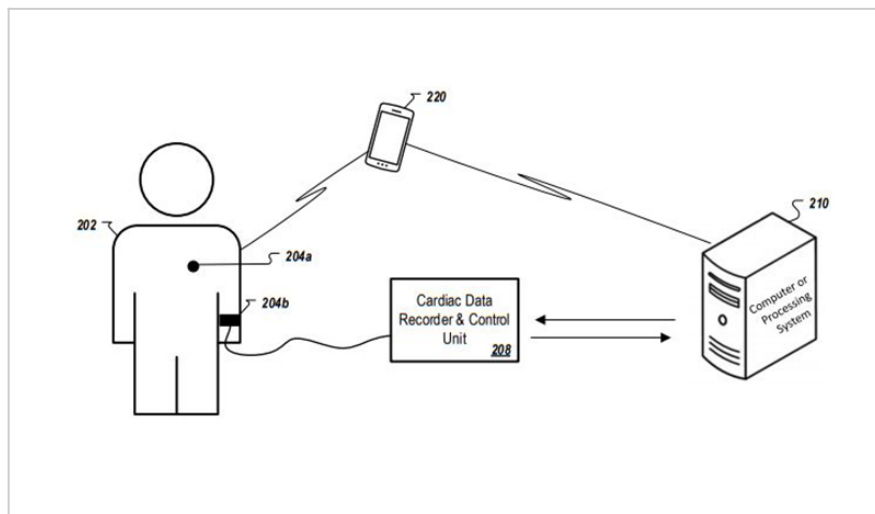


Smartphone-Enabled Sensing of Pre-Epileptic Seizures

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PennState



Recording Physiological Data

Technology Summary

This technology is a method of detecting neurological disease in a patient, specifically epileptogenesis, before first seizures develop. The method consists of the detection of abnormal physiological parameters by statistical assessment of correlations. In animal studies, signals can be identified weeks or longer before an animal's first seizures that distinguish them from animals that do not become epileptic. Non-epileptic animals had consistent, unvarying results from the onset of the analysis until time-of-death. This discovery can be utilized to identify potential patients at risk of developing epilepsy, track the progression of epileptogenesis, and predict the occurrence of subclinical epileptic activity and seizures. The researchers have shown that the high fidelity analysis is quite robust for a broad range of analysis parameters.

Application & Market Utility

There is currently no reliable, predictive biomarker of epileptogenesis. This innovation can enable early and effective interventions to prevent establishment of epilepsy as well as evaluate therapeutic efficacy of such treatments. It can also phenotype animals that will become epileptic and assess efficacy of potential interventions. This method could also act as a non-invasive biomarker to monitor other patient populations at high-risk for developing epilepsy, including those with post traumatic brain injuries, post-infection, post-anoxic/ischemic, and post-surgical.

Next Steps

Seeking research collaboration and licensing opportunities.

TECHNOLOGY READINESS LEVEL

4-7

Seeking

Investment | Licensing |

Keywords

- Epileptogenesis
- Early Detection
- Biomarker
- Epilepsy
- Parkinson's Disease

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