

# Treatment Based on Patient Movements

## Summary

This invention relates to the use of a wearable as a means for predicting, evaluating and updating a patient's treatment protocol. A low cost, non-invasive wireless monitoring devices is used to continuously measure and document the patient's pre- and/or post-treatment physical activity that can be scored or stratified and used as a metric to determine or predict patient bounce-back, hospital readmittance, discharge, etc.

### Inventor

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### Field

Digital Health  
Oncology

### Technology

Wearables for Cancer

### Key Features

- Capture patient activity data using wearable device
- Low cost, non-invasive
- Improve patient outcomes

### Stage of Development

Preclinical Proof of Concept

### Status

Available for Licensing

### Patent Status

PCT Application Pending

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### Market

When treating a disease, a patient's "performance status" can be evaluated to measure the effectiveness of the treatment protocol. A patient's performance status is commonly regarded as an aggregate profile of physical, physiological, and psychological effects of a disease. For example, Eastern Cooperative Oncology Group (ECOG) performance status tool is one of the most widely used stratification tools in oncology clinical trials.

The ECOG performance status tool is simpler than its forerunner, i.e., the 11-point Karnofsky scale. However, both the ECOG and Karnofsky scales rely on subjective assessments, based primarily on the patient and caregiver's opinion of degree of physical mobility. There is currently no standardized or objective patient-reported survey or an established scale for each applicable parameter or patient stratification. Therefore, the use of objective measurements could improve the accuracy of basic metrics such as ECOG performance status scores or patient-reported outcome surveys used in developing a treatment protocol for a patient.

### Technology

The technology uses captured patient motion to improve treatment protocols. Data indicative of the patient's activity can be used (1) as a surrogate indicator of pre-treatment physical well-being alongside standard of care clinical evaluations, and (2) to improve the accuracy of pre-treatment patient performance evaluations. The wireless device measures patient's activity and transmits related data on a real-time, near real-time or periodic basis, which is used as an input to objectively assess a patient's treatment.

For example, a patient is diagnosed with cancer. The patient will undergo a preliminary evaluation and the patient is fitted with a wireless motion monitoring device. A diagnostic computer executes steps to compute a treatment protocol. The algorithm will process the recorded data to provide a possible treatment. The underlying process overlays the patient's level of activity received from the patient with other considerations such as diagnoses and information provided by the patient. As mentioned, the captured motion data can be compiled to form a patient profile.