

App to help COPD patients to become more physically active

Patients with chronic obstructive pulmonary disease (COPD), a chronic lung disease, are generally less physically active compared to healthy controls. However, being physically active is important for these patients. Being inactive results in a higher risk of a hospital admission and death. On the other hand, when patients perform regular physical activity, this is known to improve health outcomes and reduce chances of death. The aim of this study was to develop an aid that can help COPD patients to become more physically active.



The end product

As the interface of the aid we chose a smartphone because a lot of people already own them and they have a movement sensor that can measure physical activity. Then we developed an app that could help COPD patients to become more physically active. We performed several small studies to test various versions and aspects of the app. We tested the accuracy of the movement sensor of the smartphone, whether patients were able to learn and use the smartphone and application, and if they wanted changes in the application. The look of the app was changed three times as a result of the comments of the test subjects. There were problems with the battery but after some adjustments to the app it lasted a whole day. In the small studies we found that the smartphone and application are easy to learn and use by patients with COPD. The accuracy of the movement sensor was good in the final test. Patients were not concerned about privacy as long as they had

control over who can see their data.

The end product is an app that measures the number of steps patients take. Also, an individual physical activity goal is set. The app gives the patient feedback on their progression towards their daily goal. In the figure you see the bar on the left side. The rectangle starts at the bottom of the bar each day and slowly creeps up. The patient is represented with the vertical stripe which goes up if he or she takes more steps. If they keep up with the rectangle throughout the day, they will easily obtain their daily goal. The data from the app also gets sent to a secure website where the physiotherapist can monitor the patient. The physiotherapist can also adjust the individual physical activity goal via the website and sent individual or group messages to stimulate the patients.

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Publication

[A Mobile Phone App to Stimulate Daily Physical Activity in Patients with Chronic Obstructive Pulmonary Disease: Development, Feasibility, and Pilot Studies.](#)

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