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Short Communication

Situation-specific cognitive behavioural self-therapy for erroneously suspected allergy or intolerance to a food. A short self-assessment tool☆

Rebecca C. Knibb [a,b,*], David A. Booth [b]

[a] Psychology, School of Science, University of Derby, Kedleston Road, Derby, DE22 1GB, UK
[b] Nutritional Psychology Research Group, Psychology-in-Medicine Research Consortium, University of Birmingham, Edgbaston, Birmingham B15 2TT, UK

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ABSTRACT

The recall of personal experiences relevant to a claim of food allergy or food intolerance is assessed by a psychologically validated tool for evidence that the suspected food could have caused the adverse symptom suffered. The tool looks at recall from memory of a particular episode or episodes when food was followed by symptoms resulting in self-diagnosis of food allergy or intolerance compared to merely theoretical knowledge that such symptoms could arise after eating the food. If there is detailed recall of events that point to the food as a potential cause of the symptom and the symptom is sufficiently serious, the tool user is recommended to seek testing at an allergy clinic or by the appropriate specialist for a non-allergic sensitivity. If what is recalled does not support the logical possibility of a causal connection between eating that food and occurrence of the symptom, then the user of the tool is pointed to other potential sources of the problem. The user is also recommended to investigate remedies other than avoidance of the food that had been blamed.

Erroneously blamed foods

Unpleasant symptoms are blamed on foods by a substantial minority in European and North American populations. Meta-analysis has found that up to 35% of the population believes themselves to be allergic or intolerant to food (Rona et al., 2007). Yet objective tests confirm only a small proportion of these complaints (Rona et al., 2007; Young et al., 1994). Therefore it would benefit many members of public and overloaded allergy clinics to have a scientifically validated and constructed questionnaire tool that could be self-administered (in paper format or online) or used as the basis of an interview by practitioners qualified to follow-up testimony to a potential food sensitivity. The tool in Appendix was published in a new journal based in a research institute and is only available online via a link to an academic personal page. We are therefore reproducing it in the peer-reviewed multidisciplinary literature with an updated scientific background.

The evidence base

Between 1997 and 1998, 300 complainants of food-induced "allergy or intolerance" were recruited from the community by randomised mailings to electors in the city region of Birmingham in the English Midlands (Knibb, Armstrong, et al., 1999). Research evidence at that time (e.g. Young et al., 1994) suggested that up to 80% of those self-diagnosing food allergy or intolerance were in error in believing that their symptoms arose from ingestion of food. One of the important findings was that the presumably misattributed symptoms were not usually "psychological" or "psychosomatic" (Knibb, Armstrong, et al., 1999), as had been widely stated in this field. For example, in the UK food intolerance had been defined as "an unpleasant reaction to food which is caused by emotions associated with the food rather than by the food itself" (Royal College of Physicians and British Nutrition Foundation, 1984). Follow-up questionnaires to these recruits and to other research volunteers who did not blame foods for their illnesses detected few differences in anxiety or depression between those who supposed that they were food allergic or intolerant and non-allergic controls (Knibb, Armstrong, et al., 1999).

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* Corresponding author.
E-mail address: R.C.Knibb@derby.ac.uk (R.C. Knibb).

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Rather, we concluded, "false food allergy" in the community is real suffering with a physical basis (whether or not mediated by the immune system) and there was nothing unreasonable in the suspicions elucidated by detailed responses to structured interview. Moreover, many of the interviewees had indeed been advised by their doctor to look at their diet for a possible cause of their symptoms (Knibb et al., 2000). Health pages, leaflets and broadcasts of higher or lower reliability alert the general public to the serious reactions that some children or adults have to a great variety of foods and drinks. There are books for the lay reader that go through the scientific evidence for adverse effects from common dietary constituents (e.g., Emsley & Fell, 2000).

None of this, however, provides individuals with a basis for judging whether or not a symptom that can come from eating a food, has or has not in fact been caused by that food in their case. There are so many possibilities in the diet, and of other influences on such a symptom (such as airborne allergens or bacteria causing food poisoning), that even an appropriately specialised practitioner often cannot make a reliable diagnosis without blind physical testing. Eating and drinking are so frequent and involve so many combinations of chemically complicated materials that some dietary constituent or another is liable to be consumed before the onset or exacerbation of symptoms or an illness from any cause. Thus even a highly intelligent, very careful and well informed member of the public is liable to make the mistake of suspecting an innocent food of generating the adverse symptom. The imputation of hypochondria and worse to millions of ordinary people is in many cases unfounded.

Indeed, the great prevalence of misperceived food allergy or intolerance illustrates the fact evident in other areas of public health (Booth, 1999; Booth & Platts, 2000) that the communication of nutrition information on the basis only of general biochemical and epidemiological evidence is not only of little use but can be counterproductive. Advice on healthy eating patterns and other complex choices must be personally tailored from direct evidence provided by the individual. Here psychological science can be as useful as medical science. We applied cognitive psychologists' research findings on memory to interviewees' attempts to recall personal experiences of the symptom in question occurring shortly after consumption of the blamed food (Knibb, Booth, et al., 1999). Memory for an actual occasion when eating the food was followed by the symptom could be distinguished from the belief in an allergy or intolerance based only on the theoretical knowledge that such a food can give rise to the symptom in question.

That set of cognitive performance criteria for the actuality of a food-symptom episode was supplemented by criteria based on the logic of evidence for causal connections of any type (Booth et al., 1999; Knibb, Booth, et al., 1999). These causal criteria are of two sorts. Causal contingency requires that the recalled co-occurrence of food and symptom was unlikely to be mere coincidence arising from frequent occurrence of either the food or the symptom. The contiguity requirement is that the symptom arose sufficiently soon after the food had been eaten for some sort of cause–effect relationship to be plausible. The criterion of contiguity was, however, applied to the interview data without reference to current knowledge of pathophysiological mechanisms specific to that food and symptom (Knibb, Booth, et al., 1999).

In nearly all cases, interviewees whose food-symptom recall met most of the criteria of actuality, contingency or contiguity could be assigned to that same category by their answers to just one of the criteria for actuality, contingency or contiguity. These findings (Booth et al., 1999; Knibb, Booth, et al., 1999) therefore enabled the construction of a short questionnaire to screen for personal evidence that the symptom could have been caused by the blamed food and so to feed back advice on what to do about the symptom, tailored by the individual respondent's answers. One version of the resulting evidence-based self-care advice tool accompanies this paper.

Structure of the tool

The first two questions within this advice tool are designed to identify those people who are recalling an actual episode when the symptom followed eating the food. In our community sample, 38% of interviewees (24% of food-symptom reports) would have been able to give a precise answer to both of these two questions for at least one food they blamed for a symptom. Such people should be advised to go to a hospital clinic for further investigation if the symptom and/or the food are important and avoiding the food results in a poorer quality of life, psychological distress or inadequate nutritional intake.

Those who cannot answer both of the first two questions precisely are asked to go on to questions 3a, 3b and 3c in the tool. Answering these helps the tool-user to consider other possible causes of the food-attributed symptom and whether the co-occurrence of food and symptom was mere coincidence. Among those of our interviewees who would have been referred to this part of the questionnaire, a further 24% (29% of food-symptom reports) had reason to believe that the co-occurrence of food and symptom was not a coincidence. These people should also be advised to ask their GP to refer them for further investigation by an appropriate specialist. Table 1 shows the percentages of interviewees who were classified as perhaps erroneously suspecting food caused their symptom.

The reasoning offered after answering these questions identifies to the tool-users where they have a solid case against the food or where the attribution of the symptom to the food is likely to have been an understandable mistake. A small proportion of those in the community who believe that they have a food allergy or intolerance may have serious emotional problems with eating what they perceive to be a harmful food. Such people are liable to find this tool no more persuasive than any other reasoning or authoritative instruction. Where a powerful emotional reaction is discrete to the food, a clinical or health psychologist could be consulted about the possibility of therapy of the kind that is effective in reducing other sorts of anxieties, panic or phobia. Many of our interviewees showed no aversion to the food that they feared or professed to avoid, i.e. they did not state that they feared the food or had come to dislike the taste or have any feelings of disgust towards the food (Knibb et al., 2001). Nevertheless, if a wholesome food has become disliked, "extinction" therapy may be applicable. Where the disruptive emotion

Table 1
Percentage of interviewees and reports categorised as possibly misdiagnosing their food allergy or intolerance based on a criterion used as a question in the self-assessment tool.

Question number	Answer	People %	Reports %
1	No	77	74
2	No	13	9
Question number	Answer	% of those answering 'No' to Q1 or Q2	
		People %	Reports %
3a	Yes	20	24
3b	Yes	27	31
3c	Yes	67	74
3a + 3b + 3c	Yes	7	7