

Communicating with the public on chemical contaminants

Research report
Kantar Public - March 2017



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1. Executive Summary

The Food Standards Agency (FSA) is an independent Government department set up to protect the public's health and consumer interests in relation to food. The FSA commissioned Kantar Public to conduct research into consumer perspectives on chemical contaminants in food.

Chemical contaminants are substances that are not intentionally added to food. They may arise in food naturally, as a result of processing, or from the environment. The FSA currently has advice on certain chemical contaminants in food (e.g. lead shot in game, mercury in fish). These have differing levels of success in getting through to the target audience, on top of a general lack of public understanding and awareness of chemical contaminants in foods. Therefore, there is a need to review the provision of advice and consumer needs, to ensure consumer exposure is minimised where necessary.

Research design

The primary aim of this research was to develop a set of principles to help the FSA deliver effective communication in relation to mitigable and unavoidable risks to consumers from chemical contaminants in food. Two waves of qualitative research were conducted with participants including six Citizens' Forums (with 47 participants) and a weeklong mobile phone research exercise (with 26 participants). The research reflected a range of demographic groups with the primary sampling criteria being social grade. The research was conducted in London, Exeter, Leicester, Swansea, Bangor and Newcastle in November/December 2016 and January 2017.

Key findings

Awareness

Overall, participants had low awareness and understanding of chemical contaminants in food. Chemicals in food were spontaneously associated with additives and other chemicals that are intentionally added to food during its processing and production. Chemical contaminants were associated with man-made industrial processes and human error. Once prompted with specific examples of chemical contaminants, whilst there was some familiarity with arsenic, lead, polychlorinated biphenyls (PCBs) and dioxins, participants had particularly low awareness of these contaminants being in food.

Participants were not aware of Government advice on chemical contaminants in food except for mercury in tuna. Despite this, participants suggested that they would pay attention to Government advice, and on the whole were trusting of Government advice on food.

Perception of risks

Overall, current advice was considered to be clear and useful. There was a high degree of similarity across the groups in terms of how advice about different contaminants was understood and responded to. Lead, mercury, PCBs and dioxins, were commonly perceived as the highest risk. Perception of risk and concern was driven by a number of factors:

1. **Exposure to chemical contaminants** – was a driver of concern, as participants worried about long-term exposure as a result of eating small but repeated quantities in everyday food.
2. **Man-made chemical contaminants** – were considered to be more concerning as they were perceived to be more toxic and as a result more harmful to health than naturally occurring contaminants.
3. **Unavoidable chemical contaminants** – participants were more concerned about contaminants which they perceived as harder to avoid due to accumulation in the food chain.
4. **Severity of risk** – participants expressed greater concerns when specific and severe health risks were raised.
5. **Proof** – when reading information about risks, participants paid attention to the linguistic certainty about risk, tending to discount risks where the evidence was presented as less certain.

Impact on behaviour

Despite concerns, information about the risks of particular contaminants had limited impact on behaviour, with participants making general rather than specific changes. For example, participants had not limited their consumption of a particular foodstuff - rather they had tried to ensure they had a varied and balanced diet, washed salad and vegetables and checked food packets and labels.

The exception to this was around acrylamide, where participants suggested they had avoided eating burnt toast, despite the fact that they had previously dismissed the risk as 'unproven' or 'uncertain'. This suggests that action may be taken if impacts are perceived to be severe, and they are about avoiding foods that are not necessarily enjoyable in the first place. It further suggests that views about incidence and evidence may be forgotten if people remember (a) the risk and consequences and (b) a clear action to mitigate the risk.

Communication needs

This research validates evidence from previous research¹ on chemicals in food and communicating risk: that communicating a **clear and specific action to mitigate risk** is key in communicating about risks. Participants felt strongly that any information provided needed to be clear and highly specific in terms of the levels of consumption or exposure that they should avoid. They also felt that communication should be proportionate to the level of risk the chemical contaminant poses. Therefore, they did not want to receive direct communication where contaminants pose a low risk to human health, instead favouring to be signposted to further information should they want to find out more. Additionally, participants felt that advice should be consistent, and that Government should be joined up in communication about the risks and health benefits of different foods in order to avoid confusion over conflicting information.

Principles for communicating

Overall, there were tensions around when participants wanted to be informed about chemical contaminants, due to differences in information appetites amongst individuals. Additionally, as the risks were perceived to be very low, this also caused tensions around when participants wanted communication about these risks. However, on the whole, participants wanted the information to be made available somewhere, but this should be 'at arm's length' unless the risk was considered to be very high.

This research also suggests that there is a divergence between the information that makes people feel informed, and what they might act on. Whilst people may rationally discount the risk at the

¹ FSA and TNS BMRB (2016) Consumer understanding of food risk: chemicals
<https://www.food.gov.uk/sites/default/files/consumer-understanding-of-food-risk-chemicals.pdf>

point of receiving information, their propensity to act does not necessarily depend on being convinced of all the facts.

Based on the above, the following principles for the communication of risks were developed to help frame advice about the risk of contaminants:

- Be proportionate to the level of risk chemical contaminants pose
 - Active messaging and warnings should be issued if chemical contaminants pose a high and/or immediate threat, especially those exposing large groups of the population to serious health risks
 - Chemical contaminants which are a lower risk should be kept at arm's length with signposting to information available online
- When advice can include a clear and specific action for consumers to take
 - Ideally, this should be quantifiable and include a high level of specificity about: the type of risk, level of risk, severity of consequences, food items to avoid and quantities which are safe to eat within specific timeframes
 - Avoid saturation and dilution by listing multiple sources of risk or health consequences - this can lead to the risk being considered unavoidable, or lead to the advice being perceived as overwhelming or alarmist
- Ensure advice is evidence based and from a reliable and credible source (stressing independence if possible)
- Advice should be in clear and accessible language – avoiding scientific jargon
- Be clear who is at risk – e.g. specific target groups
- Ensure Government advice is consistent and appears joined up across 'health' and 'risk'
 - People expect advice about 'food' to be cohesive, regardless of source
- Have information which is available to all - with clear signposting to accessible information for those who want to know more

2. Research Design

2.1 Background

The Food Standards Agency (FSA) is an independent Government department set up to protect the public's health and consumer interests in relation to food. In line with the Agency's strategic plan there is a need to ensure that the consumer can make informed choices about what they eat, and have rights and responsibilities with regard to the food that they eat. This remit extends to assessing and mitigating the risks of human exposure to chemicals in food.

Chemicals may be present in food for different reasons. They can be used in the production and preservation of food, can occur naturally in food, can be present as a result of contamination or can arise from the processing of food. The presence of such chemicals in food is regulated at the EU level to minimise risks and to ensure that food safety is not compromised. Currently, the FSA is seeking to gain a greater understanding of consumer perspectives on chemical contaminants in food.

The FSA currently has advice on certain chemical contaminants in food (e.g. lead shot in game, mercury in fish). These have differing levels of success in getting through to the target audience, on top of a general lack of public understanding and awareness of chemical contaminants in food. Therefore, there is a need to review the provision of advice and consumer needs, to ensure consumer exposure is minimised where necessary.

2.1.1 Previous research

Kantar Public (formerly TNS BMRB) conducted a small-scale study in June 2015² to explore general consumer awareness and understanding of chemicals in food. This consisted of 4 Citizens' Forums discussions and an online survey of 2,708 participants using the FSA Consumer Panel. The research showed that awareness and understanding of risks presented by certain chemicals in food was low, though there was some awareness about food additives and pesticides. The research also highlighted some of the challenges in communicating with participants about chemicals in food, as participants felt information could be overwhelming particularly in relation to chemicals they felt they were unable to do anything about. However, research highlighted that participants welcomed messaging that they saw as empowering and practical: where the risks were particularly high, or where there were clear actions the public could take to avoid or mitigate the risk.

In order to effectively reach participants with advice regarding chemicals in food, there was a need for more extensive research to better understand public attitudes to chemical contaminants in food, their perception of risks, as well as their information needs in order to develop appropriate messaging.

2.2 Research objectives

The aims of this research were to provide evidence on the views and priorities of the public about communication around chemicals in food. The overarching aim was to develop a **generic set of**

² FSA and TNS BMRB (2016) Consumer understanding of food risk: chemicals
<https://www.food.gov.uk/sites/default/files/consumer-understanding-of-food-risk-chemicals.pdf>



principles on effective communication around mitigable and unavoidable risks to participants in relation to chemical contaminants. More specifically, the research aimed to:

- Test whether participants are **aware of advice** issued by the Government regarding certain chemical contaminants (including Acrylamide, Lead, Mercury, Arsenic, Naturally-occurring toxins (e.g. fungi and plant toxins), PCBs and dioxins);
- Understand participants' **views of risks** associated with certain chemical contaminants in food, and whether participants **understand the specific advice available** on certain chemical contaminants and associated risks to human health;
- Understand **the extent to which information has an impact on their behaviours** regarding eating habits, cooking, storage, and processing of food;
- Explore **what practicable and actionable information participants want** on chemicals where they can do something to minimise risks;
- Identify **when it would be appropriate to produce targeted advice** on chemical contaminants in food, and how this information should be presented.

2.3 Methodology

Two waves of qualitative research were conducted with participants including 6 x Citizens' Forums followed by a 7 day mobile phone research exercise. The methodological approach is summarised below in Figure 2.1.

Figure 2.1 Phased research methodology

Phase	Approach	Total
PHASE 1	 <p>6 Citizen forums x 7/8 participants Duration 90 mins Including: review of current advice</p>	47
	INTERIM TASK	
PHASE 2	 <p>Mobile phone diary exercise x 26 participants Length 7 days Including: New contaminant exercise</p>	26

6 x Citizens' Forums were conducted with 7/8 participants in each group. Citizens' Forums utilise a qualitative, deliberative group discussion method, whereby during the sessions, educational materials provide context and in-depth information to the group, informing participants' discussions. The forum setting facilitates systematic and in-depth testing of complex stimulus materials with participants, which researchers present to unpick the reasons behind responses. These forums therefore provide a deeper understanding of attitudes than traditional focus group discussions:

uncovering existing levels of knowledge; and providing a deeper understanding of how people respond to additional information.

Each forum lasted approximately 90 minutes and took place between the 28th November and the 9th December 2016 in various locations across England, Wales and Northern Ireland. The forums explored spontaneous awareness and understanding of chemical contaminants and their perceptions of the risks. Additionally, the forums gave participants an opportunity to engage with stimulus, and to learn more on what chemical contaminants are and the current Government advice available. The topic guides and stimulus materials are provided in Appendix B and C.

The mobile phone diary was conducted 4-5 weeks after the forums to allow participants time to digest and reflect on what they had learnt. Between waves, participants were given a 'homework' task to help keep them engaged with the topic during the break. This asked them to reflect on chemical contaminants that may have been in their food over the period and any concerns they may have had about this.

The second wave of the research consisted of a 7 day mobile phone diary exercise which was conducted with the same participants from Wave 1. Fieldwork took place between the 16th and 22nd January 2017. It was designed to take approximately 90 minutes across the week. The aim of the mobile diary exercise was to explore how advice and information had an impact on participants' behaviour and explore further their views and priorities on how they wanted to be communicated with about chemical contaminants in food.

2.4 Sampling

To ensure a range of consumer views were reflected in the research, the forums comprised a mix of social grades and locations. The forums were held in six locations: London, Exeter, Leicester, Swansea, Bangor and Newcastle. Participants were screened to ensure that a range of demographics were reflected in the groups, namely a mix of genders, ages, ethnicities, work statuses, life stages, and attitudes to risk. Levels of interest in science were also monitored. For phase two, participants from all locations were reconvened except for Newcastle where there was lower interest in taking part. A breakdown of the coverage across location and social grade can be found in Figure 2.2 below. The full break down of the achieved sample can be found in Appendix A.

Figure 2.2 Breakdown of coverage across location and social economic grade.

Wave	Location	Socio-economic grade
W1 only	Newcastle	C2DE
W1 & W2	London	ABC1
	Exeter	C2DE
	Leicester	ABC1
	Bangor	C2DE
	Swansea	ABC1

2.5 Analysis

Analysis was conducted iteratively across each phase of the qualitative research, building understanding of consumer priorities and concerns, uncovering the reasons for views, and exploring implications for communication.

The analysis drew on multiple data sources, including: moderator notes from the forums (including audio recordings and materials completed by participants in Citizens' Forums) and data generated through the online platform (including rating scales, open-ended text, discussion threads and photos). Matrix mapping was used to analyse the large volumes of data. This is a thorough and robust approach to qualitative data analysis whereby structured pro-formas and charts are used to map data against the research objectives and emergent key themes. The data were systemically analysed to look for themes and explore variation across sub-groups. Formal analysis brainstorm sessions were held following each phase of research, where researchers explored findings against each of the key themes in detail, as well as against the over-arching objectives. Verbatim quotes are used throughout this report to illuminate findings and are attributed as follows:

"Quote." (Location, Social grade, Wave).

This report reflects the views of the participants in the research and not the views of the Food Standards Agency (FSA).

3. Awareness of Chemical Contaminants in Food

This section explores participants' spontaneous and prompted awareness of chemical contaminants, as well as their sources of knowledge including any awareness of Government advice.

Overall, participants had low awareness and understanding of chemical contaminants in food. Chemicals in food were spontaneously associated with food additives and other chemicals that are intentionally added to food during its processing and production. Chemical contaminants were spontaneously associated with man-made industrial processes and human error. Once explained, participants sometimes struggled to engage with the idea of 'naturally occurring' chemicals, meaning prior associations with 'human error' sometime proved difficult to shift. Once prompted with specific examples of chemical contaminants, whilst there was some familiarity with arsenic, lead and PCB's and dioxins, participants had particularly low awareness of these contaminants being in food.

Existing knowledge of chemicals came from a range of sources, though most frequently through media. Awareness of Government advice on certain chemical contaminants in food was low except for mercury in tuna. Despite having little prior contact with it, participants suggested that they would pay attention to Government advice, and on the whole were trusting of Government advice on food.

3.1 Spontaneous awareness

On the whole, participants had low awareness of chemicals in food. When thinking about chemicals in food in general, people's spontaneous associations were about chemicals that were added intentionally to food during processing such as additives, preservatives, e-numbers, colourings, and flavourings. Their use was linked to processed foods - to enhance shelf life, appearance, taste and texture. In London and Bangor, participants commonly related chemicals in food with manufacturers using them in order to maximise profit.

"Sometimes in fast food, take away food and stuff like that, there's something, what's it called, MSG something?" (Bangor, C2DE, Wave 1)

Chemicals were also associated with the use of steroids in livestock production. Genetically modified (GM) food was spontaneously raised as a reason for chemicals being in food, which supports wider evidence that suggests people often perceive chemicals as unnatural and consequently, as unhealthy.³

Participants were unfamiliar with the term 'chemical contaminants' and struggled to define what a chemical contaminant was, often describing it as something which 'gets into food that shouldn't be there'. Led by the name, participants guessed that contaminants would be present in food as a result of human error, such as by environmental damage or 'accidents' in the food processing chain. This 'contamination' was expected to take place primarily at the beginning of the food

³ See for example FSA and TNS BMRB (2016) Consumer understanding of food risk: chemicals

<https://www.food.gov.uk/sites/default/files/consumer-understanding-of-food-risk-chemicals.pdf>

RSC and TNS BMRB (2015) Public Attitudes to Chemistry

<http://www.rsc.org/globalassets/04-campaigning-outreach/campaigning/public-attitudes-to-chemistry/public-attitudes-to-chemistry-research-report.pdf>

production process, for example, through agricultural chemicals and pesticides being sprayed on crops. While this was considered to be necessary for crops to grow, there were concerns about the effects this could have on the environment, and participants were often not convinced that chemicals were washed off or removed appropriately before reaching consumers. Participants also envisioned contaminants entering food towards the end of the food production process, as a result of cleaning products accidentally entering food or from foreign objects such as plastic being found in food.

“Like when they make a mistake and cleaning products are found in food.” (Bangor, C2DE, Wave 1)

“Bits of packaging can sometimes be left in. Like pieces of plastic.” (Bangor, C2DE, Wave 1)

There was some knowledge of mercury being in tuna and other seafood. This was the only contaminant spontaneously mentioned by participants and was not widely known. Though participants were not aware that this was termed a contaminant, they knew it to be a chemical found in food.

3.2 Prompted awareness

Participants were prompted with the names of six chemical contaminants to explore their knowledge or awareness of these contaminants in food. The contaminants included arsenic, lead, mercury, acrylamide, mycotoxins, PCBs and dioxins.

On the whole, there was limited knowledge and awareness of these contaminants, specifically in relation to being in food. Lead was a contaminant which was known to be in paint and water mains; however there was low awareness of lead in food except for one suggestion of it being in salmon. There was some awareness of arsenic in copper mines and a consequent source of ground contamination. Arsenic was also associated with poison. In relation to food, some participants reported knowledge of arsenic being found in pistachios, almonds and apple pips; however these were considered to be relatively safe to eat because they perceived the quantities to be very low. PCBs and dioxins were known by some as a form of plastic, banned in household appliances though still found in micro-beads in toiletries. These participants were aware that these chemicals could enter the food chain if eaten by fish.

There was limited awareness of mycotoxins asides from an association with fungus. There was no awareness of acrylamide⁴.

“They’re finding concerning amounts of plastic ingested by fish and of course that’s a worry for us.” (Exeter, C2DE, Wave 1)

When provided with a definition of chemical contaminants, participants were often surprised that chemicals could be naturally occurring in foods, as this contradicted the widespread view that chemicals are unnatural, and the association of the word ‘contaminant’ with human or environmental error. This prompted questions about the safety of chemical contaminants, as ‘natural-ness’ is often equated with healthiness. For some, grasping the category of chemical contaminants as potentially naturally occurring was difficult, making it hard to shift some of the associations with chemicals deliberately added to food.

“Contamination’s a word that implies something bad to me. It’s the wrong word to use maybe....When you think about contamination you think about an oil spill...” (Leicester ABC1 Wave 1)

“It’s a strange thing to say that ‘chemical contaminants can arise in food naturally’, because if it’s in food naturally surely it’s not contaminated.” (Leicester ABC1 Female)

⁴ The second phase of research completed on the 23rd January 2017 and so took place just before the FSA undertook the promotion of its’ consumer facing advice on acrylamide in home cooking.

3.3 Sources of knowledge

Information sources about chemicals were generally through the media, specifically TV news and documentaries about chemicals used in food production and processing. Other media sources included magazines, newspapers, social media and online news.

Food packaging and labels were suggested as a potential source of information, though in practice labels were considered difficult to read and understand. Some participants suggested that when they had made dietary changes (e.g. becoming a vegan/vegetarian) they were prompted to look online for information more frequently, and had come across information about chemicals in food. Additionally, some participants received this information from dieticians and nutritionists. Other sources included work experience and trips such as to factories or farms. These sources and the frequency they were mentioned (indicated by the size of the bubble) are summarised below in figure 3.1.



Figure 3.1 Sources and frequency of information on chemicals

Information about chemical contaminants specifically came from a similar variety of sources, again most frequently the media. TV news was commonly reported as a source for information on contaminants such as mercury in tuna and seafood. Other media sources included TV programmes, newspapers and healthy living magazines. Once hearing or reading about chemicals in the media, some participants were prompted to seek further information online. Some participants noted that they may have encountered Government websites or information when searching online, though were unsure about the exact sources used, and hadn't actively sought out Government websites as far as they could recall.

Another source of information on chemicals was word of mouth, such as friends and family and amongst gym and healthy lifestyle social groups.

"Rumours in the office about high volumes of MSG being used in food, also using hormones in chicken.....that was the first time I found myself looking up what MSG is"
(London, ABC1, Wave 1)

There was uncertainty about which sources participants felt they could trust. Generally there was trust in healthy living magazines, TV programmes and documentaries and word of mouth. However, there was a lack of trust around the media, specifically TV news and newspapers due to the perception that food advice and information presented by media regularly changed, and that these media outlets were prone to 'scaremongering'. Participants were also unsure how far they could trust food packaging and labels due to an overall distrust of manufacturers.

"The media tell you one thing and the next they'll tell you something else." (Newcastle, C2DE, Wave 1)

3.4 Awareness of Government advice on chemical contaminants

On the whole, awareness of specific Government advice on chemical contaminants was low. While participants were aware of other food safety advice such as the Food Hygiene Rating Scheme, food recalls and advice from large-scale outbreaks such as 'mad cow disease' or listeria, they had not heard of any advice relating specifically to chemical contaminants. The only exception to this was advice on mercury in tuna which had been communicated to women during pregnancy by midwives and healthcare professionals.

3.5 Perceptions of Government advice

Despite having low awareness and knowledge of Government advice, participants reported that they would pay attention to it as they want to be aware of what they and their family are eating. They would also pay attention to the advice as they were generally trusting of Government to inform them of anything which may cause them harm. Government was perceived to be far more trustworthy than the media to communicate on chemicals in food.

On the other hand, some participants expressed some scepticism about trust in Government in relation to food (see section 3.6). Whilst they did not say they would ignore Government advice, they suggested they may look elsewhere to validate information.

"I usually listen to what they have to say and anything I need to accept as sound, or fact, I back it up by looking at another source. Online helps to validate anything you've heard."
(London, ABC1, Wave 1)

It was agreed that Government should communicate to the public and give them advice on chemical contaminants in food in order to support informed decision making. Whilst some raised concerns about the possibility that there was a fine line between advice and 'being dictated to', on the whole advice felt appropriate and within the Government's remit. Discovering that there were these food risks that participants did not know about, in some instances led them to feel that the Government should be doing more to inform people.

"If it's in there, they should give advice... I think it would be better if they did give you more advice." (Exeter, C2DE, Wave 1)

3.6 Factors challenging trust and confidence in Government advice

Though overall trust was high, trust in Government advice was somewhat undermined by the widespread perception that food guidelines, provided by Government, change regularly and are not always consistent with other advice given. For example, participants reported seeing changing advice on the amount of alcohol that it is safe to drink when pregnant. Additionally, participants reported perceiving that advice around healthy eating in particular is regularly shifting and contradictory. For example, some people recalled hearing contradictory advice around the healthiness of butter or margarine. More specifically relating to risk communication, participants perceived advice about the risks of salmonella in eggs to be contradictory to advice about eggs being healthy. Therefore, there was a sense of conflict emerging both within and between Government agencies and the media, which was confusing and diminished the power of the advice. These findings suggest that people do not distinguish 'health' advice from 'risk' advice, and that there is an expectation that communications about a particular foodstuff must be consistent, regardless of source.

"I've seen them say 'cut down' on this, that and the other, then the next month they back track: 'It's not that bad, in moderation it's okay'. You don't know where you are." (Bangor, C2DE, Wave 1)

For some, trust in Government advice was challenged by a suspicion of 'collusion' between Government and the food industry. This was a particularly prevalent view amongst participants from higher socio-economic grades, who felt that Government were 'in the pocket of producers', linked to Governments' ability to regulate industry based on their size and the tax revenues

received. Therefore, these participants were slightly sceptical of Government advice on food in general, though there were no specific conflicts raised in relation to chemical contaminants.

“I think that Government is not in the best place to actually regulate industry simply because of the clash of interests. Government is very much interested in the tax that comes from the food industry.” (London, ABC1, Wave 1)

4. Perceptions of the Risks of Chemical Contaminants in Food

This section explores informed perceptions of the risks from chemical contaminants in food, in terms of how participants responded to information, and the types of contaminants that were more and less concerning.

Overall, current Government advice was considered to be clear and useful. There was a high degree of similarity across the groups, in terms of how advice about different contaminants was understood and responded to. PCBs, dioxins, lead and mercury were commonly perceived as the highest risk. Five main drivers of concern emerged around chemical contaminants in food:

1. **Exposure to chemical contaminants** – were a driver of concern, as participants worried about long-term exposure as a result of eating small but repeated quantities in everyday food. Concerns were thus higher for contaminants that accumulated over time.
2. **Man-made chemical contaminants** – were considered to be more concerning as they were perceived to be more toxic and as a result more harmful to health than naturally occurring contaminants.
3. **Unavoidable chemical contaminants** – participants were more concerned about contaminants which they perceived as harder to avoid due to accumulation in the food chain (compared to contaminants such as acrylamide which could be easily avoided by not burning food).
4. **Severity of consequence** – participants expressed greater concerns when specific and severe health risks were raised.
5. **Proof** – when reading advice, participants paid attention to the linguistic certainty about risk, tending to discount risks where the evidence was presented as less certain.

4.1 Participants' concerns

After being presented with information on the different chemical contaminants, participants were asked to group and rank the contaminants into those they found more concerning and those they found less concerning.

Some participants felt that the fact that they had never heard of these contaminants was proof that they were not a high risk as they believed the public would have been made aware about serious risks. Others found it difficult to categorise/differentiate chemical contaminants as they felt they were all similarly high risk. This was particularly the case in Newcastle and amongst lower socio-economic groups.

On the whole, however, there was a high degree of similarity across the groups. The overall collated ranking is displayed below in Figure 4.1.

Figure 4.1 Ranking of chemical contaminants in order of concern



Five aspects that drove concern were identified; exposure to chemical contaminants, man-made chemical contaminants, level of difficulty of avoiding chemical contaminants, severity of the consequence and proof. These will be explored further in the following sections.

4.1.1 Exposure to chemical contaminants

For some participants, there was uncertainty and concern around their level of exposure to chemical contaminants from the food they eat. Participants found it difficult to estimate or calculate their exposure based on the information given, which was a driver of concern. They were particularly concerned about their long-term exposure from eating small quantities of chemical contaminants, over a long period of time. Concern was further heightened if a contaminant was present in numerous sources, as participants felt this made it harder to avoid. Therefore, the risk was considered to be greater when contaminants were present in everyday, staple foods, where the risk could effectively 'scale up' given the ubiquity of the contaminant. For example, PCBs, dioxins and lead were considered to be a higher level of risk and more concerning because they were in common foods such as potatoes, cereals, eggs, fish and dairy produce. Conversely, there was less concern about contaminants found in less familiar and less commonly consumed food items such as arsenic in hijiki seaweed. As a result, some participants felt that the most sensible way to avoid exposure to contaminants was to eat a varied and balanced diet, avoiding excessive consumption of any one food type.

Whilst participants acknowledged that mycotoxins were also in foods eaten everyday such as cereals and nuts, the fact that they were naturally occurring outweighed their concerns of exposure. This will be discussed further in section 4.1.2.

"It's accumulative, you might eat something and it's hardly anything, but if you eat that every day and you go on eating it every year then your body is just storing it." (Exeter, C2DE, Wave 1)

Additionally, contaminants that could expose larger groups of the population to health risks were a higher concern than those that were only a risk to specific groups. For example, there was less concern about mercury as it is only harmful for pregnant women, rather than the wider population. Thus, there was a sense that if it doesn't directly affect them and the vast majority of people, the risk is comparatively less concerning.

"What I picked up on was lots of the advice was for pregnant women and children and I thought hang on, we're normal people, we want to know what's good for us. I just flicked through thinking, oh I'm not pregnant and I haven't got a toddler" (Swansea, ABC1, Wave1)

4.1.2 Man-made chemical contaminants

Once presented with information on chemical contaminants, participants were surprised to learn they could naturally occur in food. As discussed in section 3.2, chemical contaminants were initially considered to be synthetic and were strongly associated with man-made processes. It was difficult for people to conceptualise how chemical contaminants could occur naturally in food and they found it hard to reconcile the term 'contaminant' with something that was naturally occurring. This echoes previous research about public perceptions of chemicals - that they are seen as synthetic and man-made, and that these associations are hard to overcome.⁵

⁵ See for example RSC and TNS BMRB (2015) Public Attitudes to Chemistry

<http://www.rsc.org/globalassets/04-campaigning-outreach/campaigning/public-attitudes-to-chemistry/public-attitudes-to-chemistry-research-report.pdf>

“Wouldn’t have thought chemicals occur naturally in food, I wouldn’t have thought natural chemicals are out there are they?” (Swansea, ABC1, Wave 1)

“It’s a strange thing to say that ‘chemical contaminants can arise in food naturally’, because if it’s in food naturally surely it’s not contaminated.” (Leicester, ABC1, Wave 1)

After learning that chemical contaminants can exist naturally in food, participants tended to be more concerned about the chemical contaminants they grouped as man-made such as PCB’s and dioxins, lead and mercury. These chemicals were perceived to be more toxic, harmful to human health, and harder to avoid, particularly if the contaminant had accumulated in the food chain. Additionally, participants felt they knew less about these contaminants in food and had a lack of understanding of the health risks, which added to their concerns.

“At the end of the day that’s in the food chain; how do you stop that, you’ve got to have quite an impressive system globally to stop that from continuing.” (Newcastle, C2DE, Wave 1)

“It’s almost as if it could end up in everything if it’s passed along the food chain.” (Swansea, ABC1, Wave 1)

Linked to this, participants expressed greater concern about their exposure to chemical contaminants from the processing of foods, compared to those that were naturally occurring. Learning that processing could lead to chemical contamination led to some questioning the safety of current food processing practices, which they had previously believed to be regulated (and consequently, safe). Participants were concerned that unsafe practices were putting consumers at risk, and wanted to know that contaminant levels from processing would be closely regulated. This was a particular concern in Bangor.

“I’m kind of confused by that. If they’re processing the food, you think surely they would know what’s going into it?” (Bangor, C2DE, Wave 1)

“You would think they were making the food in a way you can eat it.” (Bangor, C2DE, Wave 1)

Conversely, naturally occurring chemical contaminants such as mycotoxins and arsenic were less concerning as they were perceived to be less harmful or toxic as man-made chemicals. There was also a sense that there wasn’t much that people could do to avoid naturally occurring contaminants.

“If it’s something that occurs naturally it doesn’t bother me, it’s meant to be.” (Swansea, ABC1, Wave 1)

“If we’re meant to be eating the things that we’re eating, fruit and meat and vegetables and it’s there naturally, then we must be equipped to deal with that. If it’s put there artificially, then we’re probably not meant to be able to digest it or have it in our bodies.” (Exeter, C2DE, Wave 1)

4.1.3 Level of difficulty of avoiding chemical contaminants

Participants’ level of concern also related to how avoidable they perceived the contaminant to be, both in terms of whether they could take action to mitigate the risk and whether the contaminant was perceived to be controlled by others - namely, regulators. The more avoidable a contaminant was, the more control participants felt they had, with contaminants being considered lower risk as a result.

Man-made chemicals, particularly those that accumulate in the food chain such as PCBs and dioxins, were felt to be harder to avoid, diminishing the sense of control participants felt they had in reducing exposure. Conversely, they were less concerned about contaminants that were seen as easier to avoid. For example acrylamide was considered to be a low risk in part because of the sense they could be easily avoided by not burning food. It was not perceived to be inevitably and unavoidably in their food - but the result of how they cooked it - and so within their control.

“If you’re concerned about that, just don’t burn things.” (Bangor, C2DE, Wave 1)

Additionally, mycotoxins were considered less concerning due to the information that regulatory limits are set to reduce contamination as far as possible. As a result, participants were reassured that mycotoxins were being regulated, and could be managed and avoided by having good agricultural practices. To some extent, being reassured that contaminants were controlled by regulators led participants to divest responsibility for the risk.

“Mycotoxins, because it’s regulated it doesn’t seem as bad to have it in small doses whereas, because they’re all natural, if they was that bad for you they wouldn’t let us eat those things would they?” (Swansea, ABC1, Wave 1)

4.1.4 Severity of consequence

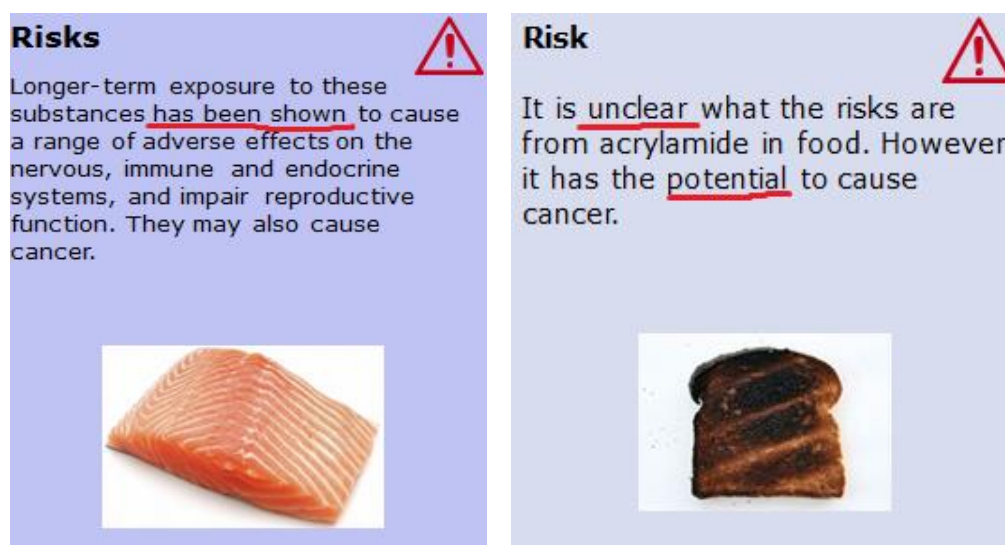
Participants expressed greater concerns when the consequences of exposure were severe. Specifically naming the health problems that could be caused by certain contaminants led to a more visceral and emotional response, in turn leading the contaminant to be classified as a higher risk. While attention was paid to the mention of cancer, some mentioned fatigue with cancer warnings and food advice, perceiving this to be a risk commonly and indiscriminately raised, particularly by the media.

There were also concerns among some around unknown and long-term risks. Some participants worried that some health risks could still be unknown, and may only become apparent after many years.

4.1.5 Proof

When reviewing Government advice, attention was paid to the level of linguistic certainty around the communication of risk. Concern was greater where there was stronger evidence or wording to associate the contaminant with a serious health condition. For example, contaminants where the wording indicated that it was shown to cause a serious health problem was considered more concerning and a higher risk rather than those which indicated it ‘could’ or ‘potentially could’ cause a problem or where the causal link was unclear. This is demonstrated in Figure 4.2 which illustrates the difference in wording between PCBs and dioxins on the left and acrylamide on the right. Generally, participants were sceptical about both the level of risk and the appropriateness of communicating, when evidence felt uncertain.

Figure 4.2 Linguistic certainty around the risks of chemical contaminants in food



However, despite attention being paid to uncertainty when reviewing advice, this information seemed to be less important in terms of influencing behaviour. This suggests that 'rational' information about certainty or incidence may not factor into people's actual decisions about risk. This is explored further in the following section.

5. Impact of Information on Behaviour

This section explores the extent to which learning information about contaminants had an impact on participants' behaviour regarding eating habits, cooking, storage, and processing of food.

In Wave 2 of the research, participants were asked whether they had made any changes to their eating habits, cooking, storage, or processing of food, based on what they had discussed in the first wave. Overall, information had limited impact on behaviour, with participants on the whole making no changes, or 'generic' changes such as maintaining a varied and balanced diet, washing salad and vegetables and checking food packets and labels. The only exception to this was in the case of acrylamide, where some had suggested avoiding eating burnt toast.

5.1 Generic changes

Information shared in Wave 1 of the research had raised awareness among participants that chemical contaminants exist in food and that there are risks. Despite learning of these new risks, and some saying they would reconsider the amounts of some of the food they eat, participants on the whole reported making limited changes to their behaviour. In part, this was because the risks were considered to be too low to prompt a change. Others stated that they considered the risks to be in some respects 'unavoidable' so did not think that changes would have much impact. Lack of change also suggests that habits around food are strong and difficult to shift - particularly when risks are considered low.

"I wouldn't say I've done anything differently as I feel it's impossible to avoid these contaminants completely." (Leicester, ABC1, Wave 2)

"Because I've been eating like this my whole life and it's hard to change." (London, ABC1, Wave 2)

"I have been eating like this for many years now I don't think changing will make much difference." (Exeter, C2DE, Wave 2)

It is worth noting the possibility of some research effect here, as participants may have felt overwhelmed by the volume of information received at once, which could have made it difficult for individuals to focus in on and remember specific actions. This may help explain why more generic changes were made, rather than changes made in response to specific risks (though as noted below, some specific changes were observed in response to information about one contaminant).

For example, there was a strong agreement among some participants that it is better to maintain a 'balanced diet' overall rather than making any specific changes. This related to concerns about the accumulation of chemical contaminants and the response that it was better not to eat too much of anything in order to avoid being over exposed.

"I feel I'm more aware now that there are contaminants in food but I feel I have a healthy and varied diet so I wouldn't excessively get exposed to the contaminants." (Bangor, C2DE, Wave 2)

Additionally, some participants considered buying organic or growing their own fruit and vegetables, however this was mentioned mainly amongst participants from higher socio-economic backgrounds. This change suggests that participants continued to associate chemical contaminants with pesticides, GM, and other synthetic chemicals introduced during food production, and that information had heightened awareness and concern about chemicals in general being in food, rather than prompting change about any specific contaminant.

"I have started cooking and use minimum take-way and frozen food eat more organic and healthy food." (London, ABC1, Wave 2)

"Yes I have been eating more non GM foods and trying to eat mostly organic foods."
(Swansea, ABC1, Wave 2)

Additionally, some reported paying closer attention to food labels and packaging in order to check whether chemicals were present in food. Awareness of chemicals in food had increased and participants were primed to seek out this information as a result.

"I look at the back of packaging more often to look out for chemicals that were mentioned."
(Bangor, C2DE, Wave 2)

"I check the labels on the food that I buy a bit more carefully." (Exeter, C2DE, Wave 2)

5.2 Specific changes

The only specific impact observed (i.e. an action based on the specific advice provided) was that some participants had started to avoid eating burnt toast.

"I am more likely now to put the toast in the food waste bin, if it is burnt." (Exeter, C2DE, Wave 2)

"I have stopped burning my toast/food due to the acrylamide this has been quite hard as I love well done toast." (Bangor, C2DE, Wave 2)

This tended to be more common among those from lower socio-economic backgrounds. Participants explained that they had changed their consumption of burnt toast as a result of the association with cancer. As discussed in section 4.1.4, specifically naming possible health problems in advice led to stronger, emotive responses.

There are a number of reasons why the information on acrylamide may have resulted in behaviour change, despite the fact that participants commonly dismissed the risk in the groups as 'unproven' or 'uncertain'. Firstly, the advice lists cancer (perceived as a serious risk) as a possible impact - though cancer was mentioned in other advice tested. Secondly, the advice suggested an easily adoptable action to mitigate/reduce the risk - cooking chips and toast to a golden colour. Notably, none of the participants said they had changed their behaviour around chip consumption. This suggests that actions may only be taken if they are about avoiding foods that are not necessarily enjoyable in the first place, i.e. the action does not entail loss. It further suggests that views about incidence and evidence may be forgotten if people remember (a) the risk and consequences and (b) a clear action to mitigate the risk.

Further examination of the characteristics of successful risk communication is in the following section.

6. Communication Needs

This section explores participants' expectations around the communication on chemical contaminants, in terms of when they thought it was appropriate to communicate and the channels they thought would be effective.

In Wave 2 of the research, consumers were given a scenario of a new chemical contaminant that had become known to the FSA and they had to suggest what information should be given to the public and when it would be appropriate to provide advice (See Appendix B). The outcome of this task, about when and how the government should inform the public on chemical contaminants in food, is discussed in the following sections. Overall, there were tensions around when participants wanted to be informed about chemical contaminants, based on divergent information and risk appetites amongst individuals. On the whole, participants preferred to be told when there was a clear action they could take to mitigate a risk. Participants felt strongly that any information provided should be clear and highly specific in terms of the levels of consumption or exposure that they should avoid. They also felt that communication should be proportional, and they wanted to be signposted to information about lower level risks - feeling this to be more appropriate than direct communication through mainstream media channels (which should only be used to rapidly disseminate information about high risks). Participants also felt that advice should be consistent, and that Government should be joined up in communication about the risks and health benefits of different foods to avoid conflicting advice.

6.1 Communicating risk

This research validates evidence from previous research on chemicals in food and communicating risk: that communicating a **clear and specific action to mitigate risk** is key in communicating about risks. Underpinning the specific action people can take, there are a number of components that are important to include or consider so people feel informed and empowered, including:

- **the nature and severity of the risk**
- **proportionality**
- **strength of evidence** and
- **consistency of advice**

These components are explored in turn below.

6.1.1 Specificity of action

In Wave 2, participants were presented with the following statement around when they wanted Government to communicate with them about chemical contaminants in food (see Appendix B):

*“The government **should only** tell the public about chemical contaminants in food when there is a clear way for them to avoid eating it”*

Participants agreed that they did not always want advice about chemical contaminants in their food unless there was something they could do to avoid the risk – a clear action to take. When deciding how the Government should communicate about a new contaminant, they expressed a strong preference for clear and specific advice on the action to be taken to avoid exposure to chemical

contaminants. There were a number of components to this. In order for advice to be considered actionable, it should be:

- specific about which food items to avoid
- easily graspable in terms of the quantities that approach higher levels of risk, expressed in terms of the weights or portion sizes that are safe to eat, within specific timeframes
e.g. X portions per week/month.

“It is very important to know what types of food one should readily avoid. It is also wonderful to know what quantity/weight/portion size that are safe to consume at any given time.” (London, ABC1, Wave 2)

“It should be made clear in what food it is likely to be found and how much consumption would be safe.” (Leicester, ABC1, Wave 2)

Participants sought a clear steer about the levels of contaminants that were of high concern, and wanted clarity on how far they should limit consumption of particular foods, in order to avoid exposure and reduce the risk. Where there were many sources of risk (e.g. many foods that contained the contaminant), a lack of clear quantification, and multiple serious health impacts, participants perceived the advice to be unfocussed, diffuse, and harder to engage with. Furthermore, the more food sources listed, the more the risk appeared unavoidable, and participants were left feeling that there was no point taking any action.

“Just let you physically, give you some kind of idea of what is a dangerous level so for example you may talk about four tins of John West is acceptable in a week or are we talking a thousand bowls of rice and I may get some slight upset stomach from an arsenic problem. It’s about giving you a realistic idea” (Newcastle, C2DE, Wave 1)

“It’s pointless telling me that “too much” of anything can lead to problems. I need to know how much ‘too much’ is.” (Leicester, ABC1, Wave 2)

6.1.2 Nature and severity of the risk

When discussing how the Government should inform the public about contaminants in the ‘new chemical contaminant’ task (see appendix B), participants felt that any advice communicated needed to be clear about the specific health risk(s) associated with the chemical contaminant. It was suggested that they would pay greater attention to advice that named specific health problems and indicated the severity of the consequences. Throughout the research, more attention was paid to severe or visceral consequences. For example, the mention of harm to the development of the brain and nervous system was noted as concerning in the advice provided on lead in Wave 1.

“There is no point in knowing that there is a risk but not being told exactly what that risk is and what this could mean as far as your wellbeing is concerned.” (Swansea, ABC1, Wave 2)

“It’s very important to have the correct information regarding specific health problems as different contaminants have different effects to health.” (Bangor, C2DE, Wave 2)

6.1.3 Proportionality

Alongside the severity of the risk, participants wanted to know about the likelihood of illness, or incidence of risk. However, similar to findings in previous research⁶, indication of the severity of consequences needs to be proportional to the level of risk. The presentation of very severe consequences alongside very low likelihood tended to be viewed as incongruous and inappropriate. In

⁶ FSA (2015). Consumer understanding of food risk: chemicals

<https://www.food.gov.uk/sites/default/files/consumer-understanding-of-food-risk-chemicals.pdf>

this research, proportionality also referred to the low level of risk in particular foods, where participants felt it was inappropriate for the risk to be communicated if they were very unlikely to consume the amount of food that was considered 'risky'. For example, the case of arsenic in rice and apple pips was discussed, where participants discounted the severity of the risk and did not want to know as they would need to consume a lot of rice and apple pips for the risk to be relevant. Further, some expressed concern about communication leading to irrational behaviour, and felt they could become paranoid about different food types needlessly if some risk information was communicated.

“Are we talking two bowls of rice and you’ll drop dead? No we’re talking lorries full of the stuff I would assume and processed down... rice contains arsenic, cheers thanks for that, you’ve just stopped everybody buying rice now.” (Leicester, ABC1, Wave 1)

“It’s all a matter of choice. Sometimes a bit of knowledge can be a dangerous thing and you said you liked eating nuts but you could go to work tomorrow with your packed lunch, you could get really paranoid about this stuff.” (Leicester, ABC1, Wave 1)

Though some participants wanted information about all risks, most commonly, participants suggested that there should be a general communication about contaminants (i.e. that they exist; that there is a risk) made available to all, with clear signposting to more specific advice and scientific evidence should they want to find out more. On the whole, information was preferred to be kept at arm’s length unless the risk was very high in terms of likelihood and consequence. This is relatively unusual compared to other research conducted with members of the public about communication of food safety information - for example, when discussing Food Hygiene Rating information, participants will commonly express a very high appetite for information. Suggestions were made for the Government to adopt a 'scale of risk' approach to the timing of communications, where high level risks should be communicated immediately through media channels (see section 6.3.1), whilst lower level risks should be kept at arm’s length.

6.1.4 Strength of the evidence

In addition to highlighting the nature, severity and level of the risk, participants wanted reassurance and confirmation that advice was based on strong evidence. In Wave 2, participants were presented with the following statement around when they wanted the Government to communicate with them about chemical contaminants in food (see Appendix B):

*“The government should tell the public straightaway **every time** there is any scientific evidence to suggest there may be chemical contaminants in food.”*

While some agreed with the statement, wanting Government advice as soon as there is any indication of risk caused by chemical contaminants in food, in general participants tended to disagree and did not want to be told unless the evidence was clear. If risks were unknown, uncertain or unproven, participants were more likely to discount the risk.

“I think evidence gives it more value. Because a lot of it I found was ‘generally it may cause’...but if I see evidence of something causing something, and it’s quite a high proportion, then I’m more likely to take it.” (Bangor, C2DE, Wave 1)

“I’d want information on something that’s actually proven, and not something that ‘may be linked to’...Something that’s scientifically proven.” (Leicester, ABC1, Wave 2)

There was a desire for any evidence to come from a reliable, credible source e.g. a reputable scientific research institution, university department or independent scientists. At the same time, it was important that advice was in clear and accessible language. Scientific 'jargon' was said to increase anxiety in an already complex landscape.

“Have something that people who aren’t from a scientific background can relate to... If they said to be harmful you’d need to eat 10,000 of these a week then it would put it in perspective.” (Exeter, C2DE, Wave 1)

“The information needs to be straightforward and tell you what the risk could be without confusing people. I would like advice to be given in language clear for all to understand not just scientific jargon.” (Exeter, C2DE, Wave 2)

However, it is worth noting that in the case of acrylamide, where the evidence was considered to be less clear, this was the only advice acted on in the research. This suggests that (some of) the information about the strength of evidence may be side-lined or eventually forgotten, and that what people actually remember is the consequence of the risk and the action to mitigate it, rather than the incidence or burden of proof.

6.2 Conflicting health advice

Whilst advice can include all the right information, if it conflicts with other health advice heard, it is likely to be ignored. This is because contradictory advice is confusing, may contradict people’s own beliefs, and leaves people feeling unsure about who to trust. Participants wanted communication to feel joined up across Government, and avoid the sense of mixed messages between healthy eating on the one hand and food risks on the other.

“All my life I’ve been led to believe that oily fish is very good for you and now they’re telling you not to have too much of it.” (Swansea, ABC1, Wave 1)

While also avoiding conflicting health advice, participants wanted advice which they perceived to be balanced. Some participants reacted negatively to advice which they saw as scaremongering – particularly when this came from the tabloid media.

“If there’s not as big of a risk, I don’t think people should be scared into not eating it, just be educated instead.” (Exeter, C2DE, Wave 1)

“Newspapers are a nightmare at making a headline to unnecessarily worry people.” (Leicester, ABC1, Wave 2)

6.3 Channels for communication

Throughout the research and in particular on the ‘new chemical contaminant’ task, participants cited a variety of ways through which they wanted to receive information about chemical contaminants in food. Typically participants wanted further information to be accessible online. Direct communication (e.g. through media channels) was felt only to be appropriate in cases of high risk or when there is immediate action required. Participants felt that doctors and healthcare professionals should continue to provide targeted advice to specific groups such as pregnant women and the elderly.

6.3.1 Use of the media

Participants suggested that direct media communications were used only in cases where the chemical contaminant was known to be high risk. Media such as TV (news and adverts) were considered appropriate only in order to maximise reach in cases where immediate action is needed. These forms of media being used in other cases where the risk is low and with small quantities which are not harmful, was considered to be sensationalising and scaremongering.

“Special alarms, alerts or concerns can be raised by the Government or concerned body through the media when a risk is of immediate threat.” (London, ABC1, Wave 2)

Social media was commonly suggested as an appropriate way to communicate about risk.

6.3.2 Doctors and healthcare professionals

Participants believed targeted advice should be issued by doctors and other healthcare professionals particularly where certain groups are at risk e.g. pregnant women, the elderly, those with health conditions. They were perceived to be responsible for providing this advice when specific groups visit them for appointments. Additionally, information leaflets and posters in doctor surgeries were also suggested as a channel of information.

"I think advising pregnant women is fairly straight forward as the majority will attend midwife appointments etc. or will have gone to their GP so perhaps the GP could give them the advisory information. For the elderly I expect it could be amongst the communication they already get (e.g. Flu jab invites)." (Leicester, ABC1, Wave 2)

6.3.3 At point of purchase

Some participants suggested that information should be provided on food labels or in the supermarket next to food items, in order to raise awareness about particular contaminants in food. Due to the limited space on a label, participants suggested that there could be an icon to raise initial awareness, with signposting to further information.

"What they should be putting on the label is what can be harmful in that product... it's then up to the consumer." (Swansea, ABC1, Wave 1)

"All instructions should be clear on all packaging as it lets the buyer know what he/she is purchasing." (Bangor, C2DE, Wave 2)

6.3.4 Education

Alongside all of the above, participants believed information should start in schools. However, there were concerns raised that this information could worry young children and make them fussy about the food they eat.

"I think starting this information in schools is a good thing as then the younger generations coming through now will know about this without fail." (Exeter, C2DE, Wave 2)

7. Principles for communication

7.1 Conclusions

Overall, participants had low knowledge and awareness of chemical contaminants in food. Learning about the risk for the first time increased participants' appetite for greater communication from Government that chemical contaminants may exist in food, and are a source of risk. Beyond this, on the whole participants wanted advice 'at arm's length' - they wanted to be notified that there may be risks, with more detailed information available online. However, there are a number of challenges communicating about this.

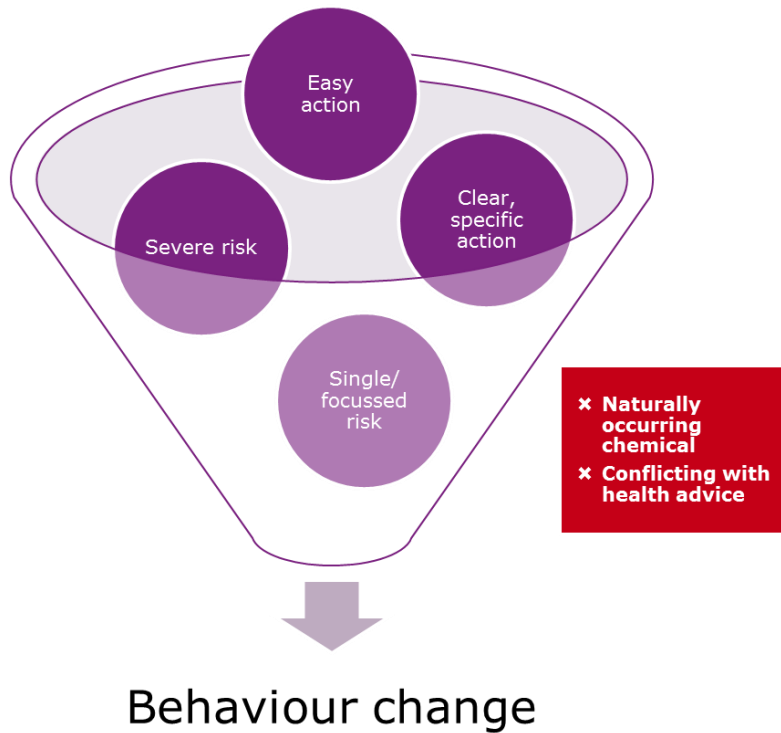
- = **Understanding the level of risk:** the tendency to equate 'natural' with 'safe' is widespread, and advice about 'naturally occurring' chemicals which are in everyday food, e.g. arsenic in rice and mycotoxins in cereals and nuts, is likely to be dismissed. On the other hand, perceptions of the risks of 'man-made' chemicals are likely to be overestimated. Please see section 4.1.2 for further information.
- = **Multiple sources of risk vs. quantifiable risk:** people are concerned about risks that accumulate in the food system by being eaten in a wide variety of foods, being present in staple foods, or by entering and building in the food chain (see section 4.1.1). However, this idea is hard to grasp, given the difficulty of quantifying and calculating the cumulative risk. This is challenging given the desire for specific, quantifiable actions. Further, as risks become diffuse, people tend to see them as unavoidable, and may relinquish responsibility - making it less likely that they will take action. Please see section 6.1.1 for further information.
- = **Appropriateness of communication:** the risks of chemical contaminants are generally perceived to be very low. In some cases, this may prompt questions about proportionality and the appropriateness of communication. As a result of perceived low levels of risk, people may be unlikely to take actions to mitigate risk. Please see section 6 for further information.

These factors may help explain why limited specific behaviour change was observed as a result of exposing people to Government advice. However, as demonstrated in the case of acrylamide, it is possible that action may be taken in spite of some of these challenges. Whilst people may rationally discount the risk at the point of receiving information, their propensity to act does not necessarily depend on convincing people of all of the facts. The evidence around acrylamide suggests that the following factors may be more influential in changing behaviour than 'facts' (i.e. the strength of evidence or incidence):

- = Severity of consequence
- = Clear action
- = Easy action (does not impinge on pleasure)
- = Focus on a single source of risk

These factors, as well as possible barriers to effective behaviour change, are summarised in figure 7.1 below.

Figure 7.1 Factors influencing behavioural change



The principles overleaf, drawn from this research, have been developed to help communicators how to frame advice about the risk of contaminants, in order to both inform consumers, and maximise the change that they will be remembered, trusted, and acted upon.

Principles for communication

- = Be **proportionate** to the level of risk chemical contaminants pose:
 - Active messaging and warnings should be issued if chemical contaminants pose a high and/or immediate threat, especially those exposing large groups of the population to serious health risks
 - Chemical contaminants which are a lower risk should be kept at arm's length with signposting to information available online

- = When advice can include a **clear and specific action** for participants to take:
 - Ideally, this should be quantifiable and include a high level of specificity about: the type of risk, level of risk, severity of consequences, food items to avoid and quantities which are safe to eat within specific timeframes
 - Avoid saturation and dilution by listing multiple sources of risk or health consequences - this can lead to the risk being considered unavoidable, or lead to the advice being perceived as overwhelming or alarmist

- = Ensure advice is **evidence based** and from a reliable and credible source (stressing independence if possible)

- = Advice should be in **clear and accessible language** – avoid scientific jargon

- = Be clear **who is at risk** – e.g. specific target groups

- = Ensure Government advice is **consistent** and appears joined up across 'health' and 'risk'
 - People expect advice about 'food' to be cohesive, regardless of source.

- = Have information which is available to all - with clear **signposting** to accessible information for those who want to know more

- = In a situation where a chemical contaminant poses a **high or imminent threat**, use a channel which can reach a wide range of consumers e.g. the media. The media should only be used in these circumstances

Appendix A – Achieved sample

Achieved sample: wave 1

	TOTAL (Overall)	Group 1 - London	Group 3 - Bangor, Northern Ireland	Group 5 - Swansea	Group 7 - Newcastle	Group 9 - Leicester	Group 11 - Exeter
TOTAL							
	47	8	8	7	8	8	8
Gender							
Male	23	4	4	3	4	4	4
Female	24	4	4	4	4	4	4
Age							
18-24	5	2		1		1	1
25-34	7	1	2	1	2	1	
35-44	14	2	2		4	3	3
45-54	5	1	2	1			1
55-64	13	1	2	3	2	3	2
65+	3	1		1			1
SEG							
ABC1	23	8		7		8	
C2DE	24		8		8		8
Interest in Science							
2	1				1		
3	3	1			1		1
4	3					2	1
5	4	3					1
6	8	2	1	1	1	1	2
7	12	2	2	2	2	2	2
8	11		4	3	2	1	1
9	5		1	1	1	2	

Achieved sample: wave 2

	TOTAL	London	Bangor	Swansea	Leicester	Exeter
TOTAL	26	6	6	2	6	6
Gender						
Male	12	3	3	1	3	2
Female	14	3	3	1	3	4
SEG						
ABC1	14	6		2	6	
C2DE	12		6			6

Appendix B –Topic guides

Topic Guide: wave 1

FSA Consumer attitudes to chemicals in food

Chemical contaminants Citizens Forums - topic guide v1

Introduction and background (10 mins)

	Stimulus / tasks	Approx timing
<p>1.1 Chair introduction</p> <ul style="list-style-type: none"> ○ Introduce yourself and Kantar Public – an independent social research agency ○ We are conducting research on behalf of the FSA (Food Standards Agency) ○ Introduce FSA attendees and gain permission for them to observe (if present) ○ This research will explore your views on chemicals contaminants in food and the information you would like about these issues. ○ The research will be used in the FSA’s work ensuring participants can make informed choices about what they eat. ○ No right or wrong answer – interested in your views ○ Length – 90 minutes ○ Research is voluntary - participation will not affect your current or future relationship with FSA or food industry ○ Research is confidential and anonymous – your personal details will not be shared with the FSA ○ Information provided will be used for research purposes only ○ Gain permission for audio recording – shared only with the Kantar Public research team. 		2 mins
<p>1.2 Group introductions</p> <ul style="list-style-type: none"> ○ Participants introduce themselves to the group <ul style="list-style-type: none"> ○ Name ○ Who they live with – partner; number / age of children, friends ○ What they do – work or hobbies ○ Their favourite food 		8 mins

Existing awareness and concerns about chemical contaminants in food (20 mins)

Objectives of this section:

- To explore the initial concerns that participants have about chemical contaminants in their food.
- Test whether participants are aware of advice issued by the Government regarding certain chemical contaminants (including Acrylamide, Lead, Mercury, Arsenic, Mycotoxins and , Polychlorinated biphenyl (PCB) and Dioxins)

	Stimulus / materials	Approx timing
<p>2.1 Existing awareness and perceptions of chemicals</p> <ul style="list-style-type: none"> ○ What types of chemicals can they name that might be found in food? <ul style="list-style-type: none"> ○ <i>List all suggestions on flipchart</i> ○ For what reasons do they think chemicals might be in food? ○ How they feel about these chemicals in food ○ Whether there is a way to group the chemicals they have come up with – if so, how? ○ Where do they find out information about chemicals that might be found in food? <ul style="list-style-type: none"> <i>Flipchart all sources</i> ○ How much do they pay attention to this information? ○ How much do they trust this information? <ul style="list-style-type: none"> ○ Reasons for views ○ Do they know of any Government advice about chemicals in food? <ul style="list-style-type: none"> ○ Where have they seen this? ○ Did they actively search for it? ○ Any views on this information ○ How do participants feel about Government giving advice on chemicals in food <ul style="list-style-type: none"> ○ Would they pay attention to it? ○ Why/ why not? ○ How does it compare to sources already mentioned? 	Flipchart	10 mins
<p>2.2 Hand out stimulus A (one each) and give a minute to read it</p> <ul style="list-style-type: none"> ○ Initial responses ○ Does the information raise any questions? ○ Are any of the reasons more concerning than the others – Why? ○ Are any of the reasons less concerning than the others – Why? 	Stimulus A	5 mins

<p>2.3 Moderator to explain that today we are interested in talking about chemical ‘contaminants’ in food.</p> <p>Hand out stimulus B (one each) and give a minute to read it</p> <ul style="list-style-type: none"> ○ Initial responses ○ Does the information raise any questions? ○ Explore how concerned participants reactions to chemical contaminants in food 	<p>Stimulus B</p>	<p>5 mins</p>
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Exploring participants’ views about risks of chemical contaminants in food (25 mins)

Objectives of this section:

- Understand participants’ **views of risks** associated with certain chemical contaminants in food
- Understand **the extent to which information has an impact** on their behaviours regarding eating habits, cooking, storage, and processing of food

	<p>Stimulus / tasks</p>	<p>Approx timing</p>
<p>3.1 Exploring awareness of certain chemical contaminants in food</p> <p>Moderator to ask whether participants know anything about the following chemicals which can be found in food (very briefly call out):</p> <p><i>If needed, explain: anything they know about these chemicals being in food, how they get there, or the risks</i></p> <ul style="list-style-type: none"> ○ Arsenic ○ Lead ○ Mercury ○ Acrylamide ○ Mycotoxins ○ Polychlorinated Biphenyl (PCB) and Dioxins ○ Whether they have heard of it before ○ What do they know? ○ Where did they find information on these chemical contaminants? Level of trust in these sources. 		<p>5 mins</p>

- To understand whether participants **understand the specific advice** available on certain chemical contaminants and why the advice was issued.
- To understand participants views on where Government advice hasn't been issued.
- To understand **the extent to which information has an impact** on their behaviours regarding eating habits, cooking and processing of food.
- To understand what information participants' would want to know about certain chemical contaminants and under what circumstances.

<p>4.1 PAIRS exercise examining what participants would want to know about different chemicals</p> <ul style="list-style-type: none"> ○ <i>Moderator to introduce the next task and stimulus D: I'm now going to give you some Government advice on some of the chemical contaminant. I want you to individually mark the advice using red pens for anything you found confusing and green pens for anything you found useful/ helpful or where the advice was clear.</i> 	<p>Stimulus D and red and green pens</p>	<p>10 mins</p>
<p>4.2 Moderators to bring participants back together to discuss their responses to the Government advice</p> <ul style="list-style-type: none"> ○ Participants to feedback initial reactions and responses – anything that stood out or raised concerns ○ Ask participants to feedback what they marked up in green (<i>add to list of principles</i>) <ul style="list-style-type: none"> ○ What did they like about the advice/ find helpful/ useful? ○ Why was it helpful/ valuable/ clear? ○ Ask participants to feedback what they marked up in red <ul style="list-style-type: none"> ○ What didn't they like advice/ not find helpful/ clear? ○ Why was it not helpful/ useful/ clear? ○ Did the advice feel appropriate? ○ Did they have any other questions? ○ Overall, how well did the participants understand the information and advice on chemical contaminants? <ul style="list-style-type: none"> ○ Why do they think the advice was issued, i.e. what purpose do they think it serves? ○ How far does the advice fit with their expectations for Government advice about chemicals (discussed earlier) <ul style="list-style-type: none"> ○ Do they want this advice from Government/ think it's necessary? ○ If yes, why do they want it? Why is it useful? ○ If no, why not? ○ Probes: What is missing / what else would they want to know / is anything 'too much' information 		<p>15 mins</p>

<ul style="list-style-type: none"> ○ Return to the Mycotoxins previous stimulus and explain there is no Government advice currently issued <ul style="list-style-type: none"> ○ Based on discussion, would they want any Government advice on this chemical contaminant? ○ Reasons for views ○ If yes, what kinds of things would they want to know and why would this be useful? ○ Does anything in the information challenge what they previously thought about chemicals in their food? – how and why? <ul style="list-style-type: none"> ○ How do they feel having been given this information <ul style="list-style-type: none"> ○ Benefits / drawbacks ○ Do they think it will make a difference to their everyday life <ul style="list-style-type: none"> ○ If so, how and why ○ If not, why not ○ Prompts: regarding eating habits, buying food, planning meals, cooking, and processing of food. ○ Whether this varies for the different contaminants. ○ Is there anything else they would want to know about these chemicals? <ul style="list-style-type: none"> ○ What information and why? 		
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Developing communication principles (10 mins)

Objectives of this section:

- Explore what practicable and actionable information participants want on chemicals where they can do something to minimise risks
- To identify when it would be appropriate to produce targeted advice on chemical contaminants in food, what they would want to know, who they would want to hear from and how this information should be presented.

<p>5.1 Identifying appropriate ways of communicating about chemicals in food <i>(add discussion to list of communication principles which has been made throughout session)</i></p> <p>Overall, thinking about everything they have learned today about chemicals in their food:</p> <p><i>Return and add to the list of communication principles, using the probes below to understand:</i></p> <ul style="list-style-type: none"> ○ When do they want to be told about chemical contaminants in food, i.e. in what circumstances – and why this varies ○ What kind of information is important for them to know for the different types of chemicals: <ul style="list-style-type: none"> ○ Arsenic ○ Acrylamide ○ Lead ○ Mercury ○ Myotoxins 	<p>Flipchart</p>	<p>10 mins</p>
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<ul style="list-style-type: none"> ○ PCB's and Dioxins ○ At what point do they want to know there are chemicals in their food? <ul style="list-style-type: none"> ○ Does the timing differ for different types of chemicals / foods/ audiences? ○ If yes, how does it differ and why? ○ If no, why not? ○ Is it enough just to know if something is safe/not safe? <ul style="list-style-type: none"> ○ If more needed, what? ○ Who do they think should be responsible for providing information about chemicals in food to the public? Why? ○ In what situations should participants seek out this advice? ○ In what situations should Government provide information/ advice to participants? ○ Which kind of messages or communication about chemicals in food are they most likely to pay attention to? <ul style="list-style-type: none"> ○ How would this affect their behaviour? ○ Which pieces of information are needed to ensure participants can make an informed decision? <p>Moderator to return to list of communications principles made over the session and ask if participants want to add anything</p>		
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Summary (2 mins)

<p>6.1 Overall feelings about chemical contaminants in food</p> <ul style="list-style-type: none"> ○ Overall, how are participants now feeling about chemical contaminants in food <ul style="list-style-type: none"> ○ Why? ○ Has this changed from how they felt at the beginning? 		2 mins
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THANK AND CLOSE

- Any final comments for FSA?
- Explain about next wave of online and instructions on using app
- HAND OUT HOMEWORK TASK TO THOSE WHO ARE INTERESTED IN TAKING PART IN WAVE 2 – EXPLAIN THAT THE TEAM WILL BE IN TOUCH WITH THOSE WHO AGREED TO BE RECONTACTED
- THANK AND CLOSE
- Check they understand how incentive cards work

Online activity plan: wave 2

Task 1 - Introduce yourself!

1. Hello and welcome to the forum!

This research is being conducted by Kantar Public – an independent research agency on behalf of the Food Standards Agency, an independent Government department. The aim of this project is to learn more about your views on chemical contaminants in your food and how you would like this to be communicated to you.

This project **will close at 23:59pm on Sunday 22nd January 2017**. We ask you to please **login a few times** while the project is open and complete the activities that will be posted and chat to us and other participants. We expect this to take around 90 minutes of your time in total.

Please be reassured that this is not a test of your knowledge and there are no right or wrong answers – it's all about your views.

If you have any questions about the research please contact Emily O'Neill on Emily.ONeill@KantarPublic.com or t +44 (0)20 7656 5593.

If you experience any technical issues, please contact support@crowdlab.com, or tap the 'Support' button in the app.

We look forward to your posts!

The Kantar Public Team ☺ [INSTRUCTION]

2. Firstly, it would be great to learn more about you, so could you tell us a bit about yourself, such as what you do for a living and any hobbies you may have? [OPEN TEXT]
3. Thanks for that! We hope you enjoy the rest of the forum!

If there is anything you want to tell us about how you are feeling about chemical contaminants in food that hasn't been covered, please feel free to send us a photo, video, audio message or text anytime on the 'Anytime activities' tab. [INSTRUCTION]

Task 2 – Re-cap

4. When we last met in December, we started to discuss chemical contaminants in food. What, if anything, do you remember from the focus group? [OPEN TEXT]
5. Have you done anything differently since we last met, such as how you buy, eat or cook food? [OPEN TEXT]
6. Why/ why not? [OPEN TEXT]

Task 3 – Christmas activity

7. After the focus group we gave you a task to take away and complete over the Christmas period.
What types of chemical contaminants, if any, do you think could have been in your food over the festive period?
[OPEN TEXT]
8. How did this make you feel about the food you buy and eat? [OPEN TEXT]
9. Thanks for completing that for us – that's really helpful! [INSTRUCTION]

Task 4 – Communication principles

10. At the focus group, you may remember that we started developing a list of what information or advice you want from the Government on chemical contaminants in your food and when you want it.

We have put together a list of 5 main principles from everyone we have spoken to about how they want Government to communicate with them about chemical contaminants in their food.

We are now going to show you the 5 principles and ask for your views on them. We are really interested in your honest opinions so please let us know if you disagree or agree with the principles, and why, and if you think the principles can be improved in any way!

Please press the 'next' button to view the first principle. [INSTRUCTIONS]

11. **Communication principle #1:** Target the right audience

Any Government advice issued should be clear and targeted to the appropriate consumer group e.g. pregnant women, parents and the elderly.

Do you agree/ disagree with this? Why/ why not? [BLIND FORUM]

Task 5 – Communication principle #2

12. **Communication principle #2:** Be specific about the risk

Any Government advice needs to be clear and specific about what the risk/consequence is e.g. the name of the specific health problem.

Is this important to you? Why/ why not? Can you give any examples of what you would like the advice to include? [BLIND FORUM]

Task 6 – Communication principle #3

13. **Communication principle #3:** Be specific on quantities

Government advice needs to provide clear and specific advice on food items to avoid and the weights/ portion size/ quantities that are safe to eat, within specific timeframes e.g. X grams per week/ month where possible.

Is this important to you? Why/ why not? How, if at all, would this affect you in your daily life? [BLIND FORUM]

Task 7 – Communication principle #4

14. **Communication principle #4:** Channels of advice

Government should be responsible for providing this advice, as well as doctors and health care professionals. Advice should be available online, in leaflets in doctors' surgeries, in supermarkets next to the food/on banners, or on the packaging with an option to find out further information.

Which method of providing information do you think is best, in terms of helping participants make informed choices? Please select up to three, giving reasons for each choice.

How else do you think Government advice on chemical contaminants in food should be communicated to participants? [BLIND FORUM]

Task 8 – Communication principle #5

15. Communication principle #5: Timing of advice

Government advice on chemical contaminants in food should start with education in schools. It should also be provided:

- When there is an immediate threat
- When participants can do something about it
- At the point of purchasing food which contain chemical contaminants
- Via healthcare professionals e.g. to pregnant women, parents and the elderly

Do you agree/ disagree with the above suggestions on when Government advice should be available? Why/ why not?

Do you have any other suggestions on when Government advice on chemical contaminants in food should be communicated? [BLIND FORUM]

Task 9 – Rank the communication principles

16. Thank you for sharing your views on each of the communication principles!

Please now rank them in order of how important they are to you, with 1 being least important and 5 being most important. [DRAG AND DROP (RANK)]

17. Thank you! Please tell us why you ranked the principles in that order. You can explain your answer by text, audio or video. [MULTIMEDIA]

Task 10 – When should the Government issue advice on chemical contaminants in food?

18. Thanks for all your feedback so far. We would now like to know what you think about the following statements about when the public should be told about chemical contaminants in their food:

*“The Government **should only** tell the public about chemical contaminants in food when there is a clear way for them to avoid eating it”*

Please tell us if you agree or disagree with this statement and why.

Please note: This activity is open for other participants to read and comment on if they choose to. We would like you to get involved in having conversations and debates where you feel comfortable, but please be respectful of each other's views. [BLIND FORUM]

Task 11 – When should the Government issue advice on chemical contaminants in food?

19. Thanks for taking part in the previous discussion. We hope you were able to get involved in some interesting conversations. We would like to do the same activity again by asking about your views on another statement about when you should be told about chemical contaminants in your food:

*“The Government should tell the public straightaway **every time** there is any scientific evidence to suggest there may be chemical contaminants in food.”*

Please tell us if you agree or disagree with this statement and why.

Please note: This activity is again open for other participants to read and comment on if they choose. We would like you to get involved in having conversations and debates where you feel comfortable, but please be respectful of each other's views. [BLIND FORUM]

Task 12 – A new chemical contaminant has been found!

20. We would now like you to imagine that you work for the Government and you have received some information from your scientific advisors about a new chemical contaminant which has been found in food. The chemical contaminant is called “Chemical NewXQ”. It is naturally present in rivers and the sea in the UK. As a result, it can be absorbed up by certain types of fish.

You have been told by your scientific team that eating small amounts of these types of fish is not harmful to human health. However, very large quantities eaten over a long period of time could have health risks.

If you were the Government:

- Do you think the public need to be informed that this chemical contaminant could be in their food?
- What information, if any, would you communicate about this chemical contaminant?
- Do you think participants should be given consumption advice on the types of fish affected?
- Do you think it is necessary to inform specific groups of population depending on the risks?
- How are you going to tell them?
- How would you expect people to react to the advice?

For this activity, please can you record your answers by video or audio. You can be as creative as you like, including lots of detail that you think is important for us to know!

You might find it helpful to write down what you are going to say for each of the questions above before you record.

If you do not wish to send an audio or video, then please feel free to answer by text - but don't forget to answer all the questions above.

Good luck!

Please note: This activity is again open for other participants to read and comment on if they choose. We would like you to get involved in having conversations and debates where you feel comfortable, but please be respectful of each other's views. [BLIND FORUM/ MULTIMEDIA]

Task 13 – Reflection

21. Thank you for all your responses so far. Thinking back over everything we have discussed over the last few days and all the information and Government advice you have read, will you change the way you buy or cook food? [OPEN TEXT]
22. Why/Why not? [OPEN TEXT]

Task 14 – Thank you!

Subtitle: Rate us!

23. Thank you again for taking part in this research project about chemical contaminants in food. We hope you have enjoyed taking part.

On a scale of 1 -5 (where 1 is not at all and 5 is a lot), how enjoyable have you found taking part in this forum?
[SLIDER]

24. Thank you!

Next steps

Our team will be in touch to arrange the £40 payment to everyone who has logged in and responded to all of the activities.

If you have any final comments or questions, please don't hesitate to post them here.

Have a great rest of your week! [TEXT/ OPTIONAL]

Appendix C – Stimulus material

Stimulus materials: wave 1

Stimulus A

Why are there chemicals in my food?

Chemicals may be present in food for different reasons. They can:

- Be used in the production and preservation of food
- Occur naturally in food
- Be present as a result of environmental contamination
- Arise from the processing of food

The presence of such chemicals in food is regulated to minimise risks and to ensure that food safety is not compromised.

Stimulus B

What are chemical contaminants?

Chemical contaminants are substances that are not intentionally added to food. They may arise in food naturally, as a result of processing, or from the environment.

Stimulus C

ACRYLAMIDE

What is it?

Acrylamide is a chemical produced naturally in food as a result of cooking starchy rich food at high temperatures. E.g. baking; frying; grilling; toasting and roasting food.

Acrylamide can be found in food such as:

- Toast
- Chips

Risk



It is unclear what the risks are from acrylamide in food. However it has the potential to cause cancer.



LEAD

What is it?

Lead is a heavy metal and naturally present in the environment and as a result of human activities. Lead has a wide variety of industrial use, including paint and petrol.

Lead is found in a wide variety of food at low level, such as:

- Cereal
- Potatoes
- Higher levels can be found in game, if it has been shot with lead.

Risk



Lead is a particular risk for toddlers and children, pregnant women and women trying to conceive because exposure can harm the developing (brain and nervous system.)



ARSENIC

What is it?

Arsenic is naturally present in the environment, which means it gets into food and water with levels varying in different regions of the world.

Arsenic can be found in a wide variety of food.

- Rice has higher levels than other cereals.
- Hijiki seaweed has very high levels.

Risk



Arsenic in our diet could be harmful to health and could contribute to some people getting cancer.



MYCOTOXINS

What are these?

Mycotoxins are a group of naturally occurring chemicals produced by certain moulds growing on food crops during production and subsequent storage.

They can grow on a variety of different crops and foodstuffs including

- Cereals
- Nuts
- Spices
- Dried fruits

Regulatory limits are set for mycotoxins which are achievable by good agricultural practice, and reduce contamination as far as possible in order to protect consumers health.

Risk



Different mycotoxins can cause a variety of adverse health effects such as cancer, liver damage, gastrointestinal and kidney disorders.



POLYCHLORINATED BIPHENYL (PCB) AND DIOXINS

What is it?

Dioxins and polychlorinated biphenyls (PCBs) are toxic chemicals that persist in the environment and accumulate in the food chain. They are fat-soluble and are found at low levels in many fatty foods, particularly fish and animal products.

PCBs and Dioxins can be found in:

- Fish
- Shellfish
- Meat
- Offal
- Eggs
- Dairy produce

Risks



Longer-term exposure to these substances has been shown to cause a range of adverse effects on the nervous, immune and endocrine systems, and impair reproductive function. They may also cause cancer.



MERCURY

What is it?

Mercury is a heavy metal and naturally present in the environment and as a result of human activities.

Mercury can be present in low levels in a wide range of foods. Higher levels can be found in fish in particular, predatory fish such as:

- Tuna
- Marlin
- Shark
- Swordfish

Risk



The amount of mercury we get from food is not harmful for most people. However, high levels of mercury when pregnant, could affect the baby's nervous system from developing.




SOURCE: <https://www.food.gov.uk/news-updates/news/2015/13461/eating-fish-efsa>

9

Stimulus D

Government advice



Arsenic


Toddlers and young children (ages 1 to 4.5 years) should not be given rice drinks as a substitute for breast milk, infant formula or cows' milk. This is because of their proportionally higher milk consumption and lower bodyweight compared to other consumers.

For all other consumers of rice drink there is no need to change their diet.

The government is also advising people not to eat/consume:

- Hijiki Seaweed

Government advice



Acrylamide

When making chips at home, we recommend they are cooked to a light golden colour. Bread should be toasted to the lightest colour acceptable. However, manufacturers' instructions for frying or oven-heating foods should be followed carefully.

Government advice



Mercury

When pregnant, you should limit the amount of tuna you eat to:

- No more than 2 tuna steaks a week (about 140g cooked or 170g raw each), or
- 4 medium-sized cans of tuna a week (about 140g when drained)

This is because tuna contains more mercury than other types of fish. Children, pregnant women and women who are trying to get pregnant should not eat shark, swordfish or marlin.

Other adults should have no more than one portion of shark, swordfish or marlin per week.

Government advice



Lead

To minimise the risk of lead intake, people who frequently eat lead-shot game, particularly small game, should cut down their consumption. This is especially important for vulnerable groups such as toddlers and children, pregnant women and women trying for a baby, as exposure to lead can harm the developing brain and nervous system.

Not all game is shot with lead. Generally, the large game sold in supermarkets is farmed and will have no or very low lead levels. The FSA's advice is not applicable to consumers of such meat. People unsure about whether their game has been shot using lead ammunition should ask their supplier for information.

Polychlorinated Biphenyl (PCB) and Dioxins

Pregnant women should limit how much oily fish they eat, because it contains pollutants such as dioxins and polychlorinated biphenyls (PCBs). Don't eat more than two portions of oily fish a week. You don't need to give up eating oily fish altogether, as the health benefits outweigh the risks, as long as you don't eat more than the maximum recommended amounts.

Oily fish includes:

- Fresh tuna (canned tuna doesn't count as oily fish)
- Salmon
- Trout
- Mackerel
- Herring
- Sardines
- Pilchards

Stimulus materials: Homework task

Consumer attitudes towards chemical contaminants in food

Name:

Location:

Thank you very much for your time so far! We hope you enjoyed the evening and found it interesting.

Before the mobile project starts in January, there are a couple of short activities we would like you to participate in over the Christmas period. This is a chance for you to think about what you've heard from the focus group this evening and how it fits in with your everyday life. Each of these activities will only take a short time to do.

1. Answer the two questions on the next page



2. Keep a 'log' of anything you hear about chemical contaminants in food over Christmas - including any government advice.



1. Chemical contaminants

1. What types of chemical contaminants, if any, do you think could be in your food over the festive period? (e.g. acrylamide, lead, mercury, arsenic, mycotoxins, or polychlorinated biphenyl etc.)

2. How would you feel about these chemical contaminants being in your food over Christmas?

2. Keep a 'log' of anything you hear about chemical contaminants in food, including any government advice.



Note down anything you see or hear about chemical contaminants in food. This could be on the news or in other media, or from your own research. For each piece of news, note down:

- Where did you see / hear about it?
- What was it saying?
- How did you feel about it? What were your thoughts / feelings?

You can jot these down below!

Thank you!

We look forward to speaking with you further on the mobile project.

Starting 16/01/2016

Kantar Public will contact you in the week starting 19th December to ask if you want to take part, give you more information and instructions for using the mobile forum.