

Allergy Prevalence: Useful facts and figures

Allergy Prevalence

Globally:

- The World Allergy Organisation (WAO) estimate of allergy prevalence of the whole population by country ranges between 10 - 40% (Pawankar R, et al, 2013)
- Allergy is a very common ailment, affecting more than 20% of the populations of most developed countries (Pawankar R, et al, 2013)
- Allergy is the most common chronic disease in Europe. Up to 20% of patients with allergies live with a severe debilitating form of their condition, and struggle daily with the fear of a possible asthma attack, anaphylactic shock, or even death from an allergic reaction (EAACI, 2016)
- More than 150 million Europeans suffer from chronic allergic diseases and the current prediction is that by 2025 half of the entire EU population will be affected (EAACI, 2016)
- Seven times as many people were admitted to hospital with severe allergic reactions in Europe in 2015 than in 2005 (Nwaru BI & Group., 2014)
- The avoidable indirect costs of failure to properly treat allergy in the EU is estimated to range between 55 and 151 billion Euro per annum (EAACI, 2016)

In the UK:

- The UK has some of the highest prevalence rates of allergic conditions in the world, with over 20% of the population affected by one or more allergic disorder. (M. L. Levy, 2004)
- A staggering 44% of British adults now suffer from at least one allergy and the number of sufferers is on the rise, growing by around 2 million between 2008 and 2009 alone. Almost half (48%) of sufferers have more than one allergy – that is around 10 million people (Foods Matter, 2010)
- The least likely to suffer from allergies are pensioners – with a 30% allergy rate among this group whereas women and younger adults (under 35) are the most likely to claim an allergy- around 50% (Foods Matter, 2010)
- In the 20 years to 2012 there was a 615% increase in the rate of hospital admissions for anaphylaxis in the UK (Turner PJ, 2015)
- The percentage of children diagnosed with allergic rhinitis and eczema have both trebled over the last 30 years (Gupta R, 2007)
- Between March 2013 and February 2014 there were a total of 20,318 finished admission episodes⁴ (FAEs) with a primary diagnosis of an allergy. This represents a 7.7% increase from 18,862 for the previous 12 months. (HSCIC, 2014)
- In the same year, 19.2% of emergency admissions were for anaphylactic reactions and 19.2% were for 'Other' allergic reactions. The lowest number of emergency admissions was for allergic rhinitis (1.0%). (HSCIC, 2014)
- In the UK, allergic diseases across all ages costs the NHS an estimated £900 million a year, mostly through prescribed treatments in primary care, representing 10% of the GP prescribing budget. (Venter, 2009)
- Almost a third of allergy sufferers have had to change their lifestyles to reduce their allergic reactions. Actions range from keeping their home extra clean (11%) to using special bedding (11%) (Foods Matter, 2010)

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Types of Allergy

Food Allergy:

- It is estimated that between 1-10% of adults and children have a food hypersensitivity. However as many as 20% of the population experience some reactions to foods which make them believe they do have a food hypersensitivity (The Association of UK Dietitians (BDA), 2015)
- Around 11-26 million members of the European population are estimated to suffer from food allergy. If this prevalence is projected onto the world's population of 7 billion, it translates into 240-550 million potential food-allergic people; a huge global health burden (Pawankar R, et al, 2013)
- Food allergies are a cause of particular concern in young children, where the incidence of food allergy (often life threatening) is estimated to be greater in toddlers (5-8%) than in adults (1-2%) (Pawankar R, et al, 2013)
- Food allergy affects 3-6% of children in the developed world (3). In the UK, it is estimated that the prevalence for food allergy is 7.1% in breast-fed infants, with 1 in 40 developing peanut allergy and 1 in 20 developing egg allergy (BSACI, 2011)

Cow's Milk Allergy:

- Symptoms suggestive of cow's milk allergy based on self-reports vary widely, and only about one in three children presenting with symptoms is confirmed to be cow's milk allergic using strict, well-defined elimination and open challenge criteria. With these criteria, cow's milk allergy is shown to affect between 1.8% and 7.5% of infants in the first year of life. This may be an overestimate as Venter and colleagues confirmed cow's milk allergy, using the double blind placebo controlled food challenge for diagnosis, in only 1.0% of their population compared with a double prevalence of 2.3% using an open food challenge. Clinicians should therefore anticipate that between 2-3% of children having cow's milk allergy.
- The prevalence of CMA in children living in the developed world is approximately 2% to 3%, making it the most common cause of food allergy in the paediatric population. Only among breastfed infants is the prevalence lower (0.5 %). These numbers most likely refer to IgE mediated CMA, while the prevalence of non-IgE-mediated CMA is not well known (Lifschitz C, 2015)
- In regards to severe allergic reactions, cow's milk comprises 10% to 19% of food-induced anaphylaxis cases seen both in the field and in emergency departments in paediatric and mixed age populations. It is the third most common food product to cause anaphylaxis, following peanut and tree nuts (Kattan, 2011)

Peanut and Tree Nut Allergy:

- The prevalence of peanut allergy among children in Western countries has doubled in the past 10 years, and peanut allergy is becoming apparent in Africa and Asia (Du Toit, 2015)
- In the UK, the prevalence of tree-nut allergies is 1.76% (Immune Tolerance Network, 2011)

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- Extrapolating the currently estimated prevalence, this translates to nearly 100,000 new cases annually (in the United States and United Kingdom), affecting some 1 in 50 primary school-aged children in the United States, Canada, the United Kingdom, and Australia (Fleischer, et al., 2015)

Skin Allergy:

- There are eight million people living with a skin disease in the UK. Some are manageable, others are severe enough to kill. (British Skin Foundation, 2016)

Atopic Eczema:

- With a life time prevalence of 15-30% in children and 2-10% in adults, the incidence of AE has increased by two- to threefold in industrialized countries during the past three decades (Pawankar R, et al, 2013)
- In 45% of children, the onset of Atopic Eczema occurs during the first 6 months of life; during the first year 60% of these children are affected, and 85% are affected before the age of five (Pawankar R, et al, 2013)
- About 50% of children who have started the disease in the first weeks or months of life (early onset) will have developed allergen sensitization by the age of 2 years (Pawankar R, et al, 2013)
- Approximately 40% of infants and young children with moderate to severe Atopic Eczema have food allergy, with hen's egg, cow's milk, soy and wheat accounting for about 90% of allergenic foods
- Eczema affects both sexes equally and usually starts in the first months of life. In the UK, 15-20% of school-aged children and 2-10% of adults will be affected by the condition at some stage (Scottish Intercollegiate Guidelines Network (SIGN), 2011)

Respiratory Allergy

Allergic Rhinitis (Hay fever):

- Allergic rhinitis is the most common form of non-infectious rhinitis, affecting between 10% and 30% of all adults and as many as 40% of children (Pawankar R, et al, 2013)
- AR accounts for 16.7 million physician office visits annually (Pawankar R, et al, 2013)
- In Europe, the European Community Respiratory Health Survey established the prevalence of AR as being from 4% to 32% (Pawankar R, et al, 2013)
- More than 40% of patients with AR have asthma, and more than 80% of asthmatic patients suffer concomitant rhinitis. Also, patients with rhinitis have an increased risk of developing asthma (Pawankar R, et al, 2013)

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- Up to 57% of adult patients and up to 88% of children with AR have sleep problems, including micro-arousals, leading to daytime fatigue and somnolence, and decreased cognitive functioning (Pawankar R, et al, 2013)
- The prevalence of rhinitis symptoms in the International Study on Asthma and Allergies in Childhood (ISAAC) varied between 0.8% and 14.9% in 6-7 year olds and between 1.4% and 39.7% in 13-14 year olds. Countries with a very low prevalence include Indonesia, Albania, Romania, Georgia and Greece. Countries with a very high prevalence include Australia, New Zealand and the United Kingdom (WAO, 2017)
- National surveys show prevalence rates of rhinitis of between 5.9% (France) and 29% (United Kingdom) with a mean of 16%. Perennial (persistent) rhinitis is probably more common in adults than in children (WAO, 2017)

Asthma:

- It is estimated by the World Health Organisation that 300 million individuals have asthma worldwide, and that with current rising trends this will reach 400 million by 2025. Approximately 250,000 people die prematurely each year from asthma; almost all these deaths are avoidable (Pawankar R, et al, 2013)
- It appears that at least 60% of patients with asthma suffer from rhinoconjunctivitis, whereas between 20%–30% of patients with allergic rhinitis also have asthma (Valovirta, 2011)
- It is estimated that allergic asthma affects 5%–12% of people in Europe
- Allergy is the cause of asthma in about 80% of cases. Furthermore, according to the WAO, about 50% of asthmatics older than 30 years of age are concomitantly allergic. Younger asthmatics have an even higher incidence of allergies (Valovirta, 2011)
- 5.4 million People in the UK are currently receiving treatment for asthma: 1.1 million children (1 in 11) and 4.3 million adults (1 in 12). (Asthma UK, 2017)
- In 2014 (the most recent data available) 1216 people died from asthma in the UK (Asthma UK, 2017)
- Asthma attacks hospitalise someone every 8 minutes; 185 people are admitted to hospital because of asthma attacks every day in the UK (a child is admitted to hospital every 20 minutes because of an asthma attack). (Asthma UK, 2017)
- In the UK, 69% of parents or partners of parents of asthmatic children report having to take time off work because of their child's asthma, and 13% had lost their jobs (Valovirta, 2011)
- The prevalence of asthma in the UK is 16.1% - 18.4% in Scotland; 16.8% in Wales; 15.3% in England; 14.6% in Ireland (Scottish Intercollegiate Guidelines Network (SIGN), 2013)
- 50% of all annual healthcare costs for asthma relate to the most severely affected 20% of the asthma population (Scottish Intercollegiate Guidelines Network (SIGN), 2013)

Drug Allergy:

- Drugs are amongst the first three leading causes of anaphylactic reactions (Pawankar R, et al, 2013)
- The world population at risk for penicillin anaphylaxis has been estimated to be from 1.9 million to 27.2 million and for radio-contrast media from 22,000 to 100,000 (Pawankar R, et al, 2013)
- Hospital Episode Statistics from 1996 to 2000 reported that drug allergies and adverse drug reac-

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tions accounted for approximately 62,000 hospital admissions in England each year. There is also evidence that these reactions are increasing: between 1998 and 2005, serious adverse drug reactions rose 2.6-fold. Up to 15% of inpatients have their hospital stay prolonged as a result of an adverse drug reaction (NICE, 2014)

- About half a million people admitted to NHS hospitals each year have a diagnostic 'label' of drug allergy, with the most common being penicillin allergy (NICE, 2014)

Venom Allergy (Hymenoptera Venom Allergy):

- The prevalence of self-reported systemic Hymenoptera sting reactions among adults ranges from 0.5% to 3.3% in the US while European epidemiological studies report the prevalence of systemic reactions between 0.3% and 7.5% (Gelincik A, 2015)
- Estimates of the prevalence of subjects who have experienced immediate systemic reactions to insect stings vary from 1% to 7% of the general population (Heddle R, 2015)
- The prevalence of allergic systemic reactions is between 0.3-7.5 percent in Europe while in the USA, it is 0.5-3.3%. Allergic systemic reactions are less common in children, ranging from 0.15-0.8% (Pawankar R, 2013)
- There are no precise figures on the prevalence in childhood. However, we do know that children under twelve have a lower risk than adults of recurring generalised reactions. Adults 40 years of age and over with other conditions such as cardiovascular disease or asthma have an increased risk of experiencing severe allergic reactions to insect stings (Zuberbier, 2016)

Occupational Allergy:

- Occupational allergy refers to those disorders or conditions that are caused by exposure to substances in the work environment and in whose pathogenesis allergic factors are determinant (The Association of UK Dietitians (BDA), 2015)
- Work related-asthma is the most common type of occupational pulmonary involvement. Although its prevalence has not been reported definitely, it is estimated that up to 25% of adult asthma patients have work related asthma. On the other hand, it is believed that attributable risk of occupational allergy in adult asthma is nearly 15% (Masjedi MR, 2016)
- As the most frequent occupational disease, the estimated OSD annual costs exceed \$1 billion worldwide (Masjedi MR, 2016)
- Occupational skin allergies prevalence is different in each sex but nonetheless accounts for nearly 90-95% of occupational skin diseases (Masjedi MR, 2016)
- Contact dermatitis is also associated with long-term consequences as it has been shown that 30-80% of affected individuals remain symptomatic even after quitting their job (Pawankar R, 2013)
- Follow-up studies of workers with occupational asthma have consistently documented that the condition is associated with a high rate of prolonged unemployment, ranging from 14%- 69% and a reduction in work-derived income in 44%-74% of affected workers (Pawankar R, 2013)
- The incidence rate of occupational anaphylaxis is estimated to be 0.05-2% worldwide, and is thought to be increasing (Masjedi MR, 2016) the workplace (Pawankar R, et al, 2013)

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Anaphylaxis:

- Previous studies on anaphylaxis epidemiology have reported an annual incidence rate of 1.5–50 per 100,000 person-years. However, the majority of the reports are from Western countries such as the US, UK, and Australia and whether this rising trend applies to other global regions or not needs investigation (Yang, et al., 2017)
- The overall case fatality ratio (the proportion of anaphylaxis that is fatal) is estimated at a fraction of 1%, or 1-5.5 fatal episodes from anaphylaxis per million of the population annually (Pawankar R, 2013)
- Peanut/tree nuts anaphylaxis is estimated to have a prevalence of 0.25% to 0.95% in the United Kingdom and United States paediatric populations, and appears to be on the increase in the last decade (Cianferoni, 2012)
- Anaphylaxis-type reactions occur in approximately 1 in 1000 of the general population. Anaphylaxis during general anaesthesia occurs in 1 in 10,000–20,000 anaesthetics. These patients may be denied general anaesthesia in the future unless a safe combination of drugs can be identified (NICE, 2014)

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