

Understanding the Risk of Developing Food Allergy

A new study* looks at what may raise the risk that a child has food allergy. This study, called a meta-analysis, examined 190 studies (involving 2.8 million people) that each tried to answer the question of why a child may get a food allergy. Very few of these studies were trials designed to test cause and effect of something within a group of similar children, divided by chance. Most were studies that watched “real-life” to find things that differed over time between a group of kids known to have food allergy and a group that does not, trying to find a possible link. But, in these “real-world” types of studies, the risks that are found are much weaker in nature and not thought to be true causes. So, the type of study that the finding comes from does matter. Also, just having the risk does not mean a child will become food allergic.

What was found: There is no single cause of or risk for food allergy. The study found 342 risk factors for food allergy. These include risks that are both rare and common, a mix of things that a parent can and cannot control, and findings that had both high and low certainty. Certainty means how sure we are about a finding still being true if more studies are done—the higher the certainty, the surer we are this finding will not change if there are more data. Also, 2 out of 3 of the studies had a high risk of bias, meaning the results could be wrong because of the way the study was done—think of a broken scale still giving you a weight, but it may be off a bit.

Two Ways Scientists Study Risk

Randomized Controlled Trial

Tests cause and effect

- People are assigned to groups by chance
- Makes a fair comparison
- Shows what causes a problem and its effects

Example: Some babies are randomly given peanut foods at a young age, then researchers see who develops a peanut allergy.



Observational Study

Watches real life

- Researchers do not change anything
- Watches what people already do
- Looks for patterns
- Cannot prove cause

Example: Researchers notice that kids who avoid peanuts seem to have more food allergies.



Key findings included:

- Only 4.7% (about 5%) of persons have food allergy. This means on average, in a nursery of 100 babes, only 5 will get food allergy. This tells us our starting risk, to know how much any risk changes this.
- Vaccines are not associated with having food allergy.

Food allergy risks with HIGH certainty (2-3 times increase in the odds of having food allergy)

- Having eczema, seasonal allergies, or wheezing early in life
- Delaying peanut introduction into diet
- Having a mom or sibling with food allergy

Food allergy risks with MODERATE certainty (1-4 times increase in the odds of having food allergy, with less certainty)

- Having eczema later in childhood
- Having more severe eczema
- Skin water loss (causes dry, flaky, irritated skin)
- Delayed food introduction besides peanut
- Moms getting antibiotics in pregnancy
- Babies getting antibiotics in first year of life
- Dad or both parents having food allergy
- Parents moving to another country before childbirth
- Child raised in different country than where they were born
- Child born by C-section
- Black race



Asthma and Allergy Foundation of America

What does this mean:

- **No single risk factor will cause or has caused food allergy. Food allergies are not that simple.**
- The scale of these risks is not as large as you may think.

While the identified risks do raise the chance of food allergy, even if a child has the risk, most kids are still not going to have a food allergy. Only a small group of kids with this risk will, because the risk of food allergy to begin with is low.

Bottom line:

For a parent: Most babies will not have food allergy. Even if you or your baby has the risk, it is still unlikely your baby will have food allergy. Keep in mind most of the risks are small and out of your control. Some risks are hard to avoid or you cannot avoid, like using antibiotics. With antibiotics, the overall risk of getting food allergy is both small and less certain. However, if you do not or your child does not take the antibiotic, the risk of bad (and preventable) things happening by not treating an infection is high and quite certain. Err on the side of stopping the more certain thing from happening.

There is no accurate way to screen for food allergy, even in someone who has a risk factor. Food allergy testing before first eating a food can cause harm because of false positive tests.

If you do have a child with a food allergy, there wasn't one single factor that caused it. Even if you try to reduce the risk by doing things within your control, other factors not in your control may have caused the food allergy.

For the clinician: Most babies will not have food allergy. Most of the risks are small and out of the parent's control. Many parents or expecting parents may read this study and ask if antibiotics are necessary. Clinicians should be cautious in antibiotic prescribing for presumed ear and respiratory infections, which are largely from viruses. However, when antibiotics are necessary, they are obviously recommended. There is no accurate way to screen for food allergy, even in someone who has a risk factor. A shared decision-making approach can be helpful. Sending large panels of testing for foods is never indicated.

For the researcher: When designing clinical trials, these 342 risk factors of varying certainty of evidence can be used to help assess baseline similarities between groups or study arms and for identifying targeted groups for stratified sampling to allow for powered sub-group analysis. These risk factors also may serve as areas for potential interventions in randomized controlled studies.

What Is Certainty of Evidence?

It means how confident we are that a study's results are **true** and **reliable**.

Simple Way to Think About It

 **Certainty of evidence** is how much you can trust the answer not to change with more research.

More Certain

- ✓ Many studies find the same result
- ✓ Studies are well designed
- ✓ Results are clear and consistent

Less Certain

- ✗ Studies are small or poorly designed
- ✗ Results are mixed or unclear
- ✗ Important information is missing



Example

If one person tells you it will rain tomorrow, you might not be sure. If many weather reports say it will rain, your **certainty** is much higher.



What Are the Odds?

An **odds ratio (OR)** tells us how much **more** or **less likely** something is to happen.

How do odd ratios change the risk?

BASELINE RISK	Food allergy starting risk is low : about 5% (5 out of 100 people)	
2 TIMES THE RISK (OR=2)	Increases the risk of food allergy to 10% (10 out of 100 people)	
3 TIMES THE RISK (OR=3)	Increases the risk of food allergy to 15% (15 out of 100 people)	
4-5 TIMES THE RISK (OR = 4, 5)	Increases the risk of food allergy to 20-25% (20-25 out of 100 people)	

Even with strong risk factor, the overall risk of food allergy is **low**.

