billiards, bowling),
 - b. activities during working time limited to sedentary or standing work, driving, automatic machine or device handling.
8. **Preventing the consequences of insufficient physical activity** involves encouraging regular, if possible every day, increased physical activity (walking, cycling, exercise, dancing) and promoting avoidance of using facilities resulting from civilization progress in everyday life: reducing the use of cars, elevators, escalators, and remote control devices.
9. **Kinesiotherapy**, which means treatment with physical activity, is an essential component of complex rehabilitation. It is an acknowledged therapeutic option in patients with CVD, based on confirmed data, the effects of which are independent of the other modern methods of therapy. It has been shown that physical activity in patients with coronary artery disease reduces the risk of acute coronary syndromes, the duration of treatment, and the risk of rehospitalisation, improves the quality of life and above all decreases the risk of death from any cause by about 20% and from cardiac causes by 26%.
10. **Complex rehabilitation** should be a stepwise process introduced after a cardiac event immediately after withdrawal of contraindications and should be continued as part of a healthy lifestyle. Properly planned physical activity should be accepted by the patient (so-called cheerful rehabilitation) and should not cause a feeling of fatigue of more than moderate degree. In order to decrease the risk of complications, it is advised to individualize patient management with the involvement of a physician and physiotherapist in the centres of complex rehabilitation.