

Discussion – Allergies

Question: Are allergies becoming more common?

Do you think the prevalence of allergies has increased in the world population in the last 50 years? If so, why might this be?

Discussion points

How would you decide whether allergies have increased or not?

- Look at the number of people diagnosed with allergies at various time points over the last 50 years in different countries, both developing and developed.
- Look at the prevalence of allergies within different communities (e.g. rural and urban, rich and poor etc.) within a country.

The students could be encouraged to think about how to best represent the data, for example, which types of graphs would be most helpful (e.g. bar graphs for different countries, colour-coding a map of the world by allergy prevalence, pie charts showing prevalence of different types of allergies etc.)

Facts to consider for the next two questions:

- Allergies are far more common in most western countries than in the developing world, and are more common in cities than in rural areas.
- Studies show that allergies increase among immigrants who move to the west.
- Where western-style modernisation takes place, allergies seem to increase e.g. in the early 1990s a study showed that allergy rates were much higher in what was West Germany than in East Germany. However, a later study showed that four years after reunification, hayfever rates in the former East German city of Leipzig more than doubled.

Why might asthma and other allergies be less prevalent in developing countries?

- Is it that people aren't being diagnosed, as they don't have enough doctors and people living in rural areas rarely go to a doctor?
- Is asthma being masked by other, more serious, illnesses, so it never gets diagnosed?
- In developing countries are people becoming more aware of every little sniffle and wheeze, which makes the difference between developing and developed countries seem bigger than it really is?
- Are there some fundamental differences in lifestyle which protect people in developing countries from developing allergies? (see below)

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On the other hand, why might people in developed countries be more prone to asthma and other allergies?

- People in western countries are exposed to more dust mites and other allergy triggers with the increase in plush furniture and carpeting, plus the reduced air flow as a result of double glazing and proper insulation.
- Western countries grow a lot more crops, and of different kinds to those in developing countries, so could asthma and hayfever be linked to the type of pollen people are exposed to?
- Western farmers use a lot more chemicals (pesticides, herbicides and fertilizers) on their crops, so this may be causing more allergies by people breathing them in and eating them?
- Could allergies be linked to pollution, especially air pollution in the case of asthma?
- What about diet and exercise? Could our unhealthy lifestyle in the west cause us to be more susceptible to allergies?
- Nut allergy and other food allergies are on the rise (a UK study found that the number of children with a peanut allergy tripled between 1989 and 1996), but could this be a 'false' increase as we are eating foods we didn't come across years ago?
- Smoking – both active and passive – may have an affect.
- Fewer people in the west tend to be breastfed compared to those in developing countries – could this be a factor?
- What about elimination of childhood diseases by vaccines, antibiotics and improved hygiene?
- Or could it be that we're not exposed to every-day harmless microbes any more due to our obsession with cleaning and killing germs? This is what the latest evidence suggests could be the main cause of allergy increases. However, we don't yet know which microbes are most important.
- Don't forget about genetic factors. These are also known to play a part in susceptibility to allergies.

Reference: New Scientist, 16th April 2005, p35-39

The discussion was devised by Rebecca Hamer of the **Wellcome Trust Centre for Human Genetics**, at the University of Oxford.