

The origins of fussy eating in young children

This is a summary of the paper – Food fussiness and food neophobia share a common etiology in early childhood; by Smith et al, 2017 – in the [Journal of Child Psychology and Psychiatry](#).

As young children make the transition from a solely milk-based diet to a ‘family diet’, they are gradually introduced to increasing numbers of foods. While some children happily accept novel flavours and textures and enjoy widening their dietary repertoire, many are hesitant or even suspicious about trying new foods. Food avoidant behaviour can be broadly classified into two groups: ‘food fussiness’ and ‘food neophobia’. ‘Food fussiness’ is the tendency to be highly selective about the foods you are willing to eat, largely based on properties such as textures, tastes and smells. It is often thought to result from parenting styles, for instance overly pressuring a child to finish a meal. ‘Food neophobia’ is a related behaviour characterised by the refusal to try *unfamiliar* foods specifically. In contrast to food fussiness it is considered, to some extent, a normal developmental behaviour experienced by most young children, regardless of the way their parents feed them. Fussy and neophobic eating behaviours typically emerge during toddlerhood and commonly peak between two and six years of age; but for some children these traits persist into later childhood, and in rare circumstances, into adulthood.

Aside from the worry and frustration that these behaviours cause parents, in severe cases they can also significantly impact on children’s health. Children who eat only a restricted range of foods may miss out on dietary nutrients essential for healthy development, and some children eat too little, leading to weight faltering. Food refusal (especially neophobia) can also impact negatively on the development of children’s food preferences. This is because repeated exposure to a food facilitates liking (especially with healthier, commonly rejected foods such as vegetables); but if a child refuses even to try a food, they are unlikely to learn to like it. Researchers have therefore been interested in finding out what shapes food avoidant behaviour in early life. Some research has reported that children who are breastfed for longer and whose parents use less controlling feeding practices (e.g. allowing the child to take some control over his or her own food intake at mealtimes) are less likely to be fussy eaters; suggesting there are important environmental shapers to this behaviour. On the other hand, food neophobia is a behaviour seen more often in children who are shy or inhibited; which are characteristics with an established genetic influence, indicating that food neophobia might also have a strong genetic basis. Until recently, virtually nothing was known about the extent to which food fussiness and food neophobia are each shaped by genetic and environmental influences, and whether or not they share common influences. A better understanding of the extent of their common aetiology has important implications for clinical management; for example, if they are largely shaped by the same environmental influences, similar treatment and management strategies could be used for both behaviours.

Twin studies provide a powerful method of quantifying broadly the genetic and environmental influence on a characteristic (such as food fussiness), and the extent to which common genetic or environmental factors influence multiple traits, such as food fussiness and food neophobia. In a new study published in the *Journal of Child Psychology and Psychiatry*, we used data from the Gemini twin cohort to investigate the origins of these two behaviours for the first time. Gemini is a large study of 2400 pairs of twins that was set up in 2007 to explore early life growth and eating behaviour. We had information on food fussiness and

food neophobia for 1,932 pairs of twins collected when they were 16 months old; the age when food avoidant eating behaviours first start to emerge.

We found that both food fussiness and food neophobia have an important genetic basis; 46% and 58% of differences between children were explained by genetic influences respectively. The shared environment (aspects of the environment shared completely by twin pairs which contribute to similarities between them, such as the types of foods available in the family home) was a more important influence on food fussiness (46%) than food neophobia (22%); but the majority of these shared environmental influences were the same for both behaviours. These findings highlight that there is an important genetic basis to both food fussiness and food neophobia, but that there are also important aspects of the early home family environment that shape these two behaviours as well.

The considerable influence of the shared environment on both behaviours suggests that parent-led eating behaviour programs for fussy or food neophobic children may be effective in decreasing the expression of these problem behaviours. Given that most shared environmental influences on the two behaviours were the same, parents can be reassured that the same feeding strategies are likely to be effective in preventing or managing both behaviours.

Importantly, finding substantial genetic influence on fussy eating in early childhood shows that parents are not solely to blame. Understanding that these behaviours are partly innate helps to deflect this blame, and provides relief for parents who often feel guilty about their child's eating difficulties. However, genes are not destiny. Establishing the importance of genetic influences on fussy eating behaviours in early childhood does not imply these behaviours cannot be changed. An effective intervention to overcome food rejection is repeated exposure to the problem food; the more a child tries a food, the more familiar it becomes and eventually most children will learn to like it. A tasting game called '[Tiny Tastes](#)' was developed to help families introduce foods to reluctant and fussy eaters. This is an avenue through which parents can actively take a role in positively changing fussy or neophobic eating behaviours.

Key points:

- Food fussiness (FF) and food neophobia (FN) are restrictive eating phenotypes. Parents and clinicians consider these behaviours to be problematic because excessively fussy children may under eat or only accept a restricted number of foods.
- This twin study revealed the expression of FN and FF to be under moderate genetic control in early childhood.
- Largely shared environmental and genetic factors influenced variation in these behaviours, suggesting a common aetiology of these traits.
- The considerable genetic influence on these tendencies in young children diverts the blame away from the home environment. The shared aetiology of FF and FN behaviours indicates that parent-led eating behaviour change programs, for fussy or food neophobic children, may be effective in decreasing the expression of both.

Food fussiness and food neophobia share a common etiology in early childhood

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