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IN ASSOCIATION WITH **THE CONVERSATION**

The inquest earlier this year into the death of Natasha Ednan-Laperouse from anaphylaxis after eating a Pret a Manger baguette that she was unaware contained sesame could lead to a change in labelling legislation. Indeed, a recent investigation found that undeclared allergens were present in a quarter of foods sampled. But a more fundamental issue is: why are more people than ever before experiencing severe food allergies?

As I explain in *Another Person's Poison: A History of Food Allergy*, strange reactions to food have long been known. The Ancient Greek physician Hippocrates (c460-370BC) described such reactions to various foods, including cheese. Strawberries caused Richard III to break out into hives. It is said he once sneakily consumed "a messe of strawberries", and then blamed his reaction on witchcraft orchestrated by one of his opponents, who was summarily beheaded. By the time Austrian physician Clemens von Pirquet coined the term "allergy" in 1906, many believed that food could trigger skin problems, asthma, gastrointestinal distress and even mental disorders.

In the 1930s, food allergy emerged as a distinctive sub-category of allergy. But it was also highly controversial. Although it was easy to identify the food at fault in anaphylactic reactions, such as the one that killed Natasha, these sudden reactions were rare.

Food allergists tended to focus instead on patients whose reactions were delayed, occurring up to 48 hours after eating the suspected food and, so, much more difficult to diagnose. These reactions were typified by symptoms such as eczema, diarrhoea, asthma, migraine and psychiatric problems, including depression and hyperactivity.

Many doctors, however, doubted the claims of experts that food allergy was responsible for much undiagnosed chronic illness. In fact, some were so unconvinced



Why are food allergies more common?

We don't yet know what is triggering the epidemic but it is vital that we find the causes, argues **Matthew Smith**

that they would refer patients complaining of chronic food allergy to psychiatrists, believing that their symptoms were psychosomatic.

The heated debates that would emerge during the post-war period about the prevalence of food allergy distracted researchers from investigating the root causes of the condition.

In the early 1980s, food allergy became a marginalised topic within medicine. Then, a new phenomenon emerged that forced doctors to take it seriously: peanut allergy.

In 1988, an article in the *Canadian Medical Association Journal*

described the case of a 24-year-old woman who died after eating a biscuit that contained peanut oil. Although one or two similar stories had been reported previously in newspapers, this was the first report made in a medical journal. It would not be the last.

By the 1990s, peanut allergy fatalities were commonplace. According to US charity Food Allergy Research and Education (FARE), rates of peanut and tree nut allergy tripled between 1997 and 2008 among American children.

As a result, food allergy became



associated with these severe, potentially fatal, allergies, rather than the chronic food allergies on which food allergists had previously concentrated.

Fare and other allergy charities successfully lobbied for better labelling, more peanut-free spaces (in schools, for instance) and the availability of life-saving epipens which administer a dose of epinephrine (a chemical that narrows blood vessels and opens airways in the lungs) to anyone suffering an anaphylactic reaction.

But they failed to convince scientists to conduct detailed investigations into why such allergies were increasing so rapidly.

On the one hand, this reluctance was understandable. There was a pressing need to provide new treatments and support to the increasing number of people suffering from severe food allergies. On the other, scientists were hesitant to investigate a condition that had long been considered a fad – a suspicious and divisive diagnosis that was too reliant on patient accounts for its justification.

While research continues to explore potential cures and treatments, not enough effort has been spent on exploring root causes. A number of controversial explanations have emerged, many of which have not been based on much scientific research.

One suggestion is the hygiene hypothesis, which argues that children grow up in excessively clean environments, meaning that their bodies struggle to distinguish between harmful pathogens and harmless proteins, such as those found in peanuts. Others point to cooking techniques, indicating that peanut allergy is more common in countries where peanuts are roasted, rather than boiled.

Infant feeding is also implicated, the most recent advice being that mothers with a family history of



Natasha Ednan-Laperouse died when she accidentally ate sesame. Below left, an epipen PAIGETTY

allergy should introduce peanuts early on. Increased use of soya (a relative of the peanut) in food production has also been suggested. But none of these explanations has proved completely convincing, leading to the emergence of even more controversial hypotheses.

The truth is that we simply don't yet know what is triggering the peanut allergy epidemic or increasing rates of food allergy. A chief reason for this is a lack of open-minded research into the causes of allergy. The explanations that materialise from such research might not be easy for people to accept if they indicate that food allergy is a byproduct of modern lifestyles, new diets or changes in how we interact with our environment.

Investigating the causes of food allergy will not be easy, but if medicine is to prevent more tragedies such as that which happened to Natasha, it will be essential.

Matthew Smith is a professor of health history at the University of Strathclyde

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Scientists were hesitant to study a condition that had been thought a fad

'I had postnatal depression as a new father. Mental health checks for dads should be expected'

By **Viren Swami**

New and expectant fathers will be offered mental health assessments if their partner is suffering from depression or anxiety, NHS England recently announced.

While it is vital that fathers whose partners are suffering get support, the plan still falls far short of what new fathers need. I should know. I was diagnosed with postnatal depression after my son was born and under the proposed plans, my symptoms would still be missed by the NHS.

Postnatal depression is a non-psychotic depressive disorder that can occur after

the birth of a child. Between 6 and 13 per cent of new mothers will suffer from postnatal depression, with symptoms including persistent sadness or low mood, feelings of hopelessness and worthlessness, loss of interest in activities that were previously enjoyed, and thoughts of suicide.

It results in poorer mother-child attachment, shorter breastfeeding duration and poor child development. In the UK, every case of maternal depression costs, on average, £74,000, with the bulk of this relating to the negative effects on

the child. There is now wider recognition that postnatal depression can also affect new fathers

– recent studies have suggested that between 8 and 11 per cent of new fathers suffer from postnatal

depression. Fathers with depression are also about 20 times more likely to consider suicide compared with non-depressed fathers. But this focus still ignores new fathers, like me, whose partners do not have a pre-existing mental health condition, such as anxiety or depression. Instead, a more holistic account of the mental health of new fathers would consider their previous history of mental illness and the psychological and social context of fatherhood. When new fathers get depressed, they are



still less likely than new mothers to have their symptoms caught and are more likely to go untreated.

In part, this may be because men are reluctant to disclose symptoms of mental ill health, especially if such disclosures are seen as inconsistent with ideals of masculinity. But it may also be because healthcare practitioners do not recognise depression in new fathers, or provide opportunities for them to raise concerns about their mental health.

In the UK, for example, the tradition of health visiting is heavily focused on

mothers and children, and some health visitors are reluctant to address postnatal depression in men.

As a result, fathers end up feeling overlooked following the birth of a child, and their experiences rendered invisible. The invisibility of depressive symptoms in new fathers is important, because it often forces men to manage their symptoms on their own, leaving them frustrated when they are unable to do so.

While the plans by NHS England are an important first step, there is a risk that many new fathers will continue to be

let down through under-diagnosis, or a lack of attention to the mental healthcare needs of new fathers.

Instead, what is needed is routine screening of new fathers for depression and other mental health conditions, so that all new parents are treated equally. This, in turn, requires that healthcare practitioners who are most likely to meet new fathers have the appropriate education, training and time to engage with fathers too.

Viren Swami is a professor of social psychology at Anglia Ruskin University

Saving rare animals and plants saves humans too

Trees and lizards may appear to have little in common, but both can be the source of revolutionary medicines, explains **Ross Piper**

The Pacific yew tree is a fairly small and slow-growing conifer native to America's north-west coast.

The Gila monster, in contrast, is a lizard with striking orange and black markings from the drylands of Mexico and the south-western US.

These are two very different organisms, but their fascinating connection is that both have given us drugs that have saved millions of lives.

Paclitaxel, from the bark of the Pacific yew, is so important for treating various cancers that it is one of the World Health Organisation's "essential medicines".

Exenatide, a synthetic version of a compound found in the saliva of the Gila monster, is an injected treatment used by as many as two million people with type 2 diabetes. It may also become a treatment for Parkinson's disease.

For many years, however, the production of paclitaxel meant stripping the bark and killing rare and slow growing Pacific yews. This destruction continued until 1994, when chemists came up with a way of synthesising paclitaxel.

Thankfully, producing exenatide does not require using thousands of Gila monsters, but despite huge sums generated by sales of the drug, the delicate habitats of this lizard remain threatened by development and climate change.

When it comes to discovering medicinal products found in nature, we have barely scratched the surface. With every habitat that falls to the chainsaw or disappears under the plough or concrete, we impoverish nature and deprive ourselves of potential medicines. Conservative estimates suggest that we are losing one important drug every two years.

Perversely, this comes amid a new golden age of discovery. Tools such as DNA sequencing can reveal "new" species hiding in plain sight, while advances in mass spectrometry, genomics and genetic engineering have allowed us to harness their molecular diversity without excessive harvesting of wild specimens.

Although the potential of natural products is undisputed, the enormous amount of effort and resources required to bring a promising molecule to market is off-putting.

Not only that, but unscrupulous "bioprospectors" have illegally collected living material, often from developing countries. These predatory practices prompted legislation

that now hinders legitimate natural products' research that seeks to protect biodiversity.

Governments around the world need to support research efforts and collaboration between scientific disciplines with investment and infrastructure. Building trust with communities that live where natural products are sourced is also critical.

These steps could create a system of research and development with a greater appreciation of nature's value.

Ultimately, the equal sharing of benefits derived from drug discoveries will help conserve nature. However, the clock is ticking and with every day that passes species and their unique chemistry are lost for ever.

Ross Piper is an entomologist, zoologist and visiting research fellow at Leeds University. He worked on this article with colleagues at the universities of Edinburgh, Connecticut, Stirling and York.

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