

ALLERGY, GENETICS

WHAT IS WRONG WITH THE 2011 NEJM PAPER?

16.10.2019

[N Engl J Med 2011;364:701-9](#) is another paper with 1000+ citations that had a lasting impression on some but not all people.

First, I can't remember of any study with such an enormous selection bias where >94% of individuals have been lost.

Second, we should not forget that farm is not protective per se – farmers may [just avoid a known allergy risk factor](#). PARSIFAL participants in this study included Steiner schools — [anthroposophic medicine mostly avoids vitamin D \(ref\)](#). This is of course a major issue for any cross-sectional study that doesn't take into account the [temporality of events](#).

Third, in PARSIFAL dust from children's mattresses were collected by vacuuming — it is not very likely [that many helminthic eggs were transported](#) from stable to bedroom. In GABRIELA, only airborne dust samples were collected which again may miss helminth eggs although being certainly present in stable dust.

Fourth, more microbial exposure and more fungal taxa on farms are a trivial finding.

The inverse associations of the diversity scores with asthma were not confounded by status with respect to living on a farm because adjustment did not change the respective point estimates for asthma (Table 2), although the associations became nonsignificant.

Small sample size, borderline p-values even after a long fishing expedition?

What do these strange “probability” plots really show – the probability of asthma or the probability to live on a farm?

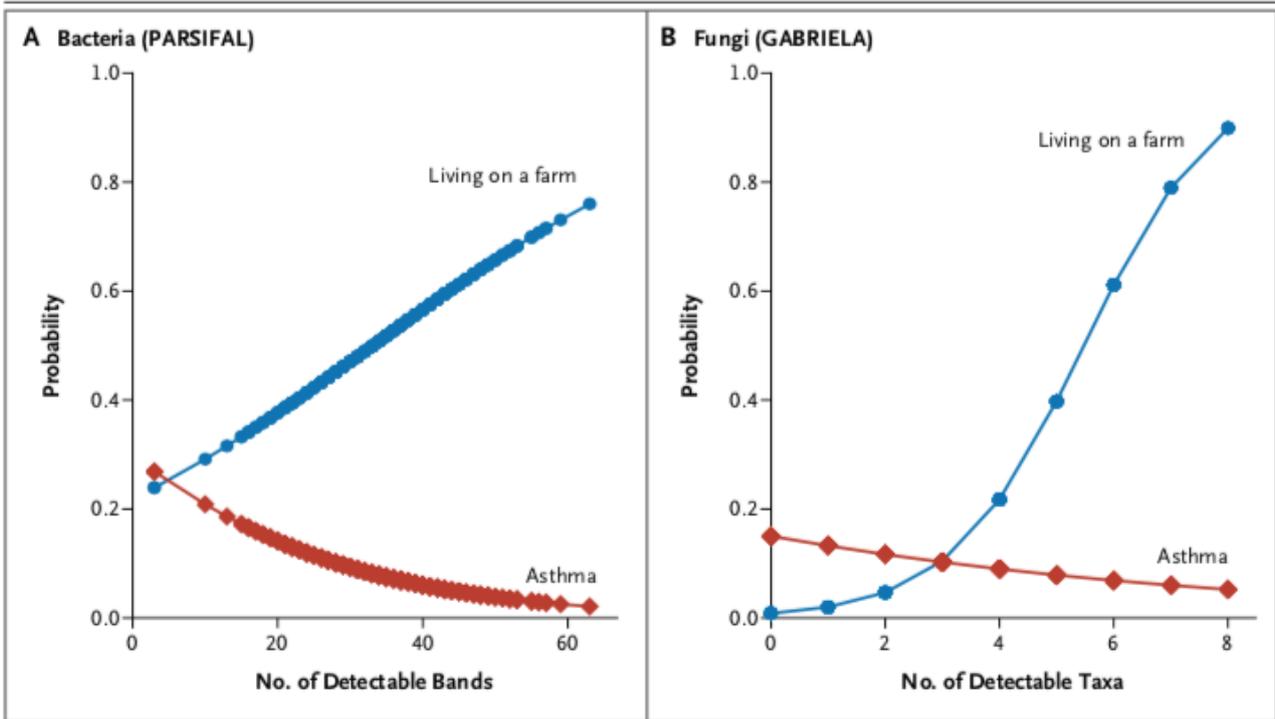


Figure 3. Relationship between Microbial Exposure and the Probability of Asthma.

In both the PARSIFAL study and GABRIELA, the range of microbial exposure was inversely associated with the probability of asthma.

N Engl J Med 2011;364:701-9 Figure 3 Does it refute any general effect of diversity?

The plots are misleading if adjustment for farm living does not change the parameter estimates for bacterial/fungal diversity.

Sixth – even many years later, the main findings of this study have not been independently replicated. There is not any single study that shows listeriosis (*Listeria*) or diphtheria (*Corynebacterium*) to be protective.