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Shimmer's Verisense Continuous Monitoring Platform to Study Breast Cancer-related Fatigue

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A new study by the Irish Clinical Research Team aims to create an accurate baseline for breast cancer debilitating symptom, enabling the development of better predictive models and interventions



Shimmer Research, a global leader in wearable technology for research applications, on 10 Oct 2019, announced that a team of researchers from Letterkenny Institute of Technology (LYIT) and Letterkenny University Hospital (LUH) will be using Shimmer's Verisense™ continuous monitoring platform to study fatigue accurately in individuals with breast cancer. This news was announced during the Med in Ireland conference in Dublin, Ireland.

This feasibility study will be led by LYIT research lecturers Dr William Scott and Dr James Connolly in association with LUH research oncology nurse Mary Grace Kelly and consultant oncologist Dr Karen Duffy.

"Cancer-related fatigue (CRF) – which is distinct from normal tiredness that may be resolved by periods of sleep or rest – is a well-recognized symptom of malignant breast disease. In fact, it may affect up to 70% of those undergoing therapy or deemed to be in remission," said Dr Scott. "This type of fatigue recurs unpredictably and can result in an unavoidable and unforeseen reduction in quality of life for those individuals affected. Management of this condition can also place a significant financial burden on health and social care facilities."

"Previous research studies have suggested that modulations in the levels of certain plasma or salivary markers may be involved in the advancement of CRF symptoms. However, results from these studies are often conflicting and no individual marker or group of markers has been attributed to the cause of this fatigue. This has major implications for the development of predictive models of recurrence and the design of potential physiological and pharmacological interventions," added Dr Connolly.

"Part of the problem is that earlier studies have failed to identify an accurate baseline for fatigue and have instead relied on subjective patient perceptions of inactivity and exhaustion," said Dr Scott. "Our study aims to establish an accurate fatigue

baseline for individuals diagnosed with breast cancer to determine relationships between potential fatigue markers, measurable daily activity and sleep, and individual perceptions of fatigue."

To that end, study participants will wear one of Shimmer's Verisense Inertial Measurement Units (IMUs) on their wrist to monitor their sleep patterns and activity levels continuously throughout the study.

"Shimmer's technology was designed specifically for use in clinical trials and differs in several significant aspects from typical off-the-shelf fitness trackers. For example, the Verisense wearable sensor does not require regular charging – its battery lasts for up to six months! Also, Verisense data is automatically uploaded to a remote cloud platform without any patient involvement, making it truly a low-stress, no-hassle device. Research staff can then remotely monitor patients' activity and sleep levels, check whether patients are wearing their device, monitor sensor battery status, and reduce the amount of patient-researcher time required to run the clinical study," said Geoffrey Gill, president of Shimmer Americas.

The Verisense wearable sensor platform will improve the efficiency and management of this feasibility study through the speed of data collection, as well as remote monitoring of patient participation. Interested parties can learn more about Shimmer's Verisense platform at stand 72 at Med in Ireland. Financial support for the development of the Verisense platform was provided in part by Enterprise Ireland.