The dawn of true prevention for allergy and asthma

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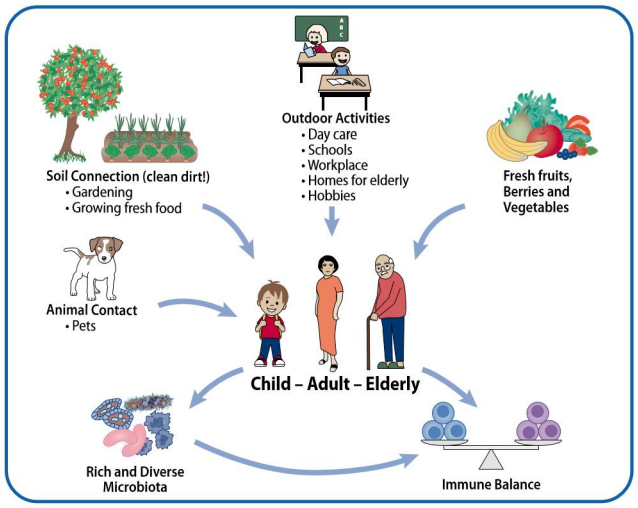
Thinking outside of the box. We clinicians and allergists are trained to work patient by patient: setting diagnosis, prescribing drugs and tailoring immunotherapy. Advising patients also to avoid symptom-causing agents is, and should stay, in the armamentarium of a competent allergist. But does it have an effect on public health?

Take two steps. Two steps are needed to tackle any disease burden at the population level: (1) improving early diagnostics and patient care, and (2) stepping from treatment to prevention. For the first, we need better knowledge of disease pathomechanisms, biomarkers and targets of medication. For the second, we need better understanding of the true causes of a disease. For both, we need research, organised healthcare and a stable society.

Reduce the burden. In the early 1990s a new paradigm of asthma as an inflammatory disease was implemented into practice by the Finnish Asthma Programme (1994–2004). Improved care markedly cut costs both for individual patients and society. Many countries followed and reported equally good results. However, the big challenge of asthma prevention and stopping the epidemic remained.

Prevent the burden. New information about the immune system´s development and its determinants in modern, urban societies has challenged the conventional thinking of allergy prevention. The last 60 years of avoidance have not stopped the allergy epidemic or helped fast growing urban populations to adapt new environments or lifestyles. The evolution of scientific thinking from hygiene and microbial deprivation hypotheses (our old friends) to a biodiversity hypothesis has taken almost 30 years. The Finnish Allergy Programme (2008–2018) was initiated to test modern thinking and prevent allergies by turning an *avoidance strategy* into a *tolerance strategy* and promoting *allergy health*. Severe allergic conditions were emphasised rather than mild problems, in order to use healthcare resources more efficiently. It was also recognised that for mild and occasional symptoms there is no "law of escalation" if nothing is done.

NATURAL STEP IN THE FINNISH ALLERGY PROGRAMME 2008-2018



Consider a natural step. The biodiversity hypothesis suggests that contact with natural environments enriches the human microbiome, promotes an immune balance and protects from allergy. New types of interventions and follow-ups are needed to test the benefits of nature connections - what we eat, drink, touch or inhale - for the human microbiome, immune regulation and clinical manifestations. Allergy health may be promoted through a natural step, resetting the connection between humans and the natural environment, the original home of *Homo sapiens*.

Create new initiatives. The ten-year Allergy Programme ends in 2018, but we can already conclude that revisiting the allergy paradigm has led to actions relevant to healthcare and society as a whole. In Finnish society, the burden of allergy and asthma has started to decline: there is less medicalisation, the severity of asthma, for example, has significantly decreased, and signs are emerging of a slowing down of the epidemic. Experience shows that medical communities and societies can lessen the disability and costs caused by these disorders and improve public health. The quickly urbanising developing countries have a special challenge as their allergy and asthma epidemic is quite recent and effective preventive strategies have been lacking.

It is intriguing to think that the prevention of allergy and asthma may also show the way to prevent many other non-communicable diseases which are similarly on the rise in urban communities. ●

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References

- Asher I, Haahtela T, Selroos O, *et al.* Global Asthma Network Study Group. Global Asthma Network survey suggests more national asthma strategies could reduce burden of asthma. *Allergol Immunopathol (Madr)* 2017; 45:105–114.
- Haahtela T, Herse F, Karjalainen J, *et al.* The Finnish experience to save asthma costs by improving care in 1987-2013. *J Allergy Clin Immunol* 2017;139:408–414.
- Haahtela T, Holgate S, Pawankar R, *et al.* The biodiversity hypothesis and allergic disease: World allergy organization position statement. *World Allergy Organization J* 2013; 6:3.
- Haahtela T, Valovirta E, Bousquet J, *et al*, and the Allergy Programme Steering Group. The Finnish Allergy Programme 2008-2018 works. *Eur Repir J* 2017, in press.
- Haahtela T, von Hertzen L, Mäkelä M, *et al.* Finnish Allergy Programme 2008–2018: time to act and change the course. *Allergy* 2008;63:634–45.
- Hanski I, von Hertzen L, Fyhrquist N, *et al.* Environmental biodiversity, human microbiota and allergy are interrelated. *Proceedings of the National Academy of Sciences* 2012; 109:8334–8339.
- Johansson SGO, Haahtela T (eds). Prevention of Allergy and Allergic Asthma. WAO Project Report and Guidelines. *Chemical Immunology and Allergy.* Karger 2004:1–211.
- von Hertzen L, Hanski I, Haahtela T. Natural Immunity: Biodiversity loss and inflammatory diseases are two global megatrends that might be related. *EMBO reports* 2011;12:1089–1093.
- von Hertzen LC, Savolainen J, Hannuksela M, *et al.* Scientific rationale for the Finnish Allergy Programme 2008-2018: emphasis on prevention and endorsing tolerance. *Allergy* 2009;64: 678–701.
- Selroos O, Kupczyk M, Kuna P, *et al.* National and regional asthma programmes in Europe. *Eur Respir Rev* 2015;24:474–83.