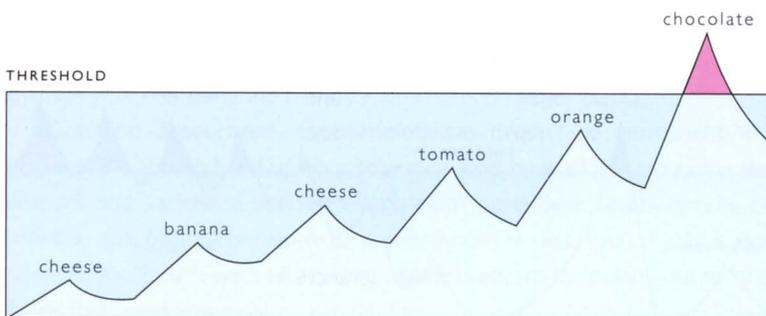


groups of foods, all of which contain the same offending substances. By contrast, protein allergens are unique to each food (for example, egg, milk and peanut), and dealing with a food allergy involves identifying and avoiding all traces of *that particular food*. Similarly, gluten, the protein involved in coeliac disease, is only found in certain grains (wheat, barley, rye) and their elimination is the basis of a gluten-free diet.

natural food chemicals Chemicals are found everywhere in nature, including in foods. Some are beneficial; for example, the vitamins we need for good health, and the flavour and aroma substances that make foods so enjoyable. On the other hand, many plants contain substances which are poisonous to humans, and of course we avoid cultivating these as foods. The staple foods we eat today have been selected by trial and error over thousands of years, both for their nutritional value and because most people can tolerate them without getting sick.

Some people are born with a sensitive constitution and react more readily to food chemicals than others. The tendency is probably inherited, but environmental triggers—a sudden change of diet, a bad food or drug reaction, a nasty viral infection (for example, gastroenteritis, glandular fever)—can bring on symptoms at any age by altering the way the body reacts to food chemicals. Women often become more sensitive in their child-bearing years, perhaps due to hormonal changes, which might be nature's way of preventing pregnant and breast-feeding women from eating foods that could harm a developing baby.

Babies are more vulnerable to food chemicals because their metabolism, gastrointestinal and nervous systems are immature, which is why they often prefer bland foods. As children mature, their bodies become accustomed to handling small amounts of rich, spicy and highly flavoured foods, which usually only cause ill effects if eaten in excess.



Chemical threshold The small amounts of natural chemicals present in a particular food may not be enough to cause a reaction straightaway. However, because one substance may be common to many different foods it can accumulate in the body, causing a reaction when the threshold is finally exceeded. On this graph, all the foods shown contain natural amines. Although the last food eaten (chocolate) is often blamed for a reaction, all the others have contributed as well.