

Physical Activity and Healthy Ageing (PAHA)

Context/Background/Policy framework

There is significant evidence to show that physical inactivity and over-nutrition are associated with a substantial economic burden in industrialized countries. Implementation of specific strategies to modify inactive behavior is critical, but could be associated with considerable costs if they are not properly evidenced and structured. To address large and meaningful public health benefits in improving the health of adults, the cost-effectiveness of those intervention strategies will be of major importance in addition to their health/clinical effectiveness. The current level of evidence is not sufficient (Muller-Riemenschneider et al, 2009¹), and few studies published relate to the potential positive impact that the health and fitness industry could bring.

From the *UN High-level Meeting on NCDs Prevention and Control Political Declaration* (NYC, Sep'11)², to the top evidences published at *Lancet Series on Physical Activity* (July 2012, 2016)³, there is a clear message that Physical Activity and Exercise can play a major role at the Public Health agenda, and significant funding and resources are being putting in place to identify cost-effective active living models of implementation and delivery.

Physical inactivity has been identified as contributing to the energy imbalance that leads to weight gain. Collectively, physical inactivity not only has substantial consequences for direct health-care costs but also causes high indirect costs due to increased periods of sick leave, work disabilities and premature deaths. For a population of 10 million people, where half the population is insufficiently active, the overall cost is estimated to be €910 million per year (WHO, 2007)⁴, based on the recent Lancet Series the effects of physical inactivity cost the world economy more than 63,5 billion US dollars (Ding et al., 2016)⁵.

This European Physical Activity Strategy was prepared in the light of the existing voluntary global targets set out in the WHO *Global action plan for the prevention and control of non-communicable diseases 2013–2020*⁶, endorsed by the Sixty-sixth World Health Assembly in resolution WHA66.10⁷ in May 2013. **A 10% relative reduction in the prevalence of insufficient physical activity by 2025 is one of its nine global targets.** In addition, increased levels of physical activity play an important role in attaining three of the other targets:

- ✓ a 25% relative reduction in the risk of premature mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases;
- ✓ a 25% relative reduction in the prevalence of raised blood pressure or containment of the prevalence of raised blood pressure, according to national circumstances; and
- ✓ halt the rise in diabetes and obesity.

¹ F Muller-Riemenschneider, T Reinhold, S N Willich. Cost-effectiveness of interventions promoting physical activity. *Br J Sports Med* 2009;43:70–76. doi:10.1136/bjsm.2008.053728.

² <http://www.ncdalliance.org/sites/default/files/rfiles/Key%20Points%20of%20Political%20Declaration.pdf>

³ www.thelancet.com/series/physical-activity; <http://www.thelancet.com/series/physical-activity-2016>

⁴ Steps to health: a European framework to promote physical activity for health. Copenhagen: WHO Regional Office for Europe; 2007 (<http://www.euro.who.int/en/health-topics/disease-prevention/physicalactivity/publications/2007/steps-to-health.-a-european-framework-to-promote-physical-activity-for-health-2007>), accessed 12 June 2015).

⁵ DING DING, KENNY D LAWSON, TRACY L KOLBE-ALEXANDER, ERIC A FINKELSTEIN, PETER T KATZMARZYK, WILLEM VAN MECHELEN, MICHAEL PRATT, for the Lancet *Physical Activity Series 2 Executive Committee*. The economic burden of physical inactivity: a global analysis of major non-communicable diseases. *Lancet Physical Activity 2016: Progress and Challenges*. DOI: [http://dx.doi.org/10.1016/S0140-6736\(16\)30383-X](http://dx.doi.org/10.1016/S0140-6736(16)30383-X)

⁶ Global action plan for the prevention and control of non-communicable diseases 2013–2020. Geneva: World Health Organization; 2013 (<http://www.who.int/nmh/publications/ncd-action-plan/en/>), accessed 12 June 2015).

⁷ World Health Assembly resolution WHA 66.10 on follow-up to the Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases. Geneva: World Health Organization; 2013 (http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_R10-en.pdf), accessed 12 June 2015).

The recently launched **Physical Activity Strategy for the WHO European Region 2016–2025**⁸ will build on the commitments of **Health 2020 – the WHO European policy framework for health and well-being** – and aligns with existing WHO frameworks and strategies, such as the *Global action plan for the prevention and control of non-communicable diseases 2013–2020*, the Action plan for implementation of the European Strategy for the Prevention and Control of Non-communicable Diseases 2012–2016, the *Global Strategy on Diet, Physical Activity and Health* and the WHO *Global Recommendations on Physical Activity for Health*. It is linked to landmark documents in related areas of health promotion and intersectoral collaboration, such as the Parma Declaration on Environment and Health, the Paris Declaration defining the Transport, Health and Environment Pan-European Programme (THE PEP) vision, and the WHO European Region Food and Nutrition Action Plan 2015–2020. It builds on the ongoing work of WHO in the field of physical activity, as illustrated by guiding documents such as *Steps to health: a European framework to promote physical activity for health* and *A healthy city is an active city: a physical activity planning guide*, among others, and by the emerging work of the WHO Commission on Ending Childhood Obesity. It also acknowledges and seeks synergy particular, the EU Council recommendation on promoting health-enhancing physical activity across sectors, the EU Council conclusions on nutrition and physical activity and the EU Action Plan on Childhood Obesity 2014–2020, as well as The Toronto Charter for Physical Activity: A Global Call for Action, launched by the Global Advocacy for Physical Activity in 2010.

The EU-WHO Strategy identifies five priority areas, with **Evaluation and Research** as the fifth one. With the main goal of supporting the strategy and related actions (through monitoring, surveillance, and provision of tools, enabling platforms, evaluation and research), the priority considers that **strengthen the evidence base for physical activity promotion is a key issue to address**.

Priority area 5 – Supporting action through monitoring, surveillance, the provision of tools, enabling platforms, evaluation and research

53. Reliable and timely information is crucial to informing national and regional policy-making. Supported by the WHO Regional Office for Europe, Member States should strengthen and expand the surveillance of physical activity, monitor and evaluate policy initiatives to promote physical activity, and support research to strengthen the evidence base for physical activity and health. A deeper understanding of physical activity patterns among different social groups, including by gender, age and socioeconomic status, is crucial in order to adapt interventions accordingly.

Objective 5.2 – Strengthen the evidence base for physical activity promotion

55. Member States may make supporting research a priority in order to strengthen the evidence base on effective and efficient interventions to promote physical activity and appropriate government policy instruments on physical activity, including intersectoral approaches. Areas of future research could include approaches to engaging vulnerable population groups across the life-course in physical activity, the effectiveness of childhood obesity surveillance programmes, and innovative approaches to promoting physical activity for adolescents, in particular through the use of technology and peer networks. The evidence on the health benefits of physical activity is robust; however, there are some gaps that could be addressed, including the role of sedentary behaviour as an independent risk factor for health and the relationship between physical activity and other health-related behaviours, such as diet or tobacco smoking.

⁸ Physical activity strategy for the WHO European Region 2016–2025, WHO-Europe, 2015.

http://www.euro.who.int/_data/assets/pdf_file/0010/282961/65wd09e_PhysicalActivityStrategy_150474.pdf?ua=1

The Health and Fitness Industry, and very specially *EuropeActive*, have been actively involved (since 2007) in projects and activities in partnership with Governments across Europe to promote an active and healthy behaviour, and significant funding support has been received from the European Commission in that regard⁹.

In fact, the health and fitness sector, represented by EuropeActive, recognises its responsibility to work with partners at all levels across the European Union to create a healthier society, where living an active lifestyle is the social norm, rather than an exception, and where daily physical activity and exercise is seen as part of the routine part of the prevention and management of disease. Its mission is to get *more people | more active | more often* (EHFA, 2011).

But despite the obvious capacity of the fitness sector across Europe, its willingness to contribute to increased levels of physical activity, and its track record of positive performance, the sector is rarely recognised in national governments' physical activity promotions.

Accordingly to a shared vision with **ukactive Research Institute**, *we must now translate repeated lab-based research findings into real world services, with a clear two-way link between academia and frontline practice: one without the other is completely pointless. We need a constant process of refining the evidence to support practical interventions, which can be realistically implemented and scaled-up if shown to be effective*¹⁰.

*“High-quality research and robust evidence are the cornerstones of effective policy, and while we know that physical activity is one of the most powerful medicines available to society, and we’ve proven that adding just small amounts of activity improves the health and wellbeing of almost everyone – all the resources and time spent investigating activity amounts to very little **unless we know how to support more people, to be more active, more often.** The ukactive Blueprint highlights **necessary steps to support the academic community and physical activity providers to put research at the heart of practice.**”*

(Prof. Greg Whyte, *ukactive Blueprint for an Active Britain*, 2015)¹¹

⁹ Becoming the Hub: The Health and Fitness Sector and the future of Health Enhancing Physical Activity, EHFA, 2011.

http://www.ehfa-programmes.eu/sites/ehfa-programmes.eu/files/documents/hub/HUB_THE%20FINAL%20REPORT.pdf

¹⁰ *ukactive Blueprint for an Active Britain, Research and Evaluation*, 2015, pages 30 to 34.

¹¹ http://www.ukactive.com/downloads/managed/ukactives_Blueprint_for_an_Active_Britain_-_online.pdf

“Promoting Physical Activity and Health in Ageing (PAHA): an innovative 6-weeks intensive intervention for inactive people integrating structured exercise, exercise counselling and behavioral change”.

AIM: To demonstrate if 6 weeks intervention of structured exercise, exercise counselling and behavioural change support is effective in increasing physical activity levels in previously self-perceived inactive individuals (55-65 year old).

PRIMARY OUTCOME: Level of physical activity (volume/week), self-reported (IPAQ) and directly measured by a portable accelerometer (MyWellnessKey, MWK, Technogym, Forly Italy) in a subsample of the third of the participants.

PROJECT MAIN RESULTS:

A group of 1,080 inactive subjects 55 to 65 years old was targeted to be involved in the project. A total of 669 participants (382 females and 287 males) from 8 different European countries were enrolled in the project. These results mean an adoption rate of 62% recruitment, improving significantly expected figures from previous research studies in community-based interventions with inactive populations, and especially in this population group (a recent project in UK “getukactive study” reported that a total of 1,146 participants were recruited against a target of 2,080, with an adoption rate of 55%, Mann et al., 2016)¹².

A subgroup of 208 participants (121 females and 87 males), accounting for 32% of the total intervention group used advanced physical activity tracking technology (MyWellness™ key), during the length of the project. This subgroup was receiving the intervention in 8 of the 24 fitness centres participating in the project and uploading the data in a special module within the MyWellness Cloud supplied by Technogym.

The research team did not try to maintain participant numbers through any form of incentives, motivational prompts, communications, etc., different to the PAHA intervention proposed model (an innovative educational programme for personal trainers to support and facilitate the behavioural change of participants by integrating behavioural change tools, exercise counselling and tailored exercise prescription during a simple and replicable 6-weeks intervention programme for ageing inactive participants).

Completion of the 6-weeks intervention programme was achieved by the 89% of participants, with better results in the subsample that used accelerometers to track activity levels (96% versus 82%).

One of the main aims of the project was to get 20% of the participants still exercising to the benefit of their health 3 months after they completed their 6-weeks trial sessions. The results coming from the tracked activity group are especially remarkable with an adherence rate of 78%, compared to 62% of the rest of participants.

Although the final expectation from the project was that 15% of participants should be physically active 6 months after the end of the intervention, unfortunately the extension of the project (due to delays in the initial planning and recruitment of intervention sites and personal trainers and the completion of the educational and training programme for the exercise professionals) has not allowed the research team to collect this critical final data, as most of the participants have not reached this deadline yet.

¹²MANN, S., JIMENEZ, A., DOMONE, S. BEEDIE, C. Comparative effects of three 48-week community-based physical activity and exercise interventions on aerobic capacity, total cholesterol and mean arterial blood pressure. *BMJ Open Sport Exerc Med* 2016; 2:e000105. doi:10.1136/bmjsem-2015-000105

Nowadays, based on the 3-months follow up results and in our previous experience in the field, we are confident to confirm that this goal is going to be achieved. Accordingly to extensively reported research results, it is estimated that over 50% of people will drop out of their attempted exercise routine after 6 to 12 months of initiation (Dishman, 1988, Hallal et al, 2012). If we consider these results, from an average of 78% participants still active after 3 months, we could state that at least 39,5% of them in the tracked activity group and about 30% in the reported activity group will be expected to keep the active behavior at the 6-months period follow up.

It is important to note that this limited adherence to exercise after 6 months from starting is no lower than that reported for drugs (WHO, Sabate, 2003). However, while there is general confidence that licensed drugs are effective when taken recent reports suggest that this confidence does not currently extend to exercise. In fact, whilst drug effects are routinely monitored, policymakers are often unable to evaluate the outcomes of PA interventions on directly measured health variables (Beedie et al, 2015).

One of the most valuable outcomes coming from the project is the fact that the combination of motivational exercise counselling and supervision and the use of technology is allowing for effective collection and analysis of active behaviour data. As a result, the figure included below (figure 1) is presenting evidences of the impact of the intervention in 32% of the participants, with detailed values of average daily physical activity at different intensity levels.

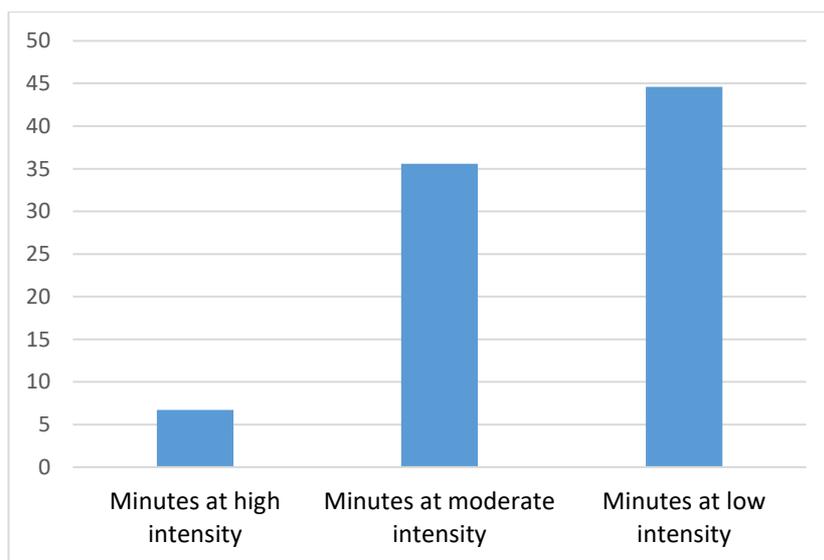


Figure 1

Minutes of daily physical activity and exercise from the subsample of participants using accelerometers (n=208)¹³.
high intensity (more than 6METs); moderate intensity (between 3 and 6 METs); low intensity (less than 3 METs)

The data, as it is displayed in figure 1, is extremely significant. Participants on average have moved for 35 minutes at moderate intensity and almost 7 min at high intensity physical activity (a total of **42 minutes per day**). These values far exceed the WHO/EU recommendations for being considered moderately active (150 minutes/week that correspond to about 21 minutes/day). Participants of the PAHA project (those that downloaded the data) were **almost twice as active as the minimum requirements**.

¹³Data represents basically what subjects have done, on average, across the 6 weeks of the study. The vast majority of the data comes from physical activity; some subjects have also some data of structured exercise.

Recent reports have highlighted the lack of evidence for the effectiveness of real world PA interventions. The 2014 Public Health England report '*Identifying What Works for Local Physical Inactivity Interventions*' identified that, when evaluated against stringent NESTA standards for evidence (2013) not one of almost 1,000 exercise interventions met Level 5 (i.e., consistent replication and positive impact), with less than 1% meeting NESTA Level 3 (i.e., demonstration of causality).

PAHA project is integrating an additional data analysis phase of the project, based on an individual evaluation of each intervention (per country and per centre) against NESTA standards for evidence, comparing the results with the similar ones identified at the 2014 Public Health Report 'Identifying What Works for Local Physical Inactivity Interventions'. This part of the project will identify specific recommendations for effective implementation at community level.

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