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Fact Sheet: Preventing allergies in babies and small children

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Sneezing, itching, constantly wiping a runny nose: allergies can really make some days miserable. The most common allergic reaction in babies and small children is eczema, with patches of red, itchy skin. Allergies have become very common, although no one knows exactly why. Although most children still do not develop allergies, if one or both parents have an allergy, the chances of their child developing an allergy are quite high. But there are some things that could help reduce that risk. Our fact sheet will help sort out some of the myths and facts about allergies.

Which children are at high risk of developing an allergy?

The biggest risk factor for developing an allergy is genetics: allergies definitely run in families. Only 1 out of 10 babies eventually develop an allergy if neither of their parents has allergies. But if one or both parents have an allergy, then their baby is more likely than not to also develop an allergy at some point: up to 7 out of 10 of their children (or 70%) could develop allergies.

One common allergy is hay fever, which happens in the springtime and summer (seasonal allergic rhinitis). The same symptoms, including sneezing, a runny nose and watery eyes can occur all year round too (perennial allergic rhinitis). Other common allergic problems include skin rashes and inflammations. Atopic eczema (also called atopic dermatitis or just eczema) is a very common skin condition. Eczema is an itchy skin rash that can affect as many as 2 out of 10 children at some point (20%). However, in 5 to 7 out of 10 children with eczema it will clear up by the time they are 15 years old (a remission rate of between 50 and 70%).

Atopic eczema is most likely to start before a baby is 2 years old. The rash usually appears on the baby's cheeks, arms and legs. Later, atopic eczema tends to spread to the skin behind the knees, inside the elbows and in the folds of the neck. But it can affect any area of the body.

Children of parents who smoke are also more likely to have problems with coughing, wheezing and asthma. Asthma and allergies are sometimes closely related.

Is there anything we can do during pregnancy to reduce the baby's allergy risk?

Pregnancy is a very good time to quit smoking: Unborn babies may be harmed by smoking, and having parents who do not smoke is good for babies and children for many reasons. You can read more about quitting smoking here (URL: http://www.gesundheitsinformation.de/quit-smoking.311.56.en.ht , including information for pregnant women.

Food allergies are among the most common allergies. Food sensitisation may be the first step in the development of an allergy. This means that the baby becomes so sensitive to even a tiny amount of food that they have an allergic reaction to it, like a skin rash. Some people believe that, by avoiding certain foods in pregnancy, a mother may help prevent the baby becoming sensitised to foods and developing an allergy later on. In avoidance diets, a person avoids eating one or more of the foods that often cause allergies, such as cow's milk.

However, there is no special "pregnancy diet" that has been proven to reduce the risk of allergies in babies or children. In fact, the small amount of good research on avoidance diets in pregnancy not only showed that they had no positive effects; they showed that not eating certain foods can even be harmful. Women gained less weight during pregnancy, which increased some risks for the baby associated with pregnancy and birth.

Another option is to take probiotic supplements in the last few weeks of pregnancy, and possibly continue to take them while breastfeeding too. These supplements come in the form of tablets or liquids containing special bacteria that are found in dairy products like yoghurt. Probiotics are often called "friendly bacteria" because they may help to protect people against allergies later in life, as well as against the causes of some stomach and bowel problems.

It is very early days, though, for research on probiotic supplements in the prevention of allergies. Researchers found out that probiotic supplements may help to prevent atopic eczema, although more research is needed because there has been no clear outcome so far. It is also not yet known whether only taking them during pregnancy would be enough, or whether women would need to keep taking them while they are breastfeeding. Some researchers looked at the effect of using supplements in newborn babies as well, but it is too soon to know whether this would be beneficial. Researchers believe that probiotic supplements are safe for pregnant women and babies.

What about breastfeeding?

Breastfeeding is important to babies for many reasons,

such as increasing closeness between mother and child and lowering the risk of gut infections in babies. If you have allergies yourself, breastfeeding will not pass the allergies on to your baby. If you cannot breastfeed, that will probably not increase your baby's risk of eczema or other allergy. Infant formula can sometimes cause an allergy, but that is very uncommon.

Although breastfeeding women will often notice that their baby reacts badly after they themselves have eaten a particular food or had cow's milk or another drink, a few trials of avoidance diets for breastfeeding women did not show that avoiding certain foods would help prevent the development of allergies. However, if your baby is definitely reacting to something, it might help to avoid that particular food or drink.

In some trials women also took probiotic supplements while breastfeeding, but the women had usually already started taking them in the last few weeks of pregnancy. It is too soon to know whether taking these supplements is worthwhile. As soon as more research becomes available, we will report on it.

If we need to use a formula, which is less likely to lead to allergies?

If a baby cannot be totally breastfed, there are several options. The most usual alternative is a formula based on cow's milk. Other options often used to try and avoid allergies are soy-based formula or so-called hydrolysed formula. A hydrolysed formula is one where a protein in either cow's or soy-based milk has been broken down into tiny parts. Proteins are the usual cause of allergies. The hope is that by disrupting this protein, allergies will be avoided.

Hydrolysed formulas are usually more expensive than ordinary formula. Using a hydrolysed formula instead of an ordinary cow's milk formula might cause fewer allergies, but again, research results have been inconsistent, so it is too soon to be sure.

Many people think that soy-based formulas will be better, because they do not have cow's milk in them. However, soy-based formulas have not been shown to prevent allergies. What is more, some of the babies who have these formulas will develop an allergy to soy products. You can read more about the research on soy formulas here (URL: http://www.informedhealthonline.org/index.38.en.html) .

Another option is formulas with added probiotics or prebiotics. Prebiotics are substances which could encourage the growth of probiotics in the gut or bowel. Research suggests that probiotic formulas might have lead to fewer allergies than ordinary cow's milk formula, but the research results have been inconsistent. There is also a small amount of research to suggest that formulas with prebiotics might help, but again, it is too soon to be sure. You can read more about that research here (URL: http://www.informedhealthonline.org/index.362.en.html) , and we will update this information if more research becomes available.

When and how is it best to introduce solids and cow's milk into our baby's diet?

There is some evidence to suggest that delaying the introduction of solids might prevent or delay eczema. But there is no research that has pinpointed exactly the best time and way to start introducing solids. The most commonly researched time is six months. It is often suggested that foods that are more likely to cause major allergic reactions (like fish, eggs and peanuts) be introduced after a year or even after 3 years. Some people argue the opposite: that exposing babies to these foods early in life might help them become more tolerant, but this has not been proven.

Different foods are responsible for the most common allergies in different countries. In Europe, the most common solid food allergies are caused by eggs, fish, seafood, nuts and soybeans. Sensitivity or allergy to cow's milk and wheat flour is also common. Food allergy is probably only an important factor for some children with eczema. If a food allergy is responsible, that eczema will probably improve in time.

Allergies can develop gradually over time: the baby or child becomes sensitive to a food and then the reaction gets stronger until they have an actual allergy. For this reason, if a child is reacting to a food with allergy symptoms, stopping that food is an option that in theory might prevent the allergy developing.

Does vaccination cause allergies?

A theory was developed to try to explain the major increase of allergies in recent decades. Called "the hygiene hypothesis", this theory suggested that perhaps babies needed to be exposed to infectious diseases for their immune systems to develop in a good way.

According to this theory, childhood vaccination and/or the lack of early exposure to the infections that vaccines aim to prevent, stop children from developing healthy immune systems. However, this theory has not been confirmed by research, and the true picture is probably not so simple.

Researchers have systematically looked for and analysed large studies that recorded both vaccinations and allergies or asthma. There was no strong consistent link between vaccination and allergies. The cause or causes of the worldwide increase in allergies is not yet clear, but vaccination does not appear to be the problem.

What about family pets and changes around the house?

If parents have allergies, they often do not have house pets and may already have tried to organise their home to reduce the allergens. If people do not have allergies already, removing pets has not been proven to prevent allergies developing. The same is true of other changes that people make around the house, like removing carpets or washing bedding very often to reduce the number of house dust mites. There is even a suggestion from some studies that having pets like dogs could decrease the risk of eczema, but that has not been proven conclusively either.

Although it seems logical that working very hard to lower allergens around the house might prevent allergies, doing this has not actually been proven to make things better or worse. This could be because it is not possible to remove allergens completely: there will always be dust mites, no matter how often or how thoroughly you clean.

Not smoking in the house is the main thing that is likely to help your child avoid allergies and other health problems. If research becomes available that shows that there are other specific things you can do around the house to make it less likely that your child will develop allergies, we will report on it.

Is there anything else that could help?

Staying informed about allergies will be worthwhile if important new knowledge emerges. Paying attention to when your child's body is over-reacting to something so that you can try to avoid it before an allergy develops might pay off too.

But you do not have to feel over-stressed about it, or feel guilty if your child does eventually develop an allergy, especially as there are now good treatments for the main allergic diseases. In fact, being too anxious about allergies can itself make the situation worse: stress and worry makes allergy symptoms worse for many people, and the allergy symptoms cause stress and unhappiness too. So taking care of yourself and trying to be more relaxed about life is itself an important part of living well with allergies. If you think your baby or child has signs of an allergy, then consulting your doctor and getting the diagnosis and treatment right is important.

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Glossary

bacteria

Bacteria are micro-organisms that, unlike viruses, can exist on their own. Viruses, on the other hand, can only exist inside a living cell. Most bacteria are not harmful to people, and some are actually beneficial. Bowel bacteria support bowel health. However if they get into the urinary system, they can cause an infection there. Doctors prescribe antibiotics for illnesses where bacteria need to be stopped or killed off. Immunisation is also possible against some bacterial infections, such as diphtheria, tetanus or whooping cough.

evidence

Evidence is what we call scientific proof from well-conducted, good-quality scientific trials that have been carefully designed to answer specific questions. Depending on the types of questions, different scientific research methods (types of study) are most appropriate to find reliable answers to these questions. Randomized controlled trials (RCTs), for example, are the best way to get reliable evidence on the effectiveness of medical treatments (interventions). This type of study, however, is not the best form of evidence for all possible questions, and does not provide the best answers to all kinds of questions, either. Epidemiological studies, for example, are very suitable for establishing well-founded proof for the spreading of a disease in the population.

allergy

An allergy is the body’s overly sensitive reaction to a foreign substance. The body produces antibodies just as it would if the substance were a germ, although it is not dangerous to the body. The symptoms of the allergy partly depend on the substance causing it, the allergen. People with allergies often have symptoms like running nose, watery eyes, itching, rashes, stomach and bowel problems or asthma. Typical allergens are pollen, animal hair, proteins in certain food or house dust mite excrement.

asthma

Asthma (asthma bronchiale) is a permanent (chronic) disease with symptoms like coughing and breathlessness often occurring in acute attacks. In asthma, the airways are overly sensitive. The development of asthma is often associated with an overreaction to foreign substances or physical stimuli, frequently in connection with an allergy.

vaccination

Vaccination involves stimulating the body's production of antibodies to a particular virus or bacteria, so that the person has increased resistance if they are exposed to the real infection. A vaccine aims to launch the body's defence system, without actually causing the disease. Depending on the vaccine, it could take some time after vaccination to develop immunity. With most vaccines, more than one vaccination is needed. Sometimes the immunity from a vaccine lessens over time. That means there are some types of vaccination that need be repeated after a few years to stay active.There are several types of vaccines. Some vaccines are "inactivated" or "killed", which means that even though they are made from a virus, for example, no "live" part of the virus remains. That means the vaccine itself cannot cause infection. Other vaccines are "live attenuated vaccines". This means that the virus has been made so much less infective than the real virus, that it should not be able to cause symptoms.

immune system

The immune system is the body’s defense system and its task is to protect the body against germs or degenerated cells (like cancer cells). The immune system is very complex and has not been understood in every detail yet. There are two components: the cellular immune defense (for example “scavenger cells” and “killer cells”) and the complement system (“antibodies”, for example).

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You can find a list of the evidence and other scientific literature on which this information is based at **www.informedhealthonline.org**

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