

Flexible Monitoring Insole for Early-Stage Parkinson's Disease Detection and After-Diagnosis Patient Life Quality and Treatment Evaluation

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Technology description

Overview

The elderly have a higher risk of developing Parkinson's disease than the general population. Early diagnosis (stage 1 or 2) can be critical with respect to treatment and maintenance of life skills. Often it can be quite challenging for a physician to make an accurate diagnosis in these early stages.

Technology

This invention proposes a daily monitoring method with a flexible monitoring insole (compatible with a smartwatch) to collect motion data for gait, activity, and depression analysis. In comparison to existing wearable methods for early-stage PD detection relying on physical motor symptoms analysis, the proposed insole (1) monitor daily gait changes, (2) reconstruct daily activities, and (3) detect depression. The results of regular gait monitoring, daily activity reconstruction, and depression detection -containing both physical and mental monitoring as first level analysis- will be combined to perform a second level analysis to help the physician detect early stage PD. Moreover, by comparing the data profile before diagnosis and continuously monitoring results after diagnosis, the physician can better evaluate and manage the treatment and life quality of PD patients.



**TECHNOLOGY
COMMERCIALIZATION**

Application area

Parkinson's Disease diagnosis and treatment

Advantages

The primary advantage is the ability to gather the patient's data in real time.

Institution

[Texas A&M University](#)

联系我们



叶先生

电话 : 021-65679356

手机 : 13414935137

邮箱 : yeyingsheng@zf-ym.com