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# Role of Primary Health Care in Physical Activity Promotion

## *Die Rolle der medizinischen Grundversorgung in der Förderung körperlicher Aktivität*

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### ZUSAMMENFASSUNG

Körperliche Aktivität ist gesund und bietet eine praktische und sichere Möglichkeit, Krankheitsbelastungen erheblich zu verringern. Dennoch wird dieses Potential durch zu wenig Bewegung in den meisten Bevölkerungsgruppen nicht genutzt. Das Gesundheitssystem sollte Patienten und die gesamte Bevölkerung auf lange Sicht dabei unterstützen, körperliche Aktivität auf ein ausreichendes Gesundheitsniveau zu steigern. Der größte Anstieg des Aktivitätsausmaßes könnte durch die Weiterentwicklung und Umsetzung einer weitreichenden Gesundheitsförderung in der Politik erreicht werden. Das Gesundheitssystem und die medizinische Grundversorgung bieten hauptsächlich Einzelleistungen an, wie beispielsweise Beratungen zur körperlichen Aktivität. Diese Leistungen werden jedoch durch die medizinische Grundversorgung nicht ausreichend genutzt, teilweise aufgrund falscher Einstellungen, aber hauptsächlich aufgrund von praktischen Hindernissen. Die Beratung zur körperlichen Aktivität kann in die Arbeitsabläufe der medizinischen Grundversorgung integriert werden. Es gibt realisierbare Mittel, die Qualität zu verbessern und den Gebrauch der Beratungsgespräche zu steigern. Um jedoch Leistungsförderungen für körperliche Aktivität durch die medizinische Grundversorgung zu erhalten, sind zwei fundamentale Änderungen erforderlich. Erstens sollte körperliche Aktivität als ein Mittel betrachtet werden, das genau wie Medikamente zum Repertoire der medizinischen Grundversorgung gehört. Hieran arbeitet die Exercise is Medicine Initiative. Zweitens sollten führende Medizinexperten sowie wissenschaftliche und professionelle Organisationen im Gesundheitssektor körperliche Aktivität als effektives Mittel betrachten.

**Schlüsselwörter:** körperliche Aktivität, medizinische Grundversorgung, Prävention.

### INTRODUCTION

Physical activity (PA) is healthy, and it offers a practical and safe means to decrease substantially the burden of a number of common diseases by being an important component especially in their prevention, but also in their treatment and rehabilitation (11). However, only a minor part of the population in most countries is sufficiently active (23,66). Thus, the health-enhancing potential of PA is in partial use only.

It is obvious that the health care system should encourage and support the patients and the population at large to increase their PA to sufficient level for health. The largest and most sustainable increase in PA would be gained by development and implementation of wide-ranging health promotion policies (74) adapted to PA. However, currently the health care system and the primary health care (PHC) as a major part of it provide mainly individual services based on acute clinical needs. Treatment goes before prevention and health promotion, and there is likely to be reluctance to accept

### SUMMARY

Physical activity (PA) is healthy, and it offers a practical and safe means to decrease substantially the burden of diseases. However, due to lack of sufficient PA in most populations, this potential is in partial use only. The health care system should support the patients and the population at large to increase their PA to sufficient level for health. The largest and most sustainable increase in PA would be gained by developing and implementing wide-ranging health promotion policies adapted to PA. However, currently the health care system and the primary health care (PHC) provide mainly individual services, e.g. counseling on PA. Even these services are not, however, used widely by the PHC due partly to attitudes but mainly to practical obstacles. PA counseling can be incorporated in the routine work of the PHC, and there are feasible means to improve the quality and increase the use of PA counseling. However, in order to get PA promotion services offered widely by the PHC, two fundamental changes are needed. First, PA and especially systematic exercise training should be considered as a means belonging to the repertoire of PHC, comparable to pharmaceuticals. The Exercise is Medicine Initiative is working towards this goal. Second, the leading medical experts as well as the major scientific and professional organizations within the health sector should accept PA as an inherent and effective means to further their goals.

**Key Words:** Physical activity, primary health care, prevention.

health promotion tasks as responsibilities of PHC. The opinion of a general practitioner regarding PA promotion may be shared by many others: "Physical activity may be good for you but we are not the key players. General practice is the care of the individual. Physical inactivity is a social problem. Let us not be foolish enough to accept responsibility for a task we cannot deliver" (45).

It would be important that PHC would use its potential in promoting PA by means that are familiar and accepted in its daily work, and that are shown to be effective. In longer term wider involvement of the health care system and also PHC into PA promotion is a desired goal. This review examines the current status and future perspective of PA promotion in PHC and possibilities to influence it.

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### CURRENT PHYSICAL ACTIVITY PROMOTION IN PRIMARY HEALTH CARE

Research on the practice of PA promotion in PHC is limited mainly to PA counseling and in lesser degree to exercise referral. PA or exercise counseling refers to advising people on physical activity during one or more visits to health professionals. In exercise referral a patient is referred by a health care professional to a third party service provider to increase his/her PA by individualized program.

PHC is in good position to provide PA counseling by having frequent contacts with a large part of the population (64,41,28). Most patients and people at large consider the health care system a reliable institution to provide advice on PA (41,27). However, in most countries PHC offers PA counseling to a minority of the patients only (25). The highest figures of PA counseling are seen in Denmark and in some parts of Sweden, where it has been taken in systemic use (28,38).

Also the proportion of physicians providing PA counseling is in general low, although it varies widely between 20% and 90% in different countries and settings (28,12,61). The attitudes of the physicians in PHC towards physical activity are mainly positive (24). However, a large proportion of them are uncertain about the effectiveness of their counseling and feel uncomfortable in providing detailed advice. Nurses and physiotherapists have more positive attitudes and perceptions (24), and counseling provided by allied health care professionals may lead to better long-term effects than that provided by physicians alone (69).

### EFFICACY, EFFECTIVENESS AND FEASIBILITY OF PHYSICAL ACTIVITY COUNSELING AND EXERCISE REFERRAL

In a systematic review eleven studies out of 15 showed increased self-reported PA at 12 month, and pooled analysis of 13 studies showed small to medium effects (odds ratio 1.42 (95% CI 1.17 to 1.73) for dichotomous data (55). Twelve (95% CI 7 to 33) patients need to be treated with an PA intervention to get one additional sedentary adult to increase his/her PA to recommended level at 12 months. In comparison, for smoking cessation advice, the estimated number needed to treat to get one person to stop smoking varies between 50 and 120. Additional analyses suggested that brief counseling might be as effective as more intensive interventions.

Further, PA counseling has been shown to be efficacious by increasing PA in small to moderate degree specifically in women (36), in older people (3,53,54,26), and in chronically ill adults (8), as well as by improving physical functioning and mental health in middle-aged and older women (36), mobility in older adults (53), and by decreasing modestly cardiovascular and metabolic risk factors in persons with high baseline levels (44,35,48).

Effectiveness of PA counseling delivered as routine PHC service is shown e.g. by a large pragmatic randomized trial. The subjects that were counseled on PA by family physicians increased their activity by 18 min/week (95% CI 6-31 min/week) more than the control patients at 6-month follow-up. Those subjects achieving recommended level of PA was 3.9% (95% CI 1.2 - 6.9%, number needed to treat 26) higher in the intervention group (20). Among patients who had received repeated exercise prescriptions there were 10.2% more than in the control group those who achieved the minimum recommended PA level at 12 and 24 month follow-up (21).

The experience from several countries shows that PA counseling can be incorporated successfully into the routine practice of the PHC (28,38,12,59,63).

A systematic review and meta-analysis found only weak evidence to support the efficacy of exercise referral to increase PA (57), and another one no consistent evidence that it leads to favorable changes in e.g. physical fitness, serum lipids or quality of life (56). However, the version used in Wales led to a slight but significant increase of PA at 12 months among the referred patients (50).

In Sweden the mixed practice of PA counseling and exercise referral has been efficacious by increasing substantially the PA level and by improving body composition and cardio-metabolic risk factors in overweight/obese elderly subjects (32). This mode of PA promotion has been found to be also effective as a routine PHC service. Among 6300 referrals half of the patients that were reached reported an increase in self-reported PA at 12 months. The proportion of inactive patients decreased from 33% to 20%, and the proportion of regularly active subjects increased from 22% to 32% in 12 months (39). Half of the patients adhered to the prescribed program at 12 months (40). In another Swedish study 65% of insufficiently active patients adhered to the prescribed exercise at 6 months. This compares favorably with the level of adherence to other treatments of chronic diseases (31). In the Danish exercise referral scheme one in 3 to 6 participants with elevated risk of cardio-metabolic disease increased their PA level until the 16-month follow-up (67).

The feasibility of exercise referral is supported by the wide use and positive experiences of the Danish (28,67) and Swedish (38) modes as well as by its rather high uptake (66%) and adherence (49%) in observational studies. In randomized trials the corresponding figures were 81% and 43%, respectively (58).

### COST-EFFECTIVENESS OF PHYSICAL ACTIVITY PROMOTION IN PRIMARY HEALTH CARE

Most PHC- or community- based interventions to promote PA, such as exercise prescription, are found to be cost-effective, especially if direct supervision of exercise is not required. Many PA interventions have similar cost-utility estimates to funded pharmaceutical interventions. The cost to move one person to the "active" category at 12 months was estimated to range between 331 and 3673 euro (17). Another systematic review found that the cost of behavioral interventions delivered by the PHC to increase PA of healthy subjects to the recommended level is about 800 euro per year (52). The cost-effectiveness of exercise referral of persons with some common chronic disease may be cost-effective, but the estimations are subject to significant uncertainty due to the small positive changes in PA and risk factors (56,50,1).

### POSSIBILITIES TO IMPROVE PHYSICAL ACTIVITY PROMOTION IN PRIMARY HEALTH CARE

Utilization of PA promotion in the health care system depends on two kinds of factors: fundamental issues such as the view of the health care administrators and practitioners on and attitudes towards PA regarding its status in the repertory of the health care system, and on more practical factors hindering or favoring the use of PA promoting measures in the routine work. Currently there is need of changes in

both kinds of factors in order to increase PA promotion in the PHC. A fundamental change needed is to get PA accepted as an appropriate and important means to further the goals of the health care system, thus being one essential means in its repertory. Without this change the number, coverage, and sustainability of the more technical changes needed to increase and improve PA promotion will remain undone or at least deficient.

In the health care system PA should be seen as a multiform biological stimulus leading to multiple benefits and few risks to health. In various regimens PA has effects comparable to medications, and it should be seen and utilized as medicine – although the patients need not to perceive it as a medicine. The Global Exercise is Medicine™ Initiative (14) and its European branch (14) build on this concept. Wide and thorough acceptance of this idea among the health care professionals, particularly among the physicians, requires hard work. Confidence on the value of PA as medicine calls for strong scientific evidence, based on clinical trials, on the effectiveness, cost-effectiveness, effectiveness compared to alternative means, safety, and practical feasibility of indication-specific PA regimens. The trials on prevention of type 2 diabetes (70,33) and the consequent studies, published in esteemed medical journals for large medical readership, are prime examples of the value and power of research in building confidence on PA as medicine. The results of the research and ways of their appropriate implementation need to be made widely known to the ordinary health care professionals by continuing education and to advocate for changes in clinical practices – just as is done continuously and effectively regarding pharmaceuticals. The Image-project (65) did this work in case of type 2 diabetes prevention.

The continuing education and advocacy related to PA needs full support of esteemed medical professionals and leading medical organizations and institutions locally, regionally, nationally, and internationally. There is great need of and fine opportunities for medical authorities and associations to contribute to an important development in the health care system, to the acceptance and uptake of PA as medicine. It can be visioned that when PA gradually gains the trust to be viewed as a means comparable to medicines, there will be fundamental changes throughout the medical and health care system beginning from the basic education of physicians and other health care professionals and reaching to the procedures of the daily practice.

In the meantime, there are a number of possibilities to increase and improve the services already in use. PA counseling and referral might be increased by decreasing the reported barriers, and by increasing the factors favoring their provision. These factors and their importance vary in different PHC systems, but the following barriers are commonly reported: lack of time, knowledge, training, materials, protocols, system support, resources, incentives and reimbursement as well as perception of PA counseling as a secondary task or ineffective, and that patients ignore or are not interested in the advice (64,28,5,24,29). Factors favoring provision of PA counseling include provider's own living habits, particularly exercise, having training on exercise counseling and support by colleagues, knowing patients well, and patients having risk factors or symptoms of especially cardiovascular diseases (64,28,25,24,10).

An essential means to increase exercise counseling is education and training of physicians and other health care professionals on the health-related aspects of physical activity, on the character-

istics of the activity needed for different indications, and on the principles and methods of counseling (30). This training might also improve attitudes towards and perceptions of exercise counseling. Substantial improvement can be gained by short courses, providing educational materials, and emphasizing the use of the numerous clinical guidelines and recommendations (38,72). However, a more thorough and sustainable solution would be inclusion of exercise medicine in the core curriculum of medical schools (72,46,49).

Another means to increase PA counseling is to decrease the time and other resources in providing it. Considerable evidence suggests brief counseling sessions are the most appropriate means to promote exercise in the PHC (55,3,20,32,39,,31). The tasks of physicians could be limited mainly to this stage, and the next steps can be successfully done by other health care professionals (24,69,59,63). Especially methods including more than brief advising on PA should be used selectively on patients with increased risk of diseases and showing factors favoring significant potential to gain from the measures (48). In health care systems based on consultation fees PA counseling should be made reimbursable.

Other means to increase the willingness of the health care personnel to offer PA for health is to develop structured but feasible protocols tailored to local conditions. The protocols should include the whole chain of measures from recording patient's PA as a vital sign, assessment of patient's needs, risks, resources, and opportunities for exercise, individualized exercise prescription, rules and processes of referral, necessary materials, tools for monitoring and self-monitoring PA, until following-up adherence to the exercise program and assessing its effects (64,26,59,39,49). A simple, widely used and valid protocol in behavioral counseling is the 5As (ask, advise, assess, assist, arrange) (7).

In the current situation, when health care professionals have limited knowledge and training for PA counseling, it might be increased and improved by offering them a package of information needed when recommending PA for given indications, and a ready written exercise advice or prescription based on that information. This kind of tool, Exercise Medicine (Liikuntaa lääkkeeksi in Finnish), is available for Finnish health care providers to support prescription of PA for 35 indications. This tool is recently made generally available through a link in the web-journal for patients published by the Finnish Medical Association. The information includes the following indication-specific sections: connection of PA to the indication giving the rationale for PA; clinically relevant and patient-centered benefits of PA in prevention, treatment, and secondary prevention/rehabilitation as appropriate; risks and potential adverse effects of PA; advisability and limitations of PA; rationale/basis for planning an appropriate PA regimen; and ready-written one-page advice (recommendation, prescription) for appropriate PA for the person and for the given indication to be printed or e-mailed as needed. The prescriber can make changes on the advice. The tool is designed to correspond to the working routines of the physicians, and is thus screen-based and readily available on the web-pages of the Finnish Medical Association (15).

#### MEANS TO IMPROVE THE QUALITY OF PHYSICAL ACTIVITY COUNSELING AND REFERRAL

A number of means to improve the effectiveness of PA counseling has been proposed and tested. These include:

- Subject selection: in terms of effective use of the limited resources as well as the motivation of the physicians, PA counseling should be given mainly to subjects who have increased risk or chronic diseases and who show favorable indicators of uptake of the advice (64,55,48,18). However, this practice tends to lead to inequality regarding service provision and its effects among the patients.
- Individual assessment of needs, motivation, current habits, preferences and barriers of the patient, and individual exercise prescription based on that information (26,40,19,51,42). Experience from diet counseling and recommendations indicate that the message should be simple, clear, specific, and realistic (6).
- Use of valid behavior change methods (8). Effectiveness of counseling is associated with e.g. emphasizing behavioral vs. cognitive approaches (8,9), use of several strategies to support behavior change, intrinsic motivation, clear goal setting, proximal instead of distal goals, improvement of self-efficacy, and use of self-monitoring, social support, and follow-up prompts (3,51,47,4,62,16,71,73,68).
- Face-to-face delivery of the counseling has been found to be more effective than mediated delivery (9,16).

### FUTURE NEEDS TO DEVELOP PA PROMOTION IN AND BY THE HEALTH CARE SYSTEM

Effective and wide use of individual approaches of PA promotion in the health care system can lead to substantial increase of PA for health especially among those who need and gain of it the most. However, considering the massive scale and continuing increase of insufficient PA and inactivity around the world (23,66,34,60,2) and the burden caused by that development (34,37,43), a greater number and more effective strategies and measures are needed in PA promotion. Prevention of diseases and ill health belongs to the responsibilities of the health care system, and supporting the development and implementation of policies and measures to increase PA at the population level should be one of the key areas. Although the largest potential to increase PA might be in the creation and implementation of supportive policies in sectors outside health (60), the health sector should participate in these processes e.g. by using the health promotion strategies (74) adopted to PA promotion: advocacy for PA; creation of essential conditions for PA; enabling all people in the community to achieve their full potential to engage in P; mediating between the different interests in the society in the pursuit of PA; building healthy public policy; creating supportive environments for PA; strengthening community action for PA; developing personal skills; and re-orienting health services in favor of PA promotion.

The most suitable roles for the health care sector in PA promotion are advocacy and sharing of knowledge and experience by collaboration and networking. The health professionals and their organizations are respected authorities that have possibilities to influence the development and implementation of policies, guidelines, recommendations and other measures supporting increase of PA and its use for health as well as decrease of physical inactivity, and they should offer actively their support. The credibility of these functions is strengthened by own example (24,10,30), by adopting at individual and institutional level habits, customs, practices and processes that correspond positively with the promoted issue, e.g. by supporting and practicing active transport. Within the medical community an effective means of advocacy and sharing of knowledge would be to publish and even invite articles to be published

in widely read medical journals on various aspects related to the use of PA for health. A fine example is the Lancet Series on Physical Activity published in July 2012 in connection with the London Olympic Games.

### CONCLUSION

PA promotion is a needed medical service. Especially PA counseling can be delivered in effective, cost-effective and feasible ways by PHC, but it is severely underused. The wide coverage of the PHC offers potential to increase PA especially in population groups that are least active and could benefit the most of it. This discrepancy between the needs and the practice has lately led to quite strong and justified demands for change (30,72,46).

There is much potential to increase and improve PA promotion in PHC by using the information available from the basic and applied behavioral and intervention research as well as by experimenting and applying new ways of organizing and doing the practical work. Two fundamental changes are necessary to get the necessary changes made in the working conditions and procedures of the PHC. First, PA and especially systematic exercise training should be considered as a means belonging to the repertoire of PHC, comparable to pharmaceuticals as is done in the Exercise is Medicine™ Global Initiative (14) and its European branch (13). Gradually this understanding would lead to deep changes in the whole health care system: PA would be included as an essential part in the basic and continuing education and training of physicians, physiotherapists, nurses etc.; there would be established rules and processes to assess the needs of PA of individual patients, to prescribe it, to deliver it, to follow-up, and to reimburse the services related to it; and there might be increased funding and opportunities to conduct clinical research on its efficacy, effectiveness, feasibility, interactions and comparability with other means, its risks etc., and to make applied behavioral research.

The second essential condition to increase and improve PA promotion in the health care system is that the leading medical and public health experts as well as the major scientific and professional organizations within the health sector will accept PA as an inherent and effective means to further their goals and to be included in their interests and activities. The real break-through of PA as medicine has to take place within the medical community and it has to be done by its members. There is great need of champions to lead the way.

### Conflict of interest

*The author has no conflicts of interest.*

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