

## Hygiene

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"Man does not live by soap alone; and hygiene, or even health, is not much good unless you can take a healthy view of it -- or, better still, feel a healthy indifference to it." - Gilbert K. Chesterton

Now, I'm not saying that hygiene isn't important! I nag my kids like any other mother about "worms and germs" when they fail to wash their hands after going to the loo. Historically, the realization that infection was caused by germs in the environment etc (rather than exposure to oxygen as previously believed) by Louis Pasteur and Joseph Lister in the mid 1800's, was one of the most important things to happen in the history of medicine. Optimal hygiene is at the top of the World Health Organisation's wish list for developing countries, where millions of people die worldwide from polluted water.

However, in the UK, hygiene has become a sensationalist fad with some unfortunate consequences. Let's look at some facts:

- Allergy rates have tripled over the past decade ...and not all of that is due to better diagnosis
- About a third of adults are allergic to something
- Allergy rates amongst children are rapidly increasing too
- Allergic and immune conditions are almost unheard of in developing countries where conditions are often unsanitary
- Asthma was very rare prior to industrialisation, but has continued to rise despite our environment being far cleaner than during the Industrial Revolution.
- Asthma is significantly less common in children who go to day care nurseries
- Allergic conditions such as hay-fever and eczema are commoner in first born children and small families
- Immigrants from developing countries are increasingly at risk of allergic conditions, the longer they live in developed countries.

Why do scientists think this is happening?

This phenomenon is called the 'hygiene hypothesis', where increasing evidence points to exposure to general dirt and germs in early life being protective against allergic and immune diseases (where the body's immune system becomes over active and turns against the body itself causing diseases such as inflammatory bowel conditions, diabetes and Multiple Sclerosis)

It's thought that these general germs stimulate some of the body's immune cells to become 'memory cells'. These memory cells calm down the 'fighter' immune cells in the body, stopping them responding too strongly to stimuli. This prevents inappropriate reactions which could otherwise lead to allergies and immune diseases.

That means that the child with lots of elder siblings has been open to infections, bugs and germs and 'lurgies' in plenty. Their memory cells are well-stimulated and their immune system knows what to react to and what to ignore.

The role of actual infections in preventing allergic conditions is not at all clear. We do know that preschool children are 'meant to have' a multitude of viral infections per year and that this settles down considerably once the child gets to school age. This is for good reason, as this stimulation of the immune system with minor infections primes the body's immune cells to be in a position to fight more serious infections with greater ease. It's not at all clear if having these infections has anything to do with allergies though.

What we certainly know is that general, day to day 'organic dirt' early on in life, rather than urban filth from chemicals and stagnant house dust, is extremely beneficial. Many mothers dutifully sterilise bottles and feeding bowls for their baby. That's essential for a small baby, but it is pretty counterproductive for an eight month old who is meanwhile happily sucking their older brother's outdoor shoe and will be none the worse for it. A lolly dropped on the kitchen floor is best rinsed under the tap then popped straight back in. Kids who eat

'farmyard' dirt and roll around in the countryside muck are actually the least allergic kids of all, and there is no evidence that they are less healthy in any other way either.

It has long been known that excess hygiene is counterproductive, but we now have some laboratory evidence. Californian researchers have recently found that the 'natural skin flora' (ie normal germs that live on the skin, in the nose etc) produce a natural substance called LTA which keep skin cells in check, stopping them producing an excessive inflammatory reaction when there is a cut or a graze. It doesn't hinder necessary inflammation but controls it so it doesn't get excessive, slowing down healing. We don't want to wash those germs off as there is a natural symbiotic relationship between us and them, much as in the gut where we need the healthy gut germs to keep a healthy balance.

There is even evidence that the use of antibacterial cleaning agents is linked to the development of asthma, hence in part my dislike of the current advert on TV showing a bit of bloodied chicken being draped over a kitchen work-surface and then a pretty little poppet putting down her snack on the gore (as if!). We are urged to spray an antibacterial spray over the table, and let her dunk her treat in benzyl-C12-18-alkyldimethyl instead – good idea? I think not... Soap and water are considered good enough in NHS facilities, so why not at home?

Use of repeated antibiotics in young children has also been linked to allergic conditions, especially if there is a family history of allergy. None of my three young children have ever had a course of antibiotics – it's not that I don't believe in them as they are absolute life-savers, but they should be kept for true bacterial infections, not used for lingering viral 'lurgies'. GP's spend much of their time trying to explain why children with sore throats, sore ears, snotty noses and throaty coughs don't need antibiotics, but many parents persist in asking for antibiotics in the misguided belief that they will help.

Parents worry hugely about their children's immune systems and infection in general. They clean and scald and sterilise and disinfect to

try to prevent any germs passing their children's lips. However, nature has made us strong beasts, and even small babies cope well with the avalanche of germs that assault their immune systems and inhabit their bodies within hours of being born.

There is increasing evidence that the care we lavish on our children can be very harmful, in that we are unwittingly preventing their highly honed immune systems coping normally with the very germs that we try to banish. Exiling disinfectant sprays to the loo is a far better thing for our children's wellbeing!