

3. Promoting physical activity

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Introduction

The lack of physical activity, unhealthy eating habits, tobacco use and alcohol consumption are still the largest causes of death and disease in modern society. A sedentary lifestyle entails a sharply increased risk of disease and premature death (1, 2). Lifestyle-related illness entails large costs and is consequently a major burden on healthcare services. Individuals of all ages, both men and women, achieve health benefits by exercising, and greater physical activity is also important to improve well-being and quality of life (1, 3, 4).

Increasing physical activity is therefore an important task for society in general and for healthcare in particular. Physical activity is now included as an important component in the treatment and prevention of various diseases.

Physical activity in disease prevention and treatment (FYsisk aktivitet i Sjukdoms-prevention och Sjukdomsbehandling – FYSS) is a tool for those who prescribe physical activity. Here, a number of different experts in various areas have compiled the latest evidence of the connection between physical activity and health.

What is physical activity?

Definitions (5)

In this initial chapter, we have consciously chosen use the term physical activity ahead of terms such as exercise and training:

- In general, physical activity means all types of movement that increases energy expenditure. This means all types of muscle activity such as walking, household and gardening work, and physical strain in work, outdoor life, exercise and training.
- Health-enhancing physical activity means all physical activity that improves health and physical capacity without constituting a risk of injury.
- Exercise is planned physical activity with a certain objective, such as to provide well-being or to improve future health or the equivalent, and most often involves changing into appropriate clothing.
- Training involves a clear goal of increasing performance capacity in various types of physical activity, such as in athletics.

What affects our physical activity?

It is important to emphasize that the main part of our weekly expenditure of energy in the form of movement can be associated with physical activity not tied to scheduled exercise and sports. This primarily concerns everyday physical activity, active transport, physical activity at work, physical activity during leisure time in the home or as a hobby, exercise, training and sports. The major health potential lies in increasing our overall level of physical activity, both in connection with work and during free time (5).

From theory to practice

Physical activity by prescription

Interest in promoting physical activity has grown in healthcare. Both professional organisations and healthcare personnel have a positive view of prescribing physical activity to patients (6, 7). However, a major challenge remains in converting the knowledge to practical reality – going from the evidence that currently exists regarding the health benefits of physical activity to effectively and naturally integrating physical activity into daily activities (8). One way of more systematically promoting physical activity is to use a written prescription for physical activity. This approach has become increasingly more common in several countries in the past decade (7, 9, 10), and in Sweden, exercise by prescription, proactive healthcare by referral, prescriptions of physical activity or Physical Activity on Prescription, FaR[®] have been used (5). Physical Activity on Prescription (FaR[®]) is currently a commonly accepted concept and involves a prescription adjusted to the individual corresponding to conventional treatment. The prescription can comprise everything from a simple, written suggestion of an activity to a comprehensive solution with a supportive structure from a prescriber, activity organiser or leader. At the time of the prescription, the prescriber can find recommendations and instructions adapted to disease in FYSS (11, 12).

FaR[®] on various levels¹

Prescribing FaR[®] is only one of many possible means of promoting physical activity that can be used in healthcare. Other examples are referrals to other actors in healthcare and verbal advice to patients. Figure 1 places FaR[®] in a context to clarify the roles and commitments for various actors or settings.

Level	State of health	→ Prescription form	→ Activity type	→ Arena/activity organiser
1	Ill individual /high risk	Referral (not FaR [®])	Physiotherapy	Healthcare services
2	Ill individual /high risk		Specially adapted FaR [®] activities. Most often low intensity exercise	Volunteer organisations
3	Physically inactive person or person who needs to increase physical activity. Capable of normal training. Preference for group activities	FaR [®] . In writing with or without referral	Regular offering of activities	Volunteer and sports organisations
4	Physically inactive person or person who needs to increase physical activity. Capable of normal training. Preference for own activities	In writing (FaR [®]) or orally (not FaR [®]) Without referral	Own activities. Everyday exercise, e.g. walking, cycling, outdoor life, gardening	Local society, residential area, home

Figure 1. Schematic model describing various levels of promoting physical activity, including FaR[®], in healthcare and NGOs.

Level 1 is relevant to patients with already developed disease/injury, has very elevated risk of disease or is otherwise assessed to be unfit to participate in FaR[®] activities not under the direction of healthcare services. These patients are not included in FaR[®], but rather are referred elsewhere within healthcare such as physiotherapy, although a prescription for physical activity can be written out to “formalise” the advice. Oral advice on everyday physical activity such as walking can also beneficially be included in level 1.

1. Excerpt from the report *Fysisk aktivitet på recept (FaR[®]) – en vägledning för implementering*. [Physical activity on prescription (FaR[®]) – a guide for implementation.] (in Swedish, summary in English), Swedish National Institute of Public Health, R 2007:1.

Level 2 means that patients are issued FaR[®] and referred to participation in specially adapted FaR[®] programmes or activities, such as low-intensity group activities. Activity organisers are primarily volunteer and sports organisations, but may also be actors within healthcare, such as occupational healthcare or special physiotherapist units.

Levels 3 and 4 are appropriate if the patient is considered to be capable of participating in the ordinary range of activities in association life or is assessed to manage maintaining his or her own activity. The selection of level should primarily be controlled by the patient's own preferences. Oral or written advice on own activity (level 4) is appropriate if:

- The patient is assessed to be receptive to, motivated and capable of following the recommendation on his/her own or with the help of social support.
- The patient commands sufficient strategies to safely and effectively increase his/her physical activity on his/her own.
- The patient's state of health and needs (social, emotional, medical) do not require a customised programme with coaching.

Just as the patient's state of health can vary between the various levels, the selection of adapted activities varies, as well as the prescriber's and the recipient organisation's expertise in the FaR[®] work. To take care of patients on levels 1 and 2, the knowledge requirements are higher than for those who work with patients on levels 3 and 4, both for healthcare actors and for activity organisers.

For patients to be motivated to change at all and interested in FaR[®] or oral advice, the health counsellor's role is very important in the prescription process. Patients in need of change, but who have a low level of motivation should be referred to a health counsellor or similar person with knowledge of motivational discussions and the principles of behavioural change. At levels 2 and 3, the prescribing unit actively cooperates with various activity organisers, which means a joint responsibility for developing the FaR[®]-related efforts in terms of coordination, offering, quality and role distribution. This approach often includes some form of sluice or coordination function that can exist either within healthcare, the activity organiser or both, through which the patient or his/her prescription passes. Here, it is important that there be a very clear division of responsibility for the various stages in the FaR[®] model at the local level, for instance via a detailed flow chart.

Regardless of whether the advice is oral or in writing, with or without a referral, or recommends group or individual activities, the ultimate goal should be to improve the possibilities for the patient to be able to maintain regular physical activity on his or her own on the long term.

Individually adapted advice

A prescription of physical activity should be individually adapted with regard to the dosage (intensity, duration and frequency) and type of activity. The point of departure is that *healthy people* benefit from being physically active. The greatest impact on public health, in the form of reduced morbidity (incidence of disease), is achieved if the physical activity of the *least physically* active groups is increased, such as the socioeconomically disadvantaged and the elderly. *Individuals with risk factors* who have not yet developed disease are also a potential target group, such as those with a hereditary predisposition for cardiovascular disease, the obese or smokers.

Persons with various diseases comprise another important target group. However, the prescription must be individualised in consideration of the patient's actual disease, functional capacity, medicine interactions and potential contraindications for a certain activity.

Case history of physical activity

To be able to prescribe a suitable physical activity level/activity for a patient, the *case history of physical activity* can be used to assess the current level of activity. This should include information on current activity (if any), how much the patient exercises, what the patient thinks he or she has time for and the extent to which he or she was previously physically active. Appropriate questions may include:

1. What are you doing right now?	→	Activity
2. How often?	→	Frequency
3. How long?	→	Duration
4. How hard?	→	Intensity

It is important that the advice is individual, that encouragement is given, that one agrees with the patient on how everything should be carried out and when a follow-up should take place. It is also important that the level of exercise is set at an adequate level, especially for those completely unaccustomed to exercise, to avoid failure and for increased flexibility.

What should the prescription include?

The prescription should be specific with clear lines about:

- *The type of physical activity* that is suitable for the individual patient.
- Dose, in other words the *intensity* of and *duration* of each activity session, and the *frequency* (number of times per week).

Form for the prescription of physical activity

Today, there are several different variants of forms for prescribing physical activity. The original Swedish FaR[®] prescription (see figure 2) was a reworked version of the common pharmaceutical prescription. The majority of county councils currently have specially adapted forms that also include suggestions of activities and actors. Some of these are also integrated with the existing patient record systems.

RECEPT/FYSISK AKTIVITET	
Receptutfärdaren anger genom signum vilka speciella försiktighetsmått som kan behöva iaktas vid genomförandet av de fysiska aktiviteterna F = Försiktig start U = Undvik vissa aktiviteter O = Inga speciella försiktighetsmått	Patient (namn, födelseid, adress och telefon)
① Träningsform <input type="checkbox"/> Kondition <input type="checkbox"/> Styrka <input type="checkbox"/> Uthållighet <input type="checkbox"/> Underhåll Aktivitet:	
Intensitet: <input type="checkbox"/> Hög <input type="checkbox"/> Måttlig <input type="checkbox"/> Lätt Antal ggr/behandlingstid: Dosering, användning, ändamål D.S Minst minuter ggr/vecka för/vid/mot undvik	
② Träningsform <input type="checkbox"/> Kondition <input type="checkbox"/> Styrka <input type="checkbox"/> Uthållighet <input type="checkbox"/> Underhåll Aktivitet:	
Intensitet: <input type="checkbox"/> Hög <input type="checkbox"/> Måttlig <input type="checkbox"/> Lätt Antal ggr/behandlingstid: Dosering, användning, ändamål D.S Minst minuter ggr/vecka för/vid/mot undvik	
Receptutfärdarens namnförtydligande, yrke, adress, telefonnr. Sjukvårdsinrättning, klinik	
Ort: Datum: Receptutfärdarens namnteckning: Gäller mån. från detta datum.	
Receptet löses lämpligen in hos (Namn och telefon)	

Figure 2. The original Swedish prescription form for physical activity on prescription (FaR®). The form resembled the ordinary drug prescription form in terms of content, layout and colour. Two different physical activities can be prescribed on the form with information on the type of physical activity, dose (i.e. intensity, duration, frequency) and reason for prescription. The name of the patient, the name of the prescriber and the date of the prescription should also be noted.

How can FYSS be used in practice?

The following is an example that describes how FYSS can be used by a doctor in the meeting with a patient.

As the prescribing doctor, you have a patient in front of you with recently arisen hypertension. The patient's blood pressure is at 150/95 and in an assessment of the patient's total risk profile (age, gender, smoking and other risk factors) he or she is assessed to not be sufficiently physically active. You decide on a non-pharmacological initial treatment once the diagnosis has been confirmed with repeated blood pressure measurements. You look in FYSS under "Hypertension". You may not be really certain which type of activity is most appropriate to achieve a reduction in blood pressure, what effects can be expected and how long it takes to achieve a maximum effect. In FYSS, you read that:

"The latest international recommendations for the treatment of hypertension emphasize an individual prescription of treatment based on the patient's unique 'risk profile' (13). Physical activity, and the impact on other lifestyle factors, is considered to be the primary treatment in mild hypertension (blood pressure, BP, < 160/90) (13) and is considered to be a supplemental treatment for hypertension otherwise (13). However, physical activity is considered to be contraindicated upon an uncontrolled BP over 180/105 until an adequate reduction in blood pressure has been achieved with pharmaceutical treatment (14).

In hypertension, mainly activities of moderate intensity that improve condition, at least 30 minutes a day, five times a week, are recommended (13–15). Suitable activities could be jogging, Nordic walking, swimming and/or cycling. Physical activity is a perishable good and needs to be continuous to maintain its effect. Meta-analyses of studies have shown that dynamic activity at this intensity can reduce systolic blood pressure by approximately 7 mm Hg and diastolic pressure by 5 mm Hg (15), although with low weights and many repetitions (circuit training), which can reduce systolic blood pressure by approximately 4 mm Hg and diastolic pressure by 3 mm Hg. However, strenuous strength training, such as weightlifting and power lifting, should be avoided. The maximum effect on the blood pressure is achieved after up to six months of physical activity. Consideration of any current diseases must, of course, be taken when the prescription is written."

With the help of FYSS, a patient with newly arisen hypertension with a low overall risk profile could be given clear recommendations about, when and what form of physical activity is suitable as treatment for him or her.

Success factors

A prescription for physical activity does not automatically lead to changed behaviour and a higher physical activity level in the patient on the long term. Several other factors affect the result. A major challenge is that our modern social structure often even counteracts a physically active lifestyle and encourages being sedentary. Methods for behavioural change are therefore considered to be important for successful change efforts, but to-date, few programmes have systematically used evidence-based methods for behavioural change (16), even though this has been encouraged to increase the effectiveness of

health-promoting programmes. For example, this could involve health counselling focusing on raising the patient's motivation, objectives, handling perceived obstacles, strengthening self-confidence and social support, encouraging daily activities and measuring one's own activity, such as through step-counters or a journal (17). The programme set-up should be based on a tried model for behavioural change and support for its maintenance, such as through follow-up phone conversations.

Various professional trade organisations and national institutions have emphasized the promotion of physical activity as an important area of development in recommendations and management documents. The American College of Preventive Medicine argues for primary care routinely involving advice regarding physical activity in patient meetings (6).

A number of factors considered to be success factors in successful interventions have been identified, including:

- the staff having been given qualitative continued education
- goal-oriented measurement of the patient's activity level
- the use of behavioural-change models
- advice tailored to vulnerable sub-groups
- a focus on changing one lifestyle element at a time
- involving teams of healthcare staff who help each other to carry out different parts of the intervention
- good support systems and clear procedures at each respective unit
- including individually adapted advice in writing based on the "stages of change"
- involving some form of follow-up of patients.

In addition, the *5A structure* is considered to be very promising as an effective model that can relatively easily be introduced in primary care (6).

Counselling with the 5As

One commonly occurring obstacle to all lifestyle advice in healthcare is a lack of time. Today, there are a large number of conversational techniques that can be used in a short consultation of a few minutes or as a series of longer conversations on multiple occasions. The 5As (Assess, Advise, Agree, Assist, Arrange) aim at quickly and easily structuring a lifestyle discussion (18).

1. **Assess** – Ask about the physical activity level and assess the patient's proclivity to change.
2. **Advise** – Provide information and individually adapted advice based on the patient's needs and motivation to change. Consideration should be taken of age, gender, ethnicity, BMI, disease history, activity experience, prior attempt to change lifestyle etcetera. The advice may be either oral or written.
3. **Agree** – Communicate in a spirit of partnership by using patient-centred techniques and finding activities that the patient is interested in and has the possibility of pursuing – set up realistic goals.

4. **Assist** – Use various techniques to increase the patient’s motivation and self-confidence and to address the surrounding environment.
5. **Arrange** – Plan the follow-up, provide ongoing assistance/support and potential return visits to adjust the treatment plan as needed, including referral to more intensive or specialised treatment and sluce the patient on to an activity organiser if this is of interest.

These five steps need not necessarily be followed at the same visit, or even by the same person. The measurement and assessment of the patient’s activity level can be carried out by the patient or by a suitable staff group with various test instruments (19, 20). For example, the physician can assess the patient’s level of activity and desire to change and give oral advice with a referral to other personnel who have more knowledge in motivational work and who complete the remaining stages of the 5As. The concluding stages, assist and arrange, can take place both within healthcare and at the healthcare services’ cooperative partners within the FaR[®] work. One such comprehensive solution enables the healthcare staff, the healthcare system and its cooperation partners to be able to carry out supplementary tasks (20).

Competency, responsibility, follow-up and confidentiality in Sweden²

Prescribed physical activity is a complement to or replacement for pharmaceuticals. The person prescribing physical activity should have an adequate level of competency and sufficient knowledge of the current patient’s health and illness status, since there can be some activities that are directly unsuitable for certain disease conditions (also refer to the respective chapters in FYSS). The prescriber should sign off on any special cautionary measures that may need to be observed or not.

Which professional groups may prescribe physical activity?

The prescription of physical activity is not a rule-controlled task (in Sweden) and can consequently in principle be carried out by any of the licensed personnel, on condition that the person in question commands the knowledge necessary to carry out the task correctly. It is the responsibility of every operational manager to lead the work in the scope of the human resources and other resources the caregiver makes available and to distribute duties in line with their type and level of difficulty and in consideration of the need for expertise and professional experience. The operational manager is responsible for ensuring that the personnel that is to carry out various tasks has the expertise required for this.

2. Excerpt from the report *Fysisk aktivitet på recept (FaR[®]) – en vägledning för implementering*. [Physical activity on prescription (FaR[®]) – a guide for implementation.] (in Swedish, summary in English), Swedish National Institute of Public Health, R 2007:1.

Liability

In accordance with the Swedish National Board of Health and Welfare's regulations (SOSFS 2005:12) regarding management systems for quality and patient safety in health and medical care (in Sweden), the *caregiver* shall ensure that the management system includes procedures that indicate the personnel's responsibilities and authority. *The operational manager* is responsible for appointing and registering which qualified healthcare personnel will perform the task of independently prescribing physical activity. A member of the *health and medical care personnel* that prescribes physical activity bears responsibility for the measure in accordance with Chapter 2 Section 5 of the Act (1998:531) on professional activity in health and medical services. A prescription of physical activity shall be documented in the patient's records, in accordance with Section 3 of the Patient Records Act (1985:562). Oral advice regarding physical activity shall also be noted in the patient's records.

Patient insurance applies to activity within county council care. Therefore, adequate record notes regarding physical activity as a treatment are just as important as notes about examinations or pharmaceutical treatments. However, if a patient who was prescribed physical activity injures him or herself in activities outside the county council's facilities, the insurance only applies if the injuries can be directly related to the prescription in question. If, for example, the patient stumbles on a tree root on the exercise course and sprains an ankle, the insurance does not apply. However, if the patient should be struck by a heart attack while conducting the activity, this should be reported to the patient insurance agency for further investigation. For more information, see www.psr.se. For example, if the patient injures him or herself at a gym after being prescribed physical activity, the owner of the gym can be liable under civil law if it is a matter of deficient safety procedures at the gym. Otherwise, the owner of the gym cannot be held liable for injuries the patient may potentially suffer.

Follow-up

Within healthcare, the quality of the operation shall systematically and continuously be developed and ensured pursuant to Section 31 of the Health and Medical Services Act (1982:763). Section 2 a, paragraph one of the Health and Medical Services Act contains fundamental stipulations regarding patient safety and the quality of care. The follow-up of a prescription of physical activity does not differ from the follow-up of other treatments within healthcare. Pursuant to the Swedish National Board of Health and Welfare's regulations (SOSFS 2005:12) regarding management systems for quality and patient safety in health and medical care, the management system shall ensure that procedures are in place for how new methods of treatment shall be developed, tried and introduced so as to ensure patient safety. Furthermore, procedures shall be in place for how established methods are to be applied, continuously followed up and, where necessary, revised, as well as procedures for the measures that shall be undertaken when the application of the the methods needs to be changed.

Confidentiality

As per Chapter 7 Section 1 of the Secrecy Act (1980:100), confidentiality applies in healthcare for information regarding the individual's state of health or other personal circumstances, unless it is clear that the information can be disclosed without the individual or any party related to the individual suffering harm. As per Chapter 14 Section 4 paragraph one of the aforementioned act, confidentiality for the protection of the individual does not apply to the individual him or herself and can otherwise be granted exemption by him or her in part or in whole.

For private healthcare, a corresponding stipulation regarding confidentiality is set forth in Chapter 2 Section 8 of the Act (1998:531) regarding professional activity in health and medical services.

If, for example, prescribed physical activity is sent to an organisation outside healthcare for information, the patient's consent must consequently be obtained first. The Secrecy Act does not apply outside public operations. When, for instance, a private company receives prescribed physical activity, the company should prepare a contract regarding confidentiality.

Methods to promote physical activity

To evaluate effects and cost impacts of various methods for healthcare to promote physical activity, the Swedish Council on Technology Assessment in Health Care (SBU) conducted a systematic review of the scientific literature (4). The main objective of the report was to review the effectiveness of the measures with regard to the impact on the level of physical activity. All studies reviewed in the report had a follow-up time of at least six months, a relevant control group and the outcome measurement was an increase in the level of physical activity.

Advice, theory-based behavioural interventions, supervised training in groups and individually adapted training programmes as well as children and young people were the methods and important areas that were identified (4).

With regard to advice, the conclusions were that:

- Advice and counselling of patients in everyday clinical practice increases physical activity by 12–50 per cent for at least six months after the counselling session.
- More frequent, intensive counselling by means of repeated sessions for several months additionally boosts physical activity.
- Counselling supplemented by prescribed physical activity, diaries, pedometers, informational brochures, etc., increases activity by another 15–50%.

With regard to supervised training in groups and individually adapted training programmes, the conclusions were that:

- A six-month group exercise programme for patients with coronary artery disease promotes physical activity.
- A six-month supervised exercise programme for patients with peripheral arterial disease increases physical activity in terms of walking distance and/or time.

With regard to theory-based behavioural interventions, the conclusions were that:

- Theory-based behavioural intervention increases physical activity 10–15% more than usual care and as much as structured exercise programmes.
- More extensive behavioural interventions further boost physical activity, though with a diminishing marginal effect.
- Interventions that include a person's entire lifestyle, focusing on diet and stress management as well as physical activity, reinforce the increase in activity.

With regard to methods directed at children and young people, it was determined that:

- Devoting greater resources to school curricula in areas such as health education, textbooks, study materials and teacher training increases activity by 5–25% during physical education classes – even more so for boys than for girls.
- School-based interventions that include multiple components – such as teacher training, curriculum modifications, extra activity sessions during class periods and/or recess, support for behaviour changes, improved health education and the involvement of parents – favourably impact the physical activity of children and adolescents during the school day and sometimes during after-school hours and weekends as well.
- School-based interventions for groups at greater risk of cardiovascular disease increase physical activity by approximately 10%.

The supply of health-economy studies that illustrated the project's questions was so limited that no conclusions could be made regarding the cost-effectiveness of the methods studied.

*Description of an implementation model for FaR[®]*³

A fundamental starting point for all intervention work is that it is important to take the local conditions into account. This means that the work on FaR[®], for example, can look differently in different parts of the country or within the same county or municipality. A summary is presented below of the model for implementation of FaR[®] as described in the report *Fysisk aktivitet på Recept (FaR[®]) – en vägledning för implementering [Physical Activity on Prescription (FaR[®]) – a guide for implementation]* (11).

Work on promoting physical activity in healthcare should be based on a broad cooperation with other actors and be rooted in the operation, preferably in a policy decision. The so-called PRECEDE-PROCEED model developed by Green and Kreuter (21) is an accepted and useful model for developing, implementing and evaluating health-promoting programmes and efforts in accordance with such an approach, and has been further developed for the work on promoting physical activity in primary care and how this can be systematised (22).

3. Excerpt from the report *Fysisk aktivitet på recept (FaR[®]) – en vägledning för implementering. [Physical activity on prescription (FaR[®]) – a guide for implementation.]* (in Swedish, summary in English), Swedish National Institute of Public Health, R 2007:1.

Here, a modified version of this model is presented, adjusted to Swedish conditions, which treats how all healthcare services can work to promote physical activity. The model is divided into nine phases that include a mapping of needs, diagnoses, policy, coordination, implementation and evaluation of a FaR[®] programme (see figure 3).

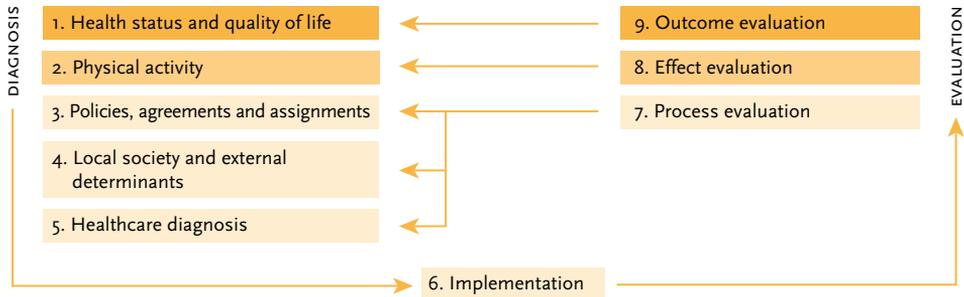


Figure 3. Framework for the diagnosis, implementation and evaluation of an FaR[®] programme.

Phase 1 concerns mapping and understanding the health needs in the local society, the health status of the residents and the patients' state of ill-health, such as the occurrence of chronic disease, quality of life, age structure, socioeconomic differences, etc. Investigating health status and quality of life are important since FaR[®] programmes should ultimately lead to improved health on an individual level and improve markers for health on a local society level.

Phase 2 brings up the need to map the patients' physical activity patterns, establish goals for increasing physical activity and establish what types of physical activity are needed. This stage in the planning can also bring up potential interaction with other lifestyle habits (such as smoking, diet, alcohol).

Phase 3 maps whether or not there is support for the FaR[®] efforts in current management documents/agreements/assignments to work with promoting physical activity in both one's own organisation as well as in cooperation with other actors.

Phase 4 concerns healthcare as an actor in the local society and the impact of the local society's other determinants for physical activity and health, such as climate, availability of activities, access to bicycle paths, exercise trails, parks, the local sports offering and other association life. Even if it is not healthcare's primary task to map physical and social conditions, obstacles and qualities in the local society, there are a number of important aspects to take into account when starting an FaR[®] programme.

Phase 5 maps factors that affect the patient's meeting with healthcare and is divided into three overall areas: healthcare, personnel issues and patient issues that somehow affect the health-promoting work with FaR[®] (see table 1).

Table 1. The impacts of healthcare, personnel and patients on the prescription of physical activity.

Level	Definition	Example
Patient	Factors that the patient brings with into the meeting with the caregiver.	Knowledge, reason for the visit, expectations, motivation, obstacles, conditions, experiences, history of activity.
Personnel	Factors that the licensed personnel brings with to the meeting with the patient.	Knowledge, interest, motivation, skills, expectations of themselves to be able to influence patients, the personnel's own level of activity, role models (positive: bicycle helmet in the treatment room, or negative: smell of cigarette smoke), empathy.
Healthcare services	External factors that affect the FaR [®] work.	Prescription form, information materials, personnel training and sufficient expertise at an organisation level, bicycle rack outside the unit, attractive stairwells, other personnel, exercise possibilities during or in connection with working hours for the personnel.

Phase 6 emphasizes the importance of working systematically. A systematic approach is more effective in promoting physical activity and in creating better conditions for long-term efforts at the programme level (16). The experiences from the Swedish FaR[®] efforts is that the implementation process in particular is the most difficult phase and the one that takes the longest (12). Also refer to the success factors above.

It is important that every FaR[®] programme establishes its own approaches and models as well as selection criteria for the participants. This includes a good internal structure for the FaR[®] work (who, what, how?) and good coordination with the activity organisers (with whom, which activities, in what way?). Supportive factor include the local society's range of facilities and other external conditions for exercise and physical activity, as well as the expertise of relevant professional groups to work with FaR[®]. It is in healthcare that the prescription process begins and it is the prescriber/prescribing unit that decides what the first steps look like.

It is also important that both healthcare and other involved actors respect each other's knowledge, underlying conditions and possibilities in the FaR[®] work.

Phase 7–9 – evaluation

Evaluation efforts have been divided into three phases: process evaluation, effect evaluation and outcome evaluation.

Phase 7 – the process evaluation focuses on achieved intermediary measurements in phases 3, 4 and 5, such as knowledge, attitudes, motivation and inclination to change of the patient and the personnel, changes in factors concerning the prescribing unit and activity organisers as well as policy issues. The process evaluation can also investigate the implementation phase. The objective of the process evaluation is to better understand the processes and factors that facilitate or obstruct goal fulfilment in phases 1 and 2.

Phase 8 – the effect evaluation investigates the FaR[®] programme’s affect on physical activity, quality of life or accepted physiological evaluation measurements such as oxygen uptake capacity or work capacity, and should indicate whether the goals set in phase 2 were achieved or not. The follow-up of the prescription and feedback to the prescriber is a very important dimension to improve maintenance and to drive the entire work with prescribed physical activity further. Follow-up should be carried out at the end of the activity programme/activity prescription to follow-up the outcome of the behavioural change to a more physically active lifestyle.

Phase 9 finally investigates the FaR[®] programme’s impact on various health outcomes and the goal-fulfilment of goals established in phase 1. This phase does not usually belong to the individual unit’s main tasks, but can be carried out in cooperation with the public health unit in the county council/region or the equivalent.

FaR[®] in the Nordic region

There is also a growing interest in promoting physical activity within healthcare outside Sweden. In the Nordic region, there are several variants of prescribing physical activity: *Physical Activity on Prescription* (FaR[®]) in Sweden, *Grønn resept* (*Green prescription*) in Norway, *Motion som lægemiddel* (*Exercise as a remedy*) in Denmark, and *Prescription for physical activity* in Finland. In contrast to Sweden (the majority of Sweden’s county councils), where all licensed healthcare personnel may prescribe physical activity, the work in the other Nordic countries is more based on only physicians being able to do so. In Norway, work on physical activity is conducted in parallel with dietary efforts. There is also a national compensation system and limits to the diagnosis groups in which the Green Prescription is an option. The Norwegian government decided that the entire country would work with Green Prescriptions. In Denmark, efforts have taken place on a national level to develop a method for the entire country. In 2008, the Danish National Board of Health will draft guidelines for using exercise as a remedy. Since 2003, there has been an equivalent to FYSS in Denmark, *Fysisk aktivitet – håndbog om forebyggelse og behandling* [*Physical activity – handbook on prevention and treatment*]. In Finland, two models exist for the prescribing of physical activity and in both only physicians may prescribe physical activity. The national method is the Prescription for Physical Activity, which is a cooperation project between the Finnish Rheumatism Association, the “I form för livet” [In shape for life] programme, the Finnish Medical Association, the Finnish Heart Association and the UKK Institute. There is also the “Fysiotek” conducted by Folkhälsan (the largest Swedish-speaking social and healthcare NGO that is directed at the Swedish-Finnish population). An important reason that the work in developing prescribed physical activity differs between the Nordic countries lies in differences in social structures and that the county councils in Sweden have greater autonomy (23). Links to and a more detailed description of the on-going efforts in the Nordic region are available on the FYSS website, www.fyss.se.

The following are a number of useful Internet addresses for each country:

Sweden

Swedish National Institute of Public Health www.fhi.se
FYSS www.fyss.se

Norway

Norwegian Directorate of Health www.shdir.no

Denmark

National Board of Health www.sst.dk

Finland

Folkhälsan Finland www.folkhalsan.fi
(Swedish-speaking part of Finland)
Liikkumisresepti www.liikkumisresepti.net
(in Finnish with summaries in
Swedish and English)

References

1. U.S. Department of Health and Human Services, Physical Activity and Health. A report of the Surgeon General. Atlanta (GA): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion; 1996.
2. World Health Organization. The World Health Report 2002. Reducing risks, promoting healthy life. Geneva: World Health Organization; 2002.
3. Department of Health. At least five a week. Evidence on the impact of physical activity and its relation to health. Report from the Chief Medical Officer. London: Department of Health; 2004.
4. SBU (Swedish Council on Technology Assessment in Health Care). Metoder för att främja fysisk aktivitet. En systematisk litteraturoversikt. [Methods for promoting physical activity. A systematic literature review.] SBU Report no. 181. Stockholm: SBU; 2007.
5. Schäfer Elinder L, Faskunger J. Fysisk aktivitet och folkhälsa. [Physical activity and public health.] R 2006:13. Stockholm: Swedish National Institute of Public Health; 2006.
6. Jacobson DM, Strohecker L, Compton MT, Katz DL. Physical activity counseling in the adult primary care setting. Position statement of the American College of Preventive Medicine. *Am J Prev Med* 2005;29:158-62.
7. Harrison RA, McNair F, Dugdill L. Access to exercise referral schemes. A population based analysis. *J Public Health (Oxf)* 2005;27:326-30.
8. Huang N. Motivating patients to move. *Aust Fam Physician* 2005;34:413-7.
9. Elley CR, Kerse N, Arroll B, Robinson E. Effectiveness of counseling patients on physical activity in general practice. Cluster randomised controlled trial. *BMJ* 2003; 326:793.
10. Sorensen JB, Skovgaard T, Puggaard L. Exercise on prescription in general practice. A systematic review. *Scand J Prim Health Care* 2006;24:69-74.
11. Faskunger J, Leijon M, Ståhle A, Lamming P. Fysisk aktivitet på Recept (FaR®). En vägledning för implementering. [Physical activity on prescription (FaR®). An implementation guide.] R 2007:1. Stockholm: Swedish National Institute of Public Health; 2007.
12. Kallings LV, Leijon M. Erfarenheter av Fysisk aktivitet på Recept – FaR®. [Experiences from Physical activity on prescription – FaR®.] R 2003:53. Stockholm: Swedish National Institute of Public Health; 2003.
13. Mancia G, De Backer G, Dominiczak A, Cifkova R, Fagard R, Germano G, et al. Guidelines for the management of arterial hypertension. The task force for the management of arterial hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). *J Hypertens* 2007;25:1105-87.
14. American College of Sports Medicine Position Stand. Physical activity, physical fitness and hypertension. *Med Sci Sports Exerc* 1993;25:i-x.

15. Fagard R, Cornelissen VA. Effect of exercise on blood pressure control in hypertensive patients. *Eur J Cardiovasc Prev Rehabil* 2007;14:12-7.
16. Riddoch C, Puig-Ribera A, Cooper A. Effectiveness of physical activity promotion schemes in primary care. A review. London: Health Education Authority; 1998.
17. Eden KB, Orleans CT, Mulrow CD, Pender NJ, Teutsch SM. Does counseling by clinicians improve physical activity? A summary of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med* 2002;137:208-15.
18. Whitlock EP, Orleans CT, Pender N, Allan J. Evaluating primary care behavioral counseling interventions. An evidence-based approach. *Am J Prev Med* 2002;22:267-84.
19. Flocke SA, Gordon LE, Pomiecko GL. Evaluation of a community health promotion resource for primary care practices. *Am J Prev Med* 2006;30:243-51.
20. Stange KC, Woolf SH, Gjeltema K. One minute for prevention. The power of leveraging to fulfill the promise of health behavior counseling. *Am J Prev Med* 2002;22:320-3.
21. Green L, Kreuter M. Health program planning. An educational and ecological approach. Boston: McGraw Hill; 1991.
22. Taylor A. The role of primary care in promoting physical activity. In: McKenna J, Riddoch C, eds. *Perspectives on health and exercise*. London: Palgrave Macmillan; 2003.
23. Kallings L, Ståhle A. Motion på recept i de nordiska länderna. [Exercise by prescription in the Nordic countries.] *Svensk Idrottsmedicin* 2005;3:32-5.