

# Psychical activity for people with type 2-diabetes propelled by social prescribing in general practice

## 1. INTRODUCTION

People who are physically inactive are at increased risk for lifestyle diseases, including cardiovascular diseases and diabetes, and mental illnesses such as depression (1-3).

According to the report “Danes' Health - The National Health Profile”, physical inactivity is a major public health problem as up to 29% of the adult Danish population is inactive (4). This emphasizes the importance of developing interventions that can reduce physical inactivity in Denmark.

According to the latest research in the field of causes of inactivity, it is recommended to build bridges between inactive Danes and the organizations that assist establishing and maintaining a healthy lifestyle and exercise habits (5). In relation to this, general practice plays a central role due to general practitioners consulting 85% of the Danish population annually (6).

According to the “The Danish Health and Medicines Authority's guidelines for General Practice”, it is stated that GPs should recommend being physically active to their patients - **especially when it comes to patients who are at risk of developing or already have lifestyle diseases** (7). Further, this highlights the GPs potential key role in reducing the proportion of inactive Danes.

However, studies show that GPs experience challenges in terms of concretizing these recommendations, where one of the challenges is **a lack of overview of initiatives in the local communities aimed at increasing physical activity** (8-9).

Currently, the sports associations in Denmark offer local, sustainable, and versatile offers of sport activities across the country. According to the law, the municipalities in Denmark are responsible for establishing preventive and health-promoting offers to their citizens. This also includes physical activity initiatives (10).

Social prescribing is a tool the GPs and other health professionals can use to refer patients/citizens to social and non-clinical activities in the local community. The purpose is to improve the health and well-being of the citizens/patients. The activities are typically provided by volunteers (for example in the sports associations through their existing offers or start-up activities) or by free and structured initiative provided by the municipality (11,12). Around 20% of patients consult their GP for primarily social issues. A recent study reports an average reduction in demand for GP services by 28% following referral to a social prescribing service.

We believe it is time for general practice to cooperate with research institutions, sports associations and municipalities and make social prescribing as a part of their routine.

Our ambition is that patients with type-2-diabetes can be prescribed to physical activities in the local environment by their general practitioner. To overcome the barriers the GPs are facing, we will provide an overview of physical activity initiatives in the local environment. Further, we will develop a hiking course for people with type-2-diabetes that the GP also can refer to.

We have established contact with “Skødstrup lægeklinik” in which we will test the proposed capacity building programme. The clinic is owned by 8 GPs, who are specialists in general medicine. The clinic is in Skødstrup, Aarhus.

## 2. NEEDS

### Type-2-diabetes is a increasing problem i Denmark

- The number of Danes with diabetes has more than doubled from 2000-2016.
- Currently 260,750 Danes are diagnosed with diabetes (of which 235,175 are diagnosed with type-2-diabetes).
- Diabetes costs the Danish society about DKK 86 million per day.
- Type-2-diabetes is a significant cause of premature mortality and morbidity related to cardiovascular disease (CVD), blindness, kidney and nerve disease, and amputation.
- Although regular physical activity may prevent or delay diabetes and its complications.
- The major risk factors for developing lifestyle diseases can be prevented by improving the individual's diet and levels of psychical activity.

The above listed issues related to diabetes highlights the importance of developing initiatives that can prevent worsening of the condition and at the same time improve life quality for people with type-2-diabetes.

### Physical activity has a positive impact in type-2-diabetes patients

Many studies have shown that physical activity improves glycemic control and reduces the risk of cardiovascular disease (CVD) and mortality in patients with diabetes. Physical activity is recommended for people with diabetes because it brings a range of health benefits such as:

- Lowers the blood pressure and cholesterol (important to a well-regulated diabetes)
- Prevent complications
- Increases physical and mental health
- Increases the effect of insulin, so the body can absorb glucose from the blood
- Contributes to weight loss along with dietary changes
- Positive effect on sleep and digestion
- Preventive on depression, anxiety, and stress
- Build and remain muscles
- Better cardiac function
- Strengthens Bones
- Improved regulation of appetite.

The benefits of type-2-diabetes patients being physically active are stated in many studies and this supports the rationale that physical activity should be a part of the treatment of diabetes patients.

### Target group for intervention (social prescribing)

The target group of the intervention is people with type-2-diabetes, which the GP finds eligible to participate in physical activity initiatives in the local environment.

### Target group for the capacity building programme (CBP)

The target group for the capacity building programme are GPs. The CBP is aimed at overcoming the challenges the GPs face within social prescribing, which is a lack of overview of initiatives in the local communities focused at increasing physical activity. There is a need for a clear and easy-to-use tool in general practice that can support doctors in their

physical activity counseling so that the inactive citizens can get an overview over concrete opportunities for physical activity with like-minded people in their communities.

### 3. EXPLANATION OF THE ACTIVITY

The aim of the activity is twofold:

- a) To increase social prescribing among GP's in the context of physical activity and patients with type-2-diabetes
- b) To increase physical activity among people with type-2-diabetes

We will do this by providing an overview (a list) over physical activity offers in the local environment for the GP to use in the clinic. Further, we will develop a hiking course for the type-2-diabetes to be referred to by their GP.

List of activities the GP can refer type-2-diabetes patients to

Organization	Activity	Target group	Location
Folkesundhed Aarhus	<p>Folkesundhed Aarhus offers a free diabetes course, which consists of physical activity classes and nutrition courses.</p> <p><u>Nutrition courses</u> The course consists of 8 meetings and lasts 2-3 hours each time with meetings once a week. The teaching includes i.a. short presentations, dialogue, exercises, exchange of experience and practical cooking.</p> <p><u>Physical exercise courses</u> Along with the course, participants can go on a course with physical training. The training is guided by a physiotherapist.</p>	People with type-2-diabetes	Aarhus
Folkesundhed Aarhus	<p>‘Together about food and movement’ is an initiative focused on how participants can take the first steps towards healthier habits.</p> <p>Folkesundhed Aarhus offer running classes, walks, body awareness training, heart rate and strength, team games etc. It is always easier to change habits with others.</p> <p>There is room for everyone - for people who want to get in better shape or just want to be part of a community.</p>	People between 18- 60, who are unemployed.	Aarhus
Den Selvejende Institution Hasle Bakker	<p>Hiking trips all year around. The tours are guided by experienced hiking guides, who are well acquainted with the area and know exciting and beautiful places to hike in.</p> <p>Everyone is welcome and it's free to join. The trips are from 6 to 10 km.</p>	People living in Aarhus	Aarhus

Den Selvejende Institution Hasle Bakker	Running in groups in the park once per week. (5 km jogging around the hills, lakes and through the forest)	People living in Arhus	Aarhus
Den Selvejende Institution Hasle Bakker	Mountain biking in groups, which consists of a 5 km long mountain bike trail around in nature from Bakkekammen in the east to Holmstrupgårdvej in the west.	People living in Arhus	Aarhus
EQuIP	5 km hiking trip in a green environment guided by experienced hiking guides.	People with type-2-diabetes	Aarhus

### Hiking trip in Aarhus C facilitated by EQuIP

The participants will be recruited through our network, selected on following

- Has a diagnosis of type-2-diabetes
- Is motivated to participate
- Can walk 5 km

Our ambition is to recruit a minimum of 10 participants for a hiking course with a length of 3 months. The hiking will take place at “Lystrup Sø” once per week with a guided hiking coach.

## **4. RESULTS**

Several European countries, including the United Kingdom and the Netherlands, have succeeded Social prescribing. The Parkrun initiative in the UK is an example of social prescribing, where GPs encourage patients to be physically active by recommending participation in walking and / or running events (13). We are inspired by this and want to develop similar initiatives.

### We expect the following results:

- Increased referrals from the GPs to activities in the local community
- Increased collaboration between GP and the local community
- Increased insight into activities in the local environment for the GP
- Patients showing up to EQuIPs hiking course
- More physical activity among the intervention target group
- Improved quality of life among the intervention target group
- More well-regulated chronic disease among the intervention target group
- Less morbidity among the intervention target group

## **5. KEY SUCCESS FACTORS**

First, we aim to increase the GP’s motivation to refer to activities in the local environment by providing a list of activities they can refer to. Also, we expect the GP to refer to EQUIP hiking courses.

Second, we expect that participating in physical activity arrangements in the local environment in groups will increase the intervention target group's intrinsic motivation for being physically active. Studies have found that main factors influencing participation in sports are social support in terms of being a part of a group. Other studies focused on positive

emotions that follow being physically active with others as experience of support from fellow participants (14):

Indicators to measure on:

- Numbers of referrals from the GP to patients in the local community
- Increased collaboration between GP and the local community
- Increased insight among GP's into activities in the local environment to refer to
- Number of patients showing up to Equips activity
- Increased social support among the intervention target group

## **6. KEY CHALLENGES AND OPPORTUNITIES**

A major opportunity relies on the fact that the GP's find various benefits by social prescribing. One recent study showed that the GPs perception of the advantages of social prescribing are: 1) the social aspect, 2) it is a non-medical approach, 3) it embraces less resourceful and weak inactive patients by involving a coordinator, 4) it can strengthen the GP's possibilities to refer resourceful inactive patients to local sports activities, 5) give prolonged support by involving a coordinator and 6) the referral format (15).

Some of the former mentioned challenges are that GPs experience a lack of overview of the opportunities for physical activity in local communities targeted at inactive citizens. We will overcome this barrier by developing an overview for the GPS and activities that the GP can refer eligible patients to.

Another possible challenge for our intervention to work is that the GPs are very difficult to influence, and they are not always open to changes in their behavior.

## **7. ADDITIONAL MATERIALS USED (leaflets, assessment materials...)**

We will develop posters and leaflets to disseminate information about our hiking trip and arrange meetings:

- a) Leaflets for the GP to hand out to the eligible patients
- b) Posters to be hung in the clinic
- c) Meetings at the clinic

## **Reference list**

1. Li J, Siegrist J. Physical activity and risk of cardiovascular disease--a meta-analysis of prospective cohort studies. *Int J Environ Res Public Health*. 2012;9(2):391-407.
2. Aune D, Norat T, Leitzmann M, Tonstad S, Vatten LJ. Physical activity and the risk of type 2 diabetes: a systematic review and dose-response meta-analysis. *Eur J Epidemiol*. 2015;30(7):529-42.
3. Josefsson T, Lindwall M, Archer T. Physical exercise intervention in depressive disorders: meta-analysis and systematic review. *Scand J Med Sci Sports*. 2014;24(2):259-72.

4. Heidi Amalie Rosendahl Jensen, Michael Davidsen, Ola Ekholm, Anne Illemann Christensen. Danskernes Sundhed – Den Nationale Sundhedsprofil 2017. København S: Sundhedsstyrelsen; 2018.
5. Ryom K, Simonsen CB, Christiansen SR, Nielsen G, Troelsen J, Maindal HT. Inaktivitet i Danmark, delrapport 2. Aarhus Universitet: Institut for Folkesundhed 2020.
6. Sundheds- og Ældreministeriet. Befolkningens kontakter til almen praksis : analyse Kbh: Sundheds- og Ældreministeriet 2016.
7. Sundhedsstyrelsen. Nationale Kliniske Retningslinjer - udvalgte anbefalinger til brug i almen praksis København S2019.
8. Brandborg CE. Social prescribing med fysisk aktivitet Aarhus: Aarhus Universitet, Institut for Folkesundhed; 2020.
9. Carstairs SA, Rogowsky RH, Cunningham KB, Sullivan F, Ozakinci G. Connecting primary care patients to community-based physical activity: a qualitative study of health professional and patient views. *BJGP Open*. 2020;4(3).
10. Sundheds- og Ældreministeriet. Sundhedsloven Sundheds- og Ældreministeriet2019 [updated 31/08/2019. Available from: <https://www.retsinformation.dk/eli/lt/2019/903>.
11. Public Health England. Social prescribing: applying All Our Health: Public Health England; 2019 [updated 17 June 2019; cited 2020 25 September ]. Available from: <https://www.gov.uk/government/publications/social-prescribing-applying-all-our-health/socialprescribing-applying-all-our-health>.
12. The Kings Fund. What is social prescribing? : The Kings Fund 2017 [updated 02 February 2017; cited 2020 25 September ]. Available from: <https://www.kingsfund.org.uk/publications/social-prescribing>.
13. Fleming J, Bryce C, Parsons J, Wellington C, Dale J. Engagement with and delivery of the ‘parkrun practice initiative’ in general practice: a mixed methods study. *British journal of general practice*. 2020;70(697):e573-e80.
14. Stødle IV, Debesay J, Pajalic Z, Lid IM, Bergland A. The experience of motivation and adherence to group-based exercise of Norwegians aged 80 and more: a qualitative study. *Arch Public Health*. 2019;77:26. Published 2019 Jun 7. doi:10.1186/s13690-019-0354-0
15. Cecilie Elmar Brandborh. Kandidatspeciale. Social Prescribing using Physical Activity - A qualitative study of Danish general practitioner's opinions and views of the concept social prescribing using physical activity