

I'm Clive Page, a Professor of Pharmacology at King's College London. I do research on understanding why people have asthma and I'm here today to talk about it. AMA!

Clive<sub>Page</sub><sup>1</sup>*andr/ScienceAMAs*<sup>1</sup>

<sup>1</sup>Affiliation not available

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### **Abstract**

My name is Clive Page and I am a Professor of Pharmacology at King's College London and Director of the Sackler Institute of Pulmonary Pharmacology, King's College London. I have spent my career working on understanding why people have asthma and other inflammatory diseases of the lung. I have also been very interested in the treatment of these diseases and have been involved in the discovery and development of a new drug for the treatment of asthma and COPD (smokers disease), RPL554, which is currently in clinical trials. I recently gave the 81st Stephen Paget Memorial Lecture about the role animals have played in the development of medicines to treat asthma. I have always advocated openness in discussing the role of animals in research and have contributed widely to the public debate about this important issue. This is my first AMA, I'm here to talk about asthma and other inflammatory diseases of the lung, the treatment of these diseases, and how animal research plays an important role, so Ask Me Anything! This AMA has been organised by Understanding Animal Research. Thanks for your questions and I hope the information supplied is of some help

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## AMA!

CLIVE\_PAGE [R/SCIENCE](#)

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Why did my asthma go away? I stopped having asthma in my mid teens.

[thebumpuses](#)

We do not fully understand why some people lose their symptoms in their mid teens. It has been suggested by some investigators that the hormonal changes that occur in puberty and pregnancy may cause changes in the airways leading to changes in the pattern of asthma symptoms

What correlations are there between fitness and asthma?

What correlations are there between allergies to dust/cats/grass and asthma?

What is the significance of puberty on Asthma? (Commonly reducing symptoms in children)

[Obliza](#)

There have been a number of studies demonstrating that deep breathing can have a beneficial effect on symptoms in some patients with asthma. There is certainly strong evidence that many people with allergy to dust mite (it is proteins in the faecal pellets of the house dust mite found in dust rather than the dust itself that people can be allergic to) can also have their asthma induced by these pellets when

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they are hoovering and the dust is disturbed or when they shake up their duvet. People can be allergic to cat "dander" or indeed "dander" from other domestic animals, although in some people have asthma that is not allergic. It is certainly know that puberty can cause some children to lose symptoms, but the reasons for this are not fully understood

What are the chances of finding a cure for asthma?

[the-real-apelord](#)

We are ever hopeful that we will one day be able to cure asthma A number of groups are working on vaccines against common allergens known to trigger asthma. I have been involved with a research project trying to understand why people exposed to tuberculosis appear to have less allergy and asthma. Also there have been recent experiments studying the Amish and Hutterite populations who have differences in their asthma and allergy prevalence and shown that exposure of children to "barn dust" protects against allergy and asthma.

Hi Clive and thank you for doing this AMA.

I have spent my career working on understanding why people have asthma and other inflammatory diseases of the lung.

This reminds me a lot of atopic march - where people with one atopic disease (say eczema) are more likely to develop another (asthma, rhinitis, even COPD).

Are there a set of key cytokines that you see as important for this in inflammatory lung disease?

What do you think of targeting IL4/IL13 in COPD?

[SirT6](#)

Allergy is certainly a risk factor for developing asthma in some patients, but we know that this is not the complete answer as many patients with asthma are not allergic. However, much of our thinking on asthma has been driven by an allergy=asthma paradigm which has led us down many a blind alley. We know in other chronic inflammatory diseases that there are some key mediators driving the disease process in some patients eg TNF and certainly in allergic subjects with asthma IL-4 and IL-13 seem to be important. Maybe targeting IL-4/13 in patients with overlap syndrome may be a way forward, but I am not sure why targeting these cytokines would be of any value in patients with COPD

What do you find are the most common misconceptions about your field or inflammatory diseases in general?

[SwoleMedic1](#)

One of the biggest challenges we face with asthma is getting people to understand that whilst reliever medicines are life saving and patients feel better from taking them they do little to the underlying disease and there is a need to have people understand that just because the symptoms have disappeared the underlying disease has not gone away and requires regular treatment with anti-inflammatory drugs, even if these do not make people feel better immediately

What typically triggers adult onset asthma, and what can cause it to get dramatically worse?

[undercover\\_batgirl](#)

We are not really sure why some people suddenly get asthma in later life as most asthma starts in the first few years of life. As with all asthma certain environmental triggers such as exposure to certain types of pollutants, cold air, strong perfumes can trigger an asthma attack. This is because patients with asthma have underlying "airway twitchiness" as a feature of their disease which means the lungs of patients with asthma are supersensitive to agents that produce little or no effect in patients who do not have asthma

what asthma really is? #India

[thrive\\_hive](#)

Asthma is a relatively common chronic inflammatory disease of the lungs which usually starts in the first 5 years of life, although in some people this can start in later life. In many patients they also have allergy to airborne allergens such as house dust mite which can trigger an asthma attack. The inflammatory response in the lungs if unchecked with appropriate treatment (eg glucocorticosteroids) can lead to "twitch airways" which means that the patient will then have an asthma attack triggered by environmental stimuli such as cold air or pollutants that would produce little or no effect in patients who do not have asthma

Why do non-respiratory stimuli sometimes cause asthma attacks? Like, I'll get one after drinking a beer and laying down, or having indigestion and laying down.

[Lancasterbation](#)

Many asthma patients have "twitchy airways" (bronchial hyperresponsiveness in medical terminology) which means they are super sensitive to certain environmental stimuli that would have little or no effect on the lungs of subjects without asthma eg cold air, exposure to perfumes, pollutants (even those generated in thunder storms) and to preservatives such as sulphites that are used in certain foodstuffs and certain alcoholic beverages as we expire the Sulphur dioxide as a by product from these preservatives via our lungs.

What animals were used in the development of RPL554 and why are they essential for researching asthma?

[hansyhobs](#)

We have used guinea-pigs, rats and dogs in developing RPL 554 a new drug in clinical trials for the treatment of asthma. The rats and dogs were used to assess the safety of this drug before we could investigate this medicine in people for the first time. Guinea-pigs also helped decide on the best route of administration (inhalation) and dose to use in people. Without this critical animal work we would not know have known where to start in our first clinical studies

I know guinea pigs have been used in Asthma research. What does Asthma in a guinea pig look like?

[tomholder](#)

Guinea -pigs have helped us develop the major classes of drugs we use to treat asthma namely the relievers such as the B2 agonists like salbutamol (Ventolin) and the drugs we use to reduce the

inflammation in the airways that leads to symptoms, namely the inhaled glucocorticosteroids. We are able to induce symptoms of bronchoconstriction (wheezing) by administering substances to guinea-pigs that we know cause these symptoms in people eg histamine. We can also make guinea-pigs allergic to common antigens such as house dust mites and trigger an inflammatory response in the lungs

Hello Prof Page and thanks for doing this AMA. I have two questions. The first is, do you have much time for the 'hygiene hypothesis' i.e the idea that asthma is caused or exacerbated by over-sterilised home environments? The second is, are you surprised by the continued and increasing prevalence of COPD now that smoking rates are dwindling?

[towerhil](#)

I think there is quite a lot of good evidence supporting the so called "hygiene hypothesis" – for example we know that exposure of children in early life to "barn dust" has recently been shown to prevent the development of allergy and asthma and similar work has been published on exposure to certain bugs such as tuberculosis. I am not surprised about the increase in COPD despite a fall in smoking, at least in western countries. However, smoking is on the increase in south east asia with worrying trends for COPD also going up. However, this could also be due to poor air quality in many cities of the world which could be contributing to increased levels of COPD. Furthermore, in some developing countries women in particular still cook over wood fires in confined areas which may lead to COPD even though these people have never smoked a cigarette. We need to think more broadly about the impact of air pollution in the context of how we deal with respiratory health

Just how dumb am i for smoking and being asthmatic?

[Gingerchaun](#)

I am sure it is not a good idea to smoke full stop as we have a lot of information now that this activity puts you at considerable risk of lung cancer, COPD and even some cardiovascular diseases. However, stopping smoking is easier said than done, although there are now a lot of places to get help to do this. Best of luck.