



# NovaUCD

## Technology Licensing Opportunity



# Remote Monitoring of Respiration

*- Supporting clinical management of patients in the home*



### Opportunity:

Respiration rate is an important vital sign which has been shown to predict adverse cardiac events and admission to intense care units. It can be used as a useful indicator to track disease progression or to monitor patients with neuromuscular or chronic respiratory disease, including Covid-19.

Researchers at University College Dublin have developed a low cost, unobtrusive method and associated algorithm for the remote monitoring of respiration using the microphone embedded in a smart phone or device. This technology allows patients to be remotely monitored in their own home, reducing hospital readmissions following surgery, or facilitating patients with infectious diseases to be remotely monitored while self-isolating.

### Applications:

Remote monitoring of patient symptoms during respiratory diseases, including Covid-19. Allows for the use of a smart device as a home respiratory health monitor.

### Key Features/Advantages:

- Remote collection of respiration data using a smart device microphone.
- Audio signal quality classifier and associated filter.
- Inhale and exhale identification, respiration rate and breathing volume.
- Validated in small study of 200 Covid-19 patients.

### Value Proposition:

Low-cost and non-invasive system for accurate remote monitoring of respiration using smart phone technology.

### Market:

Digital Health, Medical Devices, Remote Health Monitoring.

### Lead Inventor:

Dr Emer Doherty and Professor Madeleine Lowery, UCD School of Electrical and Electronic Engineering and Insight SFI Research Centre for Data Analytics.

### IP Status/Publication:

UK Priority Patent - Application No. 2109116.0 filed on the 24<sup>th</sup> June 2021.



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