

## PRESS RELEASE

### How the environment influences allergy before and after birth

**Istanbul/Zurich, 12 June 2011 - The future immune health of a person can be influenced even before they are born, new research shows. A study by Professor Harald Renz of the University of Marburg, Germany, indicates that if a pregnant woman is exposed to a diverse range common allergens it can reduce the risk of allergy in her unborn child.**

"We now know that the origin of chronic inflammatory disease is in very early life – and very early life means it starts during pregnancy" he said.

In order to investigate these effects, Professor Renz used an environment that contains a diverse range of microbes - a farm. "There is a very nice model situation that confers a high degree of asthma protection – the rural farming environment" he said today at the Congress of the European Academy of Allergy and Clinical Immunology in Istanbul.

Although the 'hygiene hypothesis' (that the modern preoccupation of keeping children in a clean and sterile environment increases their risk of developing allergy) has been the subject of debate for some time. What is new, however, is that these influences begin before the child is born. "We now know that if the pregnant woman is exposed to microbes from this environment such as from cows and in stables, these initiate an immune response in the airways of the mother, and this immune response confers a level of protection in utero," explained Professor Renz.

It is important to bear in mind that the farm is a model situation that is helping us to understand the mechanisms underlying these effects, and this information could be used to mimic the farm situation in order to prevent allergy in the future. "It doesn't mean everyone has to live on a farm - what I could envision is an asthma vaccine, where you would have a couple of shots during childhood and would be protected," said Professor Renz.

Probiotics can also help. Those currently available added to yoghurt, for example, are too weak to impact future allergy, but stronger probiotics could be beneficial. "We need to look to the future – and use our knowledge to reduce the risk of allergy in the general population," he said.

Environmental factors can influence allergy severity after birth and throughout life, and one of the most common is pollen. Climate change is altering the distribution of plant species and lengthening the flowering season. This is already having a significant impact on allergy sufferers and is likely to become worse in the future unless mitigating steps are taken, said **Dr Lorenzo Cecchi** of the University of Florence, Italy.

The effect of recent decades of climate change on pollen distribution in Europe is the subject of a document, published by the 'Task Force on Climate change and Allergic Diseases', which includes Dr Cecchi and other experts from both EAACI and European

Respiratory Society (ERS) and endorsed by both societies. The report shows how the 'pollen map' of Europe has altered, and that trees such as birch and cypress are now flowering earlier and for longer than they were 20 or 30 years ago. This has important implications for allergy sufferers and beyond: "The extended pollen season means that people have to begin taking anti-hayfever medication earlier – and this means more drugs and more cost for the individual or national health provider," Dr Cecchi explained.

Allergic diseases have been increasing in recent decades, and although it seems to have plateaued in the West, they are still increasing in developing countries. "There are many reasons for this – genetic and environmental and probably others, but our research suggests that greater and longer exposure to environmental factors such as pollen and airborne allergens from pollution could play a role" said Dr Cecchi.

In order to most effectively manage any future changes and develop the best predictive models of the future, the lessons of this recent study need to be combined with careful and detailed monitoring of the precise nature of the ongoing changes. "For example, grass pollen is differently affected by climate change in different countries and there are very important regional differences," explained Dr Cecchi. Informing local authorities about which plants are the least likely to cause problems for people with pollen allergies is also likely to become more important in the future. "The goal for policy makers needs to be to reduce both air pollution and allergic pollen," he said.

There are numerous 'pollen networks' in Europe, groups that monitor types and levels of pollen, but Dr Cecchi strongly believes these need to be co-ordinated, and most importantly, better funded – some are run on a voluntary basis. "Availability of such datasets will be vital to understand the changes as they occur and to build a model of the changes that will allow us to forecast the future. The EU needs to fund more research projects like this," concluded Dr Cecchi.

## Symposium 5

### NOTES TO EDITORS

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#### **About EAACI :**

EAACI - The European Academy of Allergy and Clinical Immunology is a non-profit organisation active in the field of allergic and immunologic diseases such as asthma, rhinitis, eczema, occupational allergy, food and drug allergy and anaphylaxis. EAACI was founded in 1956 in Florence and has become the largest medical association in Europe in the field of allergy and clinical immunology. It includes 6'500 members from 107 countries, as well as 41 National Allergy Societies.

Throughout 2011, EAACI will develop different activities to celebrate the 100th anniversary of immunotherapy in Allergy, which will aim at increasing the knowledge in this field among healthcare professionals, increase awareness in the general population, and finally, promote the availability of immunotherapy for allergic patients.

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