The key to understanding asthma may lie in the body clock

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Our body clock allows bodily processes to occur at certain times of the day, like eating, sleeping and body temperature.

But did you know that monitoring a person's body clock (or circadian rhythm) could help diagnose and treat asthma?

New research supported by Asthma UK, a charity which provides health advice and a helpline to people with asthma as well as funding research into the condition, has revealed that asthma is "highly rhythmic," meaning it is impacted by a person's body clock.

It means the symptoms an asthma patient might have such as coughing, wheezing or shortness of breath, could be more intense at different times of day and this insight could revolutionize the way doctors treat the 5.4 million people in the UK who have asthma and help to prevent life-threatening asthma attacks.

The study carried out by Dr. Hannah Durrington, a clinician scientist at The University of Manchester and a Consultant in Respiratory Medicine at Wythenshawe Hospital, part of Manchester University NHS Foundation Trust, explored why people with asthma experience worse symptoms at night and in the early hours of the morning.

The results showed that tests used to diagnose asthma should take time of day into account, for example peak flow measurements (a quick test to measure air flow out of the lungs) are lower at 4am than at 4pm, and this is the case for other asthma tests.

Doctors assess the severity of asthma in a patient (particularly eosinophilic asthma, which is associated with high levels of a white blood cell called eosinophils) by measuring the levels of eosinophils in blood or sputum (phlegm).

Dr. Durrington, who is also a researcher at the National Institute for Health Research (NIHR) Manchester Biomedical Research Centre, revealed that these levels naturally change over the course of a day, so if

doctors timed appointments around these variations, they would get a much more accurate picture of a person's asthma.

Her research could help the medical profession determine whether there is an optimum time of day to use inhalers and take other asthma medication, so it has the best chance of keeping symptoms under control.

Dr. Durrington said: "Asthma can have a huge impact on people, leaving them coughing, wheezing, gasping for breath and putting them at risk of having a life-threatening asthma attack. It is really exciting to think my research could play a part in making things better for people with asthma, helping doctors assess if patient's symptoms are at their worst depending on the time of day and identifying exactly when people should take their inhalers to keep them well."

Dr. Erika Kennington, head of research at Asthma UK, which funded the study, said: "There is still so much we don't know about asthma, and studies like these are a vital step in understanding the disease and ultimately leading to us finding a cure for this dreadful illness that causes the deaths of three people every day in the UK. But despite the fact that 5.4 million people in the UK have asthma, only two percent of all medical research funding in the UK is spent on research into respiratory diseases."

Provided by University of Manchester

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