

## FACTSHEET

### Exergaming for people with dementia: come and join us!

## Recommendations to promote successful implementation

The importance of movement activities is increasingly recognised, also for people with dementia!

Exergaming (exercise and gaming) is an innovative way for people with dementia to enjoy safe exercise indoors, using activity games in a virtual environment. Via this factsheet we want to stimulate successful implementation and application of exergaming for people with dementia in day-care centres. For example, in day treatment, day care and meeting centres. We will address the preparation, purchase & installation, implementation, and motivation of participants, informal carers and care staff, as well as specific considerations when interacting with people with dementia.

## Preparation

It is important to thoroughly prepare the introduction and use of exergaming equipment in a day-care centre. The following considerations may be useful in this respect and they can also help assess the suitability of exergaming equipment that has already been purchased.

### 1 What goal do you want to achieve with exergaming? What is the intended result?

It may be helpful to determine, together with the staff, which goal(s) you want to achieve. Decisions can then be made with this goal/these goals in mind. Make sure the goals are concrete and that you can adjust them along the way if necessary. An example of a goal: every resident/participant engages in exergaming at least once a week.

### 2 Who is the exergaming activity intended for? What are their wishes and needs? What are their abilities/skills?

The equipment you ultimately choose must be compatible with the wishes, needs, abilities and skills of the people you want to use exergaming for. Try to determine which equipment is most suitable for the majority of visitors and take into account their cognitive and physical abilities and impairments. Things that may be fun for people with dementia, can be totally uninteresting for people without dementia, for example stroking a kitten on a screen. Also, make sure that games are not stigmatising or experienced as childish by participants, and take into account the individual differences in experiences.

### 3 Where will the exergaming activity take place? How large is the group and what supervision/support can you provide?

First of all, it is important that there is enough space to perform the exergaming activity correctly. Having to walk some distance to reach this space can be an impediment, especially for participants who need assistance getting around. An advantage of having the activity take place in a space that visitors are already using, is that they can start the activity independently.

Exergaming that is not readily visible is also used less (effectively). It is therefore important to make sure the equipment is placed where people can see it and have (relatively) easy access to it. For example by placing it in a public space. This also stimulates social interaction during exergaming. If exergaming is provided in groups, make sure that people who are watching can sit next to the equipment.

Both player(s) and spectators have been shown to experience this as very enjoyable. Some people prefer individual assistance. In addition to offering exergaming in groups (and as a regular activity), it may therefore be advisable to also make exergaming available individually and continuously. In that way people can do the exergaming activity any time of the day.

To ensure that everyone is given the opportunity to use the equipment, a rotation system is an option. However, regularly adjusting the equipment to fit the wishes, needs and skills of the user may require some time. To do this as efficiently as possible, a rotation system can be designed based on specific abilities of participants. In interactive cycling, for example: you could start with a group of participants who have less strength in their legs and/or more cognitive problems, who require a light resistance setting and/or you take the composition of the group into consideration.

#### **4 How do you create support for exergaming within the organisation?**

Presenting people with an accomplished fact after the equipment has already been purchased may backfire. Involving staff and preferably also participants in the purchase from the start, may help create support for exergaming. Determine the needs and goals together beforehand, and discuss differing opinions on, for example, the type of exergaming equipment, where it is to be placed (and in a later phase: what is the best 'schedule' to provide the activity and assist participants).

Also try to determine the origin of any resistance and look for solutions together.

Effective implementation of exergaming requires 'top down' support. Lack of support may make staff members feel they are in this alone. It is therefore imperative that supervisors and management actually support the use of the exergames. It may help to regularly share remarkable and/or positive experiences related to exergames with supervisors and management in order to enhance their commitment and to let staff experience this support. Furthermore, positive reports can also generate enthusiasm among staff members.

We recommend that you explain exergaming to staff members who are not immediately involved in the activity. In this way they will be able to answer questions about exergaming from potential participants and family members, and they don't have to be referred.

The value of all movement activities, including exergaming, can be emphasised in different ways. For example through a short article with a photograph of people engaged in exergaming in a (digital) newsletter or flyer, or on the website. But you can also organise information meetings as a platform to present exergaming. This will also generate a more positive attitude towards 'movement' in general. This can then result in the 'movement' theme becoming stronger and more embedded in the organisation. And in more hours being freed up for staff members who will be more involved in movement activities, and/or hosts and hostesses being given a more important role.

#### **5 How do you organise coordination and supervision?**

Do not assume that staff members can simply take this on in addition to their regular work. It is good to know in advance who will be offering and supervising/assisting with the exergaming activity. Preparing an overview of personnel involved in exergaming activities may be helpful here. Try to incorporate exergaming in the activities schedule. Either as a daily activity, or by building it up, for example starting with two times per week and expanding from there.

As regards coordination we recommend appointing two persons to be 'exergaming coordinators' who are directly involved in the exergaming and are responsible that the activity proceeds smoothly. These persons can

be the regular point of contact for the supplier, staff members and visitors/residents. In case of illness or vacation there will still be a point of contact. Moreover, having two coordinators strengthens the sense of not having to do it alone. It is easier to start something together than on your own. In practice, a background in sports or movement has been shown to facilitate implementation. Especially if the person in question is enthusiastic about exergaming and knows how to inspire others.

It is important to embed this task and this position in the organisation, in order to acknowledge the exergaming activities. Lack of personnel is one reason why movement activities cannot be/are not offered effectively. If necessary, you can organise volunteers (people from the neighbourhood, family members etc.) to help. It is also important to have sufficient supervision in the space where the exergaming equipment is located. The supervisor can help people use the equipment correctly (for example: not too long in order to prevent exhaustion). In addition to this physical support, the assistance is also important to stimulate social interaction during exergaming and to maintain enthusiasm among the users.

## Purchase & installation

The following considerations may be helpful in the purchase and installation of exergaming equipment.

### 1 How are you going to pay for the exergaming equipment?

You obviously need to know what budget is available and whether additional budget needs to be requested for the purchase. There are several possibilities to obtain funding for exergaming equipment. A list of potential subsidies is available on request via: [j.vandermolen@amsterdamumc.nl](mailto:j.vandermolen@amsterdamumc.nl) or [ontmoetingscentra@ggzingeest.nl](mailto:ontmoetingscentra@ggzingeest.nl)

### 2 Which exergaming equipment will you order?

We have already indicated that it is a good thing to take into account the goals and wishes, skills and abilities of the intended users. But that still leaves many different exergames to choose from. To make a good decision, it may be helpful to inspect different options in organisations that already have experience with exergaming, and then approach at least two providers of exergaming equipment. You should also take into account the service and/or costs of service offered (for example transportation, installation, repairs and updates, training for personnel). And check whether there are annually recurring costs in addition to the purchase price, for example a service contract, and include this in the budget.

Sometimes equipment can be tested on a trial basis, or a supplier can give a demonstration for personnel and/or visitors of the day-care centre/residents.

We recommend that you look at how easy to use and safe the equipment is, especially if participants are expected to engage in exergaming (partially) independently. As regards ease of use and safety, all parties involved should be taken into consideration: staff members, physical therapists, informal carers, relatives and others, depending on how and for whom exergaming is to be used.

You should also be aware that a user may not be stimulated or be understimulated by a particular exergame, but also remain alert to overstimulation, for example by music and ambient noises. This can often be regulated in exergames, or you can choose particular stimuli. For example, in interactive cycling (cycling on an exercise bicycle using videos): users can choose routes that provide many impressions, such as a large city like Amsterdam, but they can also cycle in a much quieter environment, like a rural area with lots of flowers. Effective decision making can be supported by making a list of the pros and cons of various types of equipment for specific goal(s) and target group(s).

### 3 Where is the exergaming equipment installed?

A light, quiet, spacious and easily accessible location is proven to be suitable for exergaming. Prior to installing the equipment, several things should be checked. The supplier can also provide some advice here. Measure to

make sure you have sufficient space for the selected equipment and some seats next to it. Also pay attention to the angle of the light and a calm and safe environment. Check in advance whether the location is available or whether objects need to be moved first. Obviously electricity is a necessity and make sure there are no loose extension cords. Organise things like this in time with the technical department. Make sure one of the exergaming coordinators is present during the installation, so any questions or problems can be addressed immediately.

Many people prefer to do movement activities outdoors, whereas exergaming usually takes place indoors. You can choose to move the equipment outside when the weather is good. It is advisable to place the equipment out of the sun (for example under an awning) so the images on the screen remain visible, and in a quiet and safe environment. The exergame should not be used instead of outdoor activities, but as an accessible alternative that is suitable for all weather types or when there is not enough supervision to go outside.

#### **4 How does the service contract work?**

When you order exergaming equipment, we recommend you check the service contract immediately. Don't wait until there is a problem, and contact the supplier right away if the contract is not clear in any way. Discuss questions like: 'What repairs are not covered by the contract?' and 'How long is the time between reporting a malfunction and it being repaired?'. It is convenient to have one or two people as the regular contacts at the supplier's end. Also, good contact with the supplier can help to stay informed of improvements and developments regarding exergaming equipment (for example updates).

## **Implementation & motivating participants and employees**

Once the exergaming equipment has been ordered and installed, several things need to be organised for the optimal implementation of exergaming and to ensure that participants and employees are and remain motivated.

#### **1 When is staff instructed on the use of the exergaming equipment?**

Instructing staff members thoroughly on the use of exergaming equipment can contribute to its successful implementation. This can be coordinated with the supplier in the early stage of ordering. It is important that all staff members who will be working with exergaming equipment attend the instruction session provided by the supplier. It may be useful to periodically organise a refresher training, for example when new staff members have been hired and/or a major update of the system has been installed.

In addition to receiving instructions, staff is also partly responsible for providing instructions to, for example, volunteers or relatives of the visitors/residents. Placing a concise manual near or on the equipment is also a good idea. And in order to invite people to ask questions about the equipment, it is important to regularly check whether the people involved need more support.

#### **2 How do you motivate day-care centre visitors/residents to participate in exergaming?**

In general, visitors of the day-care centre and/or residents will not start exergaming on their own initiative. You should stimulate staff to actively offer the exergaming activity. For them to be able to do this, staff members must know, understand, and be able to clearly explain the benefits of exergaming. This is not the responsibility of only one person. The best scenario is to have various staff members who are able to talk about exergaming with enthusiasm.

#### **3 How do you provide instructions about exergaming to participants? How do you motivate them to continue to participate in exergaming?**

Some participants need extra motivation (or persuasion) to participate in a movement activity. Motivate a person in a way that appeals to him/her, and look at the individual differences in needs, wishes, and how they change over time. Tempt visitors to give it a try. People like to feel that their confidence in their abilities is

supported. This confidence is enhanced by, for example, pointing out positive behaviour and giving compliments. It also helps when people can choose which game they want to do. Again, it can be helpful when supervising staff and other day-care centre visitors show a positive attitude and radiate enthusiasm about the movement activities. Make sure the person is in the correct starting position, take time to thoroughly demonstrate the action, and do not rush.

Sometimes it helps to start the exergaming activity with someone who is 'in' for trying new things. This could be just enough encouragement for others to try it out too. To make exergaming fun (in the longer run), you can devise your own creative solutions. For example by organising a contest or tournament, involving informal carers, or stimulating social interaction with other participants.

## Considerations when interacting with people with dementia

It is important to make sure that people with dementia do not engage in exergaming against their will. However, some people may be incapable of expressing their will clearly. Some considerations when supervising and supporting participants with dementia are:

- Work according to the approach/the proposed way of interaction as specified in the care plan for individual clients that is formulated by the multidisciplinary care team (if available).
- Each time check for physical or cognitive problems that can impede participation in the activity and/or cause pain or discomfort during participation. If there are problems, do not offer the activity. When in doubt, consult a doctor, physical therapist or psychologist.
- Check whether the participant remembers and understands what he/she is going to do and why. Make sure the participant does not feel he/she is being 'tested' on whether or not they paid attention. If necessary, repeat explanations based on the needs and cognitive abilities of the participant.
- Watch the body language/facial expressions of the participant, especially when verbal communication is impeded, and be alert to resistance against the activity.
  - Examples are: Does the individual turn away from the activity? Does he/she walk away? Does he/she look anxious? Does the participant become agitated when you bring up the activity?
  - Take into account what you know about the person: perhaps there are certain ways in which he/she would normally express him/herself. When in doubt consult someone who knows the person better/longer.
  - Try to find out the reasons for this behaviour, show understanding, reassure the person and try to offer what the person needs at that particular moment. Then try to calmly and quietly explain a few things.
- If the abovementioned actions have not taken away the resistance, do not insist that the person participate in the exergaming activity.
- If you estimate that the participant may want to participate in the following days, you can try again.
- Sometimes it can be helpful if a participant sees someone else doing the exergaming activity.
- People with dementia react to stimuli. Be alert that people are not overstimulated.

**→ Under no circumstance exert any type of pressure if you suspect that the participant does not want to do the exergaming activity (any longer).**

### Questions?

*Please do not hesitate to contact us:*

Joeke van der Molen - van Santen

PhD student

Amsterdam UMC, location VUmc, Department of Psychiatry

Phone: +31 (0)20 598 4336

Mobile: +31 (0)6 40 88 32 15

E-mail: [j.vandermolen@amsterdamumc.nl](mailto:j.vandermolen@amsterdamumc.nl)

Dr. Franka Meiland

*Project leader*

Amsterdam UMC, location VUmc, Department of Psychiatry

Phone: +31 (0)20 788 56 23

E-mail: [fj.meiland@amsterdamumc.nl](mailto:fj.meiland@amsterdamumc.nl)

Prof. Dr. Rose-Marie Dröes

*Supervisor*

Amsterdam UMC, location VUmc, Department of Psychiatry

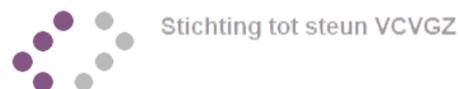
Phone: +31 (0)20 788 54 54

E-mail: [rm.droes@amsterdamumc.nl](mailto:rm.droes@amsterdamumc.nl)

This research is carried out in collaboration with project partners:



With thanks to:



### References & input

To write this factsheet we have used the 'checklist implementation steps' from the publication *Let's play; Using applied games to encourage the elderly to move* [in Dutch: *Let's play; Ouderen stimuleren tot bewegen met applied games*], written by TNO in collaboration with VitaValley in 2014. We also consulted several experts and used results from our process analysis from the study into the (cost-) effectiveness of exergaming for people with dementia and their informal carers. Please refer to this factsheet in the following manner: Joeke van Santen, Rose-Marie Dröes, Marian Schoone, Olivier A. Blanson Henkemans, Judith E. Bosmans, Sjef van Bommel, Esther Hakvoort, Ronald Valk, Carla Scholten, Joris Wiersinga, Marjolein Smit, Franka Meiland (2019). FACTSHEET Exergaming for people with dementia: come and join us! Recommendations to promote successful implementation

**Design**

Coen de Kort, Tilburg, the Netherlands.

**Printing**

Drukkerij Groels, Tilburg, the Netherlands.

**Funding**

This factsheet is based on research funded by the EU, Marie Skłodowska Curie Innovative Training Network (ITN) action, H2020-MSCA-ITN-2015, nr. 676265 (INDUCT project); ZonMw/Alzheimer Nederland, nr. 70-73305-98-629; Stichting Dioraphte, nr. 16 02 04 03; and Stichting tot Steun VCVGZ.