Developing smart glasses with light therapy and visual cueing to improve health and behaviour in Parkinson's disease

https://neurodegenerationresearch.eu/survey/developing-smart-glasses-with-light-therapy-and-visual-cueing-to-improve-health-and-behaviour-in-parkinsons-disease/

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Contact information of lead PI
Country

Netherlands

Title of project or programme

Developing smart glasses with light therapy and visual cueing to improve health and behaviour in Parkinson's disease

Source of funding information

NWO

Total sum awarded (Euro)

€ 300,200

Start date of award

2015-07-15

Total duration of award in years

4.0

The project/programme is most relevant to:

Parkinson's disease & PD-related disorders

Keywords
Research Abstract
Although Parkinson's disease (PD) has traditionally been treated with dopamine replacement and deep brain stimulation, neural modulation through the visual system is becoming a viable

non-invasive alternative for treating both the motor and non-motor symptoms of PD. For example, visual cues such as parallel stripes or checkered tiles on the floor have long been used to improve gait disturbances in PD. Moreover, light therapy has been shown to improve insomnia and depression and decrease medication needs. The combination of these treatments may significantly improve patients? quality of life but requires long-term daily use to achieve the best results.

Recent advances in ?wearable computers? have now made it feasible to provide these therapies in daily life through ?smart glasses.? Given their portability and relatively unobtrusive appearance, we propose to develop a mobile e-health application for smart glasses that integrates image-forming (visual cues) and non-image forming (phototherapy) aspects of light in a dynamic way to improve gait, sleep, and mood in PD patients. Moreover, we will test which (combination of) cues, light therapy parameters, and necessary feedback information are optimal in daily living situations. Using the interactive capabilities of these devices, a treatment plan could be customized to fit the personal needs of the patient in real-time according to the time of the day or to the user environment. The results of this project will be a smart glass prototype with both visual cueing and light therapy functionalities that patients can use throughout the day.C12

Lay Summary
Further information available at:

Types:
Investments > €500k

Member States:
Netherlands

Diseases:
Parkinson's disease & PD-related disorders

Years:
2016

Database Categories:
N/A

Database Tags:
N/A