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New research could lead to a blood test for common pain syndrome fibromyalgia

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New UK research could lead to a blood test to diagnose the common pain condition, fibromyalgia.

Fibromyalgia is common pain syndrome causing widespread muscle and bone pain, as well as fatigue and disturbed sleep. It has no obvious physical cause, is poorly understood and difficult to diagnose, treat and manage. For years there was doubt among the medical profession whether fibromyalgia actually existed – except in the minds of patients.

There is still no specific blood test, scan or x-ray that can confirm a diagnosis of the common pain syndrome, although blood tests are often carried out to rule out other conditions.

Now scientists at King's College London, funded by a three year grant of £171,000 from Arthritis Research UK, are hoping their latest research will lead to a reliable blood test to enable doctors to make a proper diagnosis.

The research team will examine samples and measurements taken from 400 twin volunteers from the 13,000 Twins UK Bioresource in which one twin has chronic widespread pain, to try to identify biomarkers in the DNA associated with the condition. It will be compared with the DNA of their healthy twin, to establish differences.

"Currently there is no blood test for fibromyalgia which makes diagnosis difficult," explained lead researcher Dr Frances Williams. "And

treatment is limited, and in many cases unsatisfactory.

"Our research will help patients in two ways. First it will contribute to our understanding of how fibromyalgia – and other chronic pain syndromes such as irritable bowel syndrome – develop – and point to pain pathways, which we may not have suspected.

"Secondly, we hope it will lead to identification of a biomarker which we could work into a blood test. As well as enabling the condition to be diagnosed more effectively, it could help to 'stratify' patients into groups depending on disease severity, which will help in clinical trials of potential new treatments. It might even help us predict how the condition will progress."

Fibromyalgia is known to have genetic influences but there are many complicated steps between the genes which are responsible for fibromyalgia and the condition itself. The King's team hopes to explore these steps in more detail and shed light on the underlying biology of the condition.

Specifically, this study will focus on identifying markers on the outside of DNA that are associated with the switching on or off certain genes. DNA 'switching' is very important to health, as it prevents inappropriate processes from occurring in the body when they should not.

The project aims to assess the profile of DNA markers in healthy and affected twins. If there is a difference between these marker profiles on certain DNA regions associated with chronic pain onset between twins, then this DNA marker could be used as an indicator for disease.

Dr Natalie Carter, head of research liaison at Arthritis Research UK commented: "Fibromyalgia is notoriously difficult to diagnose and treat, partly because we know so little about why it occurs and how it

progresses. Being able to diagnose it would be a major step forward, and understanding more about the influence of genetics will allow us to develop treatments specifically for people with fibromyalgia in the future."

Provided by Arthritis Research UK