

## Not only fun and games

The Department of Rehabilitation at the Funen Hospital in Svendborg has purchased 30 exercise tiles for rehabilitation. Cardiac patients rate the equipment with good grades – equipment that is originally designed to make children exercise without even noticing it.

By journalist Helene Dambo  
Photo Soeren Skalby

*Georg Nordraak and Aud Margit Hansen are busy catching the tiles. They must aim at the green and red tiles respectively and avoid the “teasers”.*

*If Aud Hansen steps on the green tile Nordraak will receive a point. That would be a shame, and it makes the heart rate increase. A crucial spinoff is the social dimension, and it is certainly not boring.*



Back in 2006 10 exercise tiles landed at the floor at the Department of Rehabilitation at the Funen Hospital in Svendborg. Each tile has a built-in lamp. When stepping on the tile the light goes out and a point is registered on a counter.

The purpose was to study whether the tiles could be used for rehabilitation purposes. Since 2006 10 tiles have become 30 as the studies soon showed that exercise at and with intelligent tiles are both motivating and inspiring. That is because the tiles hold a level of competition, which makes the patients to pitch into the exercises.

Project Coordinator Tonny Jaeger Pedersen has recently published a report that substantiates the results of 3 months of testing on 20 cardiac patients between the age of 50 and 80. It shows, among other things, that the cardiac patients find circulation exercise on the intelligent exercise tiles very motivating.

- The cardiac patients are a central group in our rehabilitation section, he explains. Many of them are middle-aged – from 50 years of age and upwards, and they are the aim of our study. However, others also benefit other patients, for instance hip and knee patients. One of the benefits is that the tiles can be programmed for individual needs, and in the case of cardiac patients, it is about exercise that can help improve their physical fitness.

And the heart rate increases as the feet dance over the tiles. For instance, an exercise can be programmed to make two people compete to see who “catches” most tiles on time. Each gets a color and when they see the little lamp with that color flash, the task is to quickly step hard on the tile to make the counter on the wall register who has the fastest reaction. Similarly one can compete against oneself by stepping on more and more tiles within a certain time span.

### **Who will win?**

Much indicate that the level of competition affects the patients' interest when it comes to exercising. It has a pay-off when the participants can see their scores on the score board.

- 10 years ago I would have doubted the relevance of the tiles. Today I know better, says Tonny Jaeger Pedersen. The individually organized exercise, which the tiles enable, is clearly a bonus. Motivation and competition is the fuel that is going to make us do our best – regardless whether one is healthy or a patient.

At the moment the Department of Rehabilitation and Cardiology cooperate on describing of a clinical project. It would be an open and shut possibility to use the tiles as testing equipment instead of e.g. the traditional stair test. Furthermore, the departments prepare studies aimed at using the tiles for other patient groups, for instance injured athletes, apoplectic patients and elderly patients with hip fractures.

---

### **Not only for kids**

The intelligent tiles are developed for play and learning in cooperation between Kompan in Ringe, Entertainment Robotics and The Maersk Institute at the University of Southern Denmark. Hence Entertainment Robotics and The Funen Hospital developed the intelligent exercise tiles. The Funen Hospital is so far the only hospital in Denmark to use the tiles for rehabilitation.

See Tonny Jaeger Pedersen's report for further information.