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**Breathing easy: farm upbringing best defence against allergies**

[Rania Spooner](http://www.smh.com.au/national/by/Rania-Spooner-hvefa)

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Protection against allergies and asthma in children who grow up on farms extends into their adulthood and may be linked to other health benefits, a new study reveals.

A long-running international analysis, led by Australian researchers, also found that women who lived on farms as small children had stronger lungs than those raised inner city.

The research published in *The BMJ*'s [*Thorax journal*](http://thorax.bmj.com/lookup/doi/10.1136/thoraxjnl-2015-208154) studied more than 10,000 participants aged 26 - 54, from 14 centres around the world, including about 500 Australians.

Their lung strength and sensitivity to allergens was tested and they were asked about environmental factors in their early lives, including whether they had pets, older siblings, if they shared a bedroom and where they had lived.

As adults, children who had lived on a farm before age six were 54 per cent less likely to have asthma or hay fever and 57 per cent less likely to have allergic nasal symptoms compared to city kids.

Suburban kids, or those who lived in a town or village as small children were only slightly less likely to have asthma or hay fever as an adult than those from the city.

"As any parent with a small child knows, childcare centres are hotbeds of viruses and bacteria, but it turns out that's nothing compared to a farm," says lead author Brittany Campbell from the University of Melbourne's Allergy and Lung Health Unit.

"We found that for kids in villages, towns, suburbs and cities, not even day care or living with cats, dogs and older siblings came close to endowing the protective effects that appear to come with life on a farm."

Although women who grew up on farms were also found to have significantly better lung function than those who started life in a city, the same could not be said of men and the researchers don't know why.

Allergies have risen dramatically in developed countries over the past three decades and [Melbourne](http://www.smh.com.au/national/health/is-it-nutty-to-ask-if-melbourne-is-the-capital-of-our-allergy-nation-20150721-gihfqp.html) is considered to have some of the highest rates of food allergy in the world.

Senior author Shyamali Dharmage, the head of the Allergy and Lung Health Unit, said the findings provided the first insight into how a farm upbringing affected lung function. But she said more needed to be known about what was the causing health benefits and why there was a difference between genders.

"It is possible that they get exposed to different things because of the work practices between males and females," she said.

"Females may be getting exposed to things that have a more beneficial effect.

"So far we haven't figured out what exactly in the farming environment is providing this beneficial effect."

The study, which also involved the Murdoch Children's Research Institute and international institutes, adds weight to the "hygiene hypothesis," which argues allergies are rising because children are too clean, or not exposed to enough microbes.

"One of the hypotheses is that we are too hygienic and therefore we kill all of the good bacteria and we're not exposed to the good microbes we used to be," Professor Dharmage said.

Scientists from the Flanders Institute for Biotechnology and Ghent University in Belgium have also been looking at the link between farms, allergies and asthma recently.

Studying farm dust in the hope of creating a vaccine against asthma, last year they [discovered](http://www.smh.com.au/technology/sci-tech/farm-life-nothing-to-sneeze-at-as-children-escape-allergy-sniffle-20150906-gjg3ul.html) most children exposed to farm dust produced a protein called A20, which seemed to protect them from inflammation responses.

When professor Hamida Hammad, a researcher from Belgium, visited Melbourne earlier this year she said child care centres were already being built on farms in Europe to ensure small children were exposed to farm material.