

Serious asthma attacks reduced by temporary quadrupling of steroid inhaler, study finds

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Credit: University of Nottingham

Serious asthma attacks in adults can be reduced by a temporary but significant increase in the dose of inhaled steroids during severe episodes of asthma, according to a new UK-wide study led by experts at the University of Nottingham.

Previous research at the University has found that doubling the dose of inhaled steroids during worsening [asthma](#) did not prevent the frequency of serious attacks, so this new NIHR-funded clinical trial was set up to see if quadrupling the dose had a more beneficial effect.

Asthma is one of the most common chronic diseases and affects around 300 million people worldwide. Acute episodes are frightening for patients, cause significant ill health, unnecessary deaths and also account for a large proportion of the overall costs of asthma to health services.

During serious asthma attacks patients may have to be admitted to hospital for treatment including oxygen, nebulised bronchodilators and high dose steroids that can sometimes have adverse side effects.

Three people die from asthma in the UK every day and, according to the National Review of Asthma Deaths, two thirds of these deaths could have

been prevented with basic asthma care, which includes patients getting a written asthma action plan from their doctor which, among other advice, outlines the medicine they should use.

The Fourfold Asthma Study (FAST) – published in the *New England Journal of Medicine* – compared two asthma self-management plans in a large trial involving nearly 2000 patient volunteers in England and Scotland. Around half the patients were randomly assigned to the plan that prescribed a quadrupling of inhaled steroid during periods of worsening asthma and the other half followed the current standard self-care plan over a period of 12 months.

The study showed that the participants in the quadrupling group had a 20% reduction in severe asthma attacks compared with the usual care group and they also had fewer asthma-related hospital admissions as only 3 patients in the quadrupling group were admitted to hospital compared with 18 in the usual care group.

Professor of Asthma and Respiratory Medicine, Tim Harrison, from the University's School of Medicine, and the NIHR Nottingham Biomedical Research Centre, Nottingham University Hospitals NHS Trust said: "Our study shows that patients can reduce the risk of a [severe asthma attack](#) by following a self-management plan which includes a temporary four-fold increase in their preventer medication when their asthma is deteriorating. This means less need for oral steroids such as prednisolone, less admissions to hospital with severe asthma and hopefully fewer deaths from asthma".

Long-term asthma patient, Richard Harris, 68, from Stamford, Lincs, who took part in the trial, said: "The study has made a real difference to my quality of life and my asthma is under much better control

as a result. At the completion of the study I continued to follow the quadrupling self-management plan with the agreement of my GP. I could not praise the team at Nottingham highly enough. They manage to combine high levels of professionalism with a friendly approach that makes the patient feel part of the team, with valued opinions and information."

Provided by University of Nottingham

Dr. Samantha Walker, Director of Research and Policy at Asthma UK, and co-author of the study said: "This groundbreaking research could make a real difference to the 5.4 million people in the UK with asthma. This study showed that increasing the steroids in someone's preventer inhaler could prevent them having severe asthma attacks and needing to go to hospital.

"We'd urge any healthcare professionals who want to increase their patient's [asthma medication](#) to fully explain what it means, let them know about potential side effects and include it in their written asthma action plan. People with asthma who would like to increase their medication should talk to their healthcare professional and should not delay getting help or support even if they do have an asthma attack."

The FAST trial was managed by the Nottingham Clinical Trials Unit and funded by National Institute for Health Research (NIHR). Professor Hywel Williams, Director of the NIHR's Health Technology Assessment (HTA) Programme, said: "We are proud to have funded this original researcher-led study. The research shows that quadrupling inhaled steroids during periods of worsening asthma reduces severe [asthma attacks](#) by a substantial amount, resulting in a reduced need for oral steroids and fewer hospital admissions. The study is good news for [asthma sufferers](#) all over the world as it shows how [patients](#) can better manage their condition and ultimately improve their quality of life."

More information: Tricia McKeever et al. Quadrupling Inhaled Glucocorticoid Dose to Abort Asthma Exacerbations, *New England Journal of Medicine* (2018). [DOI: 10.1056/NEJMoa1714257](https://doi.org/10.1056/NEJMoa1714257)

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